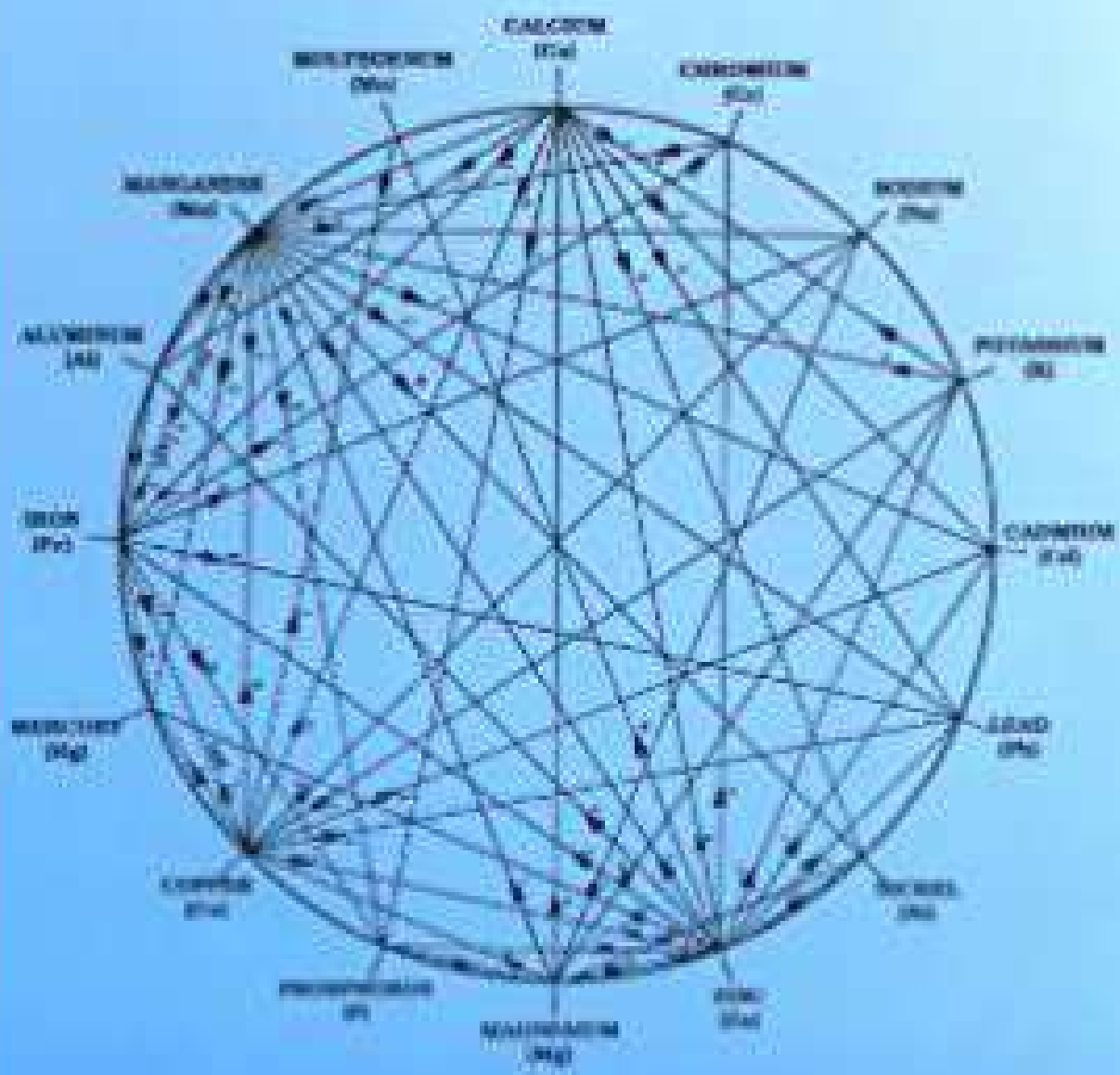


NUTRITIONAL BALANCING AND HAIR MINERAL ANALYSIS



DR. LAWRENCE D. WILSON

**Development Science
And
Development Programs**

Dr. Lawrence Wilson

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DISCLAIMER:

Development programs are a method of balancing and strengthening the body. They are not intended as methods of diagnosis, treatment, prescription or cure for any disease, mental or physical, real or imaginary. The author has a medical degree, but works as a nutrition consultant.

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Other books by Dr. Lawrence Wilson:

Sauna Therapy – 16 chapters discuss the many amazing benefits of sauna therapy. Includes plans to build a reddish heat lamp sauna. Fully referenced and indexed.

Legal Guidelines for Unlicensed Practitioners – 15 chapters discuss the occupational licensing laws and how to stay out of legal trouble while offering healing, psychology and other helping professions. Includes sample disclaimer, disclosure and consent forms.

The Real Self – About forty spiritual idea that can help one live a happier and healthier life.

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To read or order books, please visit www.drlwilson.com or www.Amazon.com

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Dedication and Acknowledgements

This book is first dedicated to the memory of Dr. Paul C. Eck. He was a brilliant researcher and scientist, as well as a great humanitarian and a friend. I studied this work with him for 14 years as his assistant. For this reason, this book has great personal meaning for me, as well as its scientific value for all who wish to learn more about the human body and how to heal it in a powerful, yet simple, inexpensive and safe manner and how to help it develop.

This book is an expansion of the earlier editions. It includes all that was in those editions, plus corrections and newer material that has come to light since Dr. Eck's passing.

I wish to acknowledge Kenneth, Douglas and Nancy Eck, Dr. Eck's children, and all the employees at Analytical Research Laboratories. They have supported Dr. Eck for some 40 years and continue to offer his work.

I am also eternally grateful to all the scientists, researchers and laboratory technicians whose untiring and often unappreciated scientific research has made all this possible. Scientists and engineers are the ones who allow society to survive, not the politically connected ones, but the unseen, untiring workers who unravel nature's mysteries and gifts, and make them available to us in a simple and usable form. They deserve the credit and receive little.

Many others helped make this book possible. Editing of the first edition was done by Megan Lorimer, Patti Kloss, Colin Rigden and Alex Hamblin. Cover design is by Beverly Allisone.

Foreword to the first edition

I have been using hair analysis for the past 15 years and have found this technique to be of great value in restoring the health of my patients. I have worked with the analysis of Dr. Paul Eck who is considered an authority on trace minerals. I have known Dr. Wilson for over 10 years and know that he, too, has become an expert on the balancing of the minerals using hair mineral testing. To this day, I use Dr. Wilson's knowledge in the interpretation of my patients' hair mineral analyses, and his nutritional recommendations based on the test results.

Dr. Wilson's book is easy to follow. It is a very valuable book for any physician interested in trace minerals. The fact that minerals play a critical role in good health is without question. For example, my personal observation is that I have not seen a single heart attack in my practice among those patients taking magnesium orotate. Based on my experience, mineral balancing alone could drastically reduce cardiovascular disease.

Hair mineral analysis is a valuable tool if incorporated with sound dietary advice, detoxification techniques, regular exercise and psycho-spiritual stress reduction.

Abram Ber, MD

Foreword to the 2010 edition

When I first met Dr. Larry Wilson and began studying with him about 8 years ago, I worked only six hours a day and dragged myself home exhausted most nights. I'd tried a few types of nutritional treatment, but nothing worked. Development, on the other hand, did. Today in my practice of holistic psychiatry, I suggest hair testing to most of my patients, and I treat them using the principles in this book.

Alternative doctors order thousands of hair tests every year, but hardly any of them know how powerful a tool hair analysis can be. Most use it only to diagnose toxic metals, or misuse it thinking it directly diagnoses deficiencies and excesses. They're missing its best use: hair mineral analysis shows how the body's energy is out of balance and how to correct it.

Dr. Wilson explains how to read the hair test as a whole, because all these values are interrelated. For example, a low hair zinc level has a different meaning depending on the sodium/potassium ratio, and the treatment is different, as well.

Development is holistic in the sense that it's not about treating any particular disease. Instead, it makes the body healthier so it can overcome disease by itself.

Most of my patients suffer from low energy, even if they mask it with caffeine, America's favorite drug, and most physicians are helpless to treat low energy. I certainly was. The hair test, as I learned, holds the key to treating this problem. Then, once the body has good energy and stamina, it can heal other problems on its own. For example, two years into my treatment my gums stopped bleeding, much to my surprise. As my hygienist said, the mouth reflects the overall health of the body.

Development is at its holistic best when treating toxic metals, a problem mostly ignored by Western medicine. Alternative doctors often chase after these metals with chelation. With development, we improve the body's energy level, rest the sympathetic nervous system and strengthen the organs of elimination. Then the body can clean house on its own.

During treatment, repeated hair tests will show higher levels of mercury, cadmium, lead and other toxic metals. This means the body is doing the work of getting rid of them through the organs of elimination, which include the skin and hair. This approach is gentler and more natural. It relies on the body's wisdom, instead of our own frequently flawed belief that we know the ideal order and timing for eliminating toxic metals and hundreds of toxic chemicals.

This book can help make hair mineral analysis the cornerstone of any holistic practice that uses nutrition. It teaches an easy way for anyone to begin using vitamins and minerals effectively. Development is truly holistic; its long-term individualized approach both prevents and heals. In addition, for the patient it is quite inexpensive. I guarantee my patients results if they do five things:

- Take the supplements regularly.
- Eat much less sugar and enough cooked vegetables and some animal protein daily.
- Call me with any problem or question.
- Repeat the hair test every 3-4 months.
- Stick with it at least a year—preferably two or three.

I can make this promise because development is a treatment that works consistently. Also, once mastered, it's easy to use.

Edward Gogek, M.D.

1. INTRODUCTION - THE NEW HEALING PARADIGM

Joseph, age 22, is a college student who was exhausted, had trouble sleeping, muscle tension, and often felt depressed, anxious and irritable. Other important symptoms included anger, brain fog, heart palpitations, mood swings, candida infection and a tendency for obsessive and compulsive behavior.

Joseph's first hair analysis revealed an unusually serious combination of mineral patterns. He was "burned out" with a four lows pattern. In addition, he had low potassium, indicating he was pushing himself to "fit in with the crowd" or perhaps was prone to excessive worrying. His calcium/magnesium ratio was elevated, indicating he overate on starches and sugars. The test also revealed elevated levels of mercury and aluminum. These may easily contribute to many mental and emotional symptoms such as anxiety and memory loss.

After three months on a development program, Joseph reported feeling generally better, with an improved energy level. The goal of the program is always to increase a person's vitality. His first retest hair analysis showed he was no longer in a four lows pattern, nor was he pushing himself as hard. In addition, he was beginning to eliminate more mercury, aluminum, lead and nickel. In addition to the basic program, he uses a near infrared light sauna almost every day. He also started to meditate to help him remain calm and centered.

Six months later, Joseph reports feeling even better, "making steady progress". He said he passed through a "spiritual crisis" where he saw how angry and resentful he could be toward his other family members. He said the worst is over and he is a much happier young man.

THE BIG PICTURE

It is often helpful to seek for and contemplate the 'big picture' whenever one approaches or studies anything. As this applies to the science of development and healing, in general, I have come to realize that:

- *A tetra is present in all sciences.* This means that four principles are involved. They are 1) love of the Creator or One God, 2) love and service to others, 3) acquiring wisdom or learning, and 4) will or discipline. These are all essential for development science.
- *Development science is, in fact, a universal science and life path, and not a method of healing or even a method of development.*
- *Healing of the body and development of the mind occur, really, as byproducts of following this path.*
- *The principles involved in correcting most health conditions are complex, but similar in all cases.* Development science is totally based on principles of whole system behavior, general

systems theory, cybernetics, biological transmutation of the elements, chaos theory, stages of stress, yin and yang, and others. Dr. Paul Eck found ways to apply them to balance the body chemistry correctly and continuously, over and over, allowing the body to slowly rebuild and restore its enzyme systems. Unfortunately, these principles are not understood or used much in medical care, or in holistic or naturopathic care today. As a result, development seems strange to most practitioners, and cannot be easily “proven”.

- *Development requires that one strictly follow certain rules and principles for the deepest healing to occur quickly and safely.*
- *It also requires more self-discipline than some people have, although once a person adopts the diet and lifestyle, it is not a difficult routine.*
- *The disease process basically involves: 1) slowing of the oxidation rate, 2) reduced oxygenation and hydration of the tissues, 3) clogging of the system with toxins of all kinds, and 4) ‘rusting’, or the buildup of oxides in the body. Oxides cause oxidant damage.*
- *Healing consists of reversing the above process – removing the oxides, infections and other toxins, restoring the body’s oxidation reactions, restoring oxygenation and hydration, and balancing the oxidation rate. The latter is often slow and difficult because it requires restoring the activity of millions of enzymes throughout the body.*
- *Dr. Paul Eck discovered basic ways to do **whole system healing**, which is the only way to heal the body at the deepest levels. This was his genius. Healing just the digestive part of the body, or the cardiovascular part generally misses the mark. This is the problem with conventional post-modern medical care and much of holistic care as well.*
- *I have added a few other procedures such as near infrared sauna therapy and coffee enemas that enhance the process tremendously. In fact, they are needed in most cases because the bodies are even more deranged and exhausted today than when Dr. Eck was alive.*
- *In human beings, one must also heal the mind, emotions and even a person’s spiritual outlook for the deepest healing and for mental development to occur.*
- *The healing process at the deepest levels involves a fascinating process called retracing. Chapter 45 discusses this in depth. In my experience, any healing system that does not cause a lot of retracing is not at the same level and will not provide the same type of deep changes.*
- *A new type of life on earth. Most people run themselves down over time. The principles in this book provide a way that a person literally becomes more developed and healthier as time moves on. This is a reversal of the basic path that most people’s lives take today. This opens up many possibilities concerning life extension and anti-aging.*

THE ROGUES OR OTHERS

Another part of the big picture is the presence of a group of beings we call the *rogues* or *others* who seek to control the people on planet earth. To do this, they poison the air, food and water. They also lie, deceive, steal, murder and rape.

The rogues are very real and this is not conspiracy theory. They are not from this planet and they have much better technology than we do. They are experts at advanced sciences such as microscopic electronics and also witchcraft, brainwashing, propaganda and more. They, with the help of their agents on earth, are responsible for much of the pollution and health problems on earth, as well as some of the social and political problems on earth.

According to the Bible, there exists a fallen angelic being named Satan, who secretly rules the world at this time. The rogue presence is exactly the same idea. Others believe that

the rogues are a kind of disease of our universe. For details, read *The Rogues* at www.drlwilson.com.

THE NEW PARADIGM OF HEALING

1. WHOLE SYSTEM THINKING

The current medical paradigm often views our bodies as a collection of somewhat unrelated parts. Medical specialties are mainly organized around body parts such as lungs or kidneys. This focus is needed for specialized surgery. However, in most other areas of health it misses the many subtle connections that occur in any complex system. This causes unintended consequences, especially with drugs, that increase costs and reduce effectiveness and safety.

The new paradigm always views the body as *one complex, self-regulating, whole system*. Principles of general systems theory play a prominent role in development, though they were originally developed outside of medicine completely. Switching to a whole systems approach is the most difficult aspect of the new paradigm to understand and put into practice for medically trained and even holistically trained physicians and nutritionists.

2. A STRONG FOCUS ON THE NEWER CAUSES OF DISEASE

The present medical system is a holdover from the 20th century. It works best for surgical cases and some infections. However, the old allopathic or diagnose-and-treat system of care either ignores or often worsens the major health challenges of this century. These include:

- *A mineral-deficient and, at times, extremely toxic food supply.* According to the US Department of Agriculture, most food today contains one-fourth to one-tenth the levels of many nutrients as the same food item grown 100 years ago. This is due to the use of hybrid crops, superphosphate fertilizers, pesticides and other modern farming practices.
- *Diets of refined and often chemical-laden foods.* Most Westernized people eat mainly refined foods. These include bleached white flour, white sugar, canned and prepared items.
- *Unhealthy lifestyles and eating habits.* Many Westerners live very unhealthy lifestyles. They stay up late, do not rest enough, do not balance activity and rest, and often have horrendous eating habits as well.
- *Levels of toxic metals and toxic chemicals in the air and water that are up to 1000 times higher than ever before in recorded history.* This is not discussed often on television, but has been well-documented by Dr. Henry Schroeder, MD and others.
- *Dozens of serious viral and other infections that respond poorly to medical drugs.*
- *Levels of ionizing radiation never before seen in recorded history.* This silent problem is extremely detrimental for our health. A major source in some areas is radon gas from the earth. However, the entire planet today is polluted due to atom-bomb tests, nuclear accidents, mining of uranium and other metals, medical and dental x-rays and scans, and the low-level, subtle emissions from nuclear power plants around the world.

Development science is one of the only methods I am aware of that helps with radiation poisoning by 1) restoring vital mineral levels to reduce the absorption of radioactive ones, 2) reducing metals in the body such as uranium, and 3) killing off mutated cells, especially if one uses a red heat lamp sauna daily for several years continuously.

- *Electromagnetic pollution.* The use of cell phones, computers and other electrical devices may cause some health conditions. Reducing air travel and using care to sit as far away as possible from computers, cell phones and portable phones can help minimize this problem.
- *An extremely yin population.* In Chinese medical terminology, this means cool, feminine and expanded. The opposite is yang, which is hard, masculine, hot and contracted. This imbalance is very important today, though it is subtle and not part of the current medical paradigm. The causes for the situation include all of the items listed above.
- *Bioterrorism, which I believe is real, even if it receives little publicity.*

The current drug medical system also creates much more disease for two reasons:

- *Polypharmacy.* This is the indiscriminate prescribing of thousands of prescription and over-the-counter drugs that weaken the body and mind. The trend is driven by relentless and often completely phony drug advertising in all the major media. In 2007, 3.8 billion drug prescriptions were written in America at a cost of \$286.5 billion. This is an increase of 72% just in the past decade.
- *Vaccinations.* Current multiple vaccine protocols are nothing short of insane. Statistics are manipulated to hide the fact that autism, ADD, delayed development and many other problems are directly related to the increase in vaccines over the past 40 years or so.

3. WELLNESS-BASED RATHER THAN DISEASE-BASED

The current allopathic model believes that health is the absence of diagnosable disease. To assess health, tests are run to find diseases. If none are found, a person is generally pronounced healthy. However, this model has some serious flaws because people who are supposedly healthy often suddenly develop cancer, heart disease, strokes and other maladies.

The wellness model of health care states that health is not the absence of a diagnosed illness. Instead, it is an entirely different state of being, with its own qualities and even its own symptoms. For example, a very healthy person might react quite vigorously to someone spraying toxic pesticides next door. Those who are somewhat ill and have much lower vitality often do not have the ability to react as vigorously to such a toxic event.

Wellness may be considered *a state of high resistance to all disease*. This is observed, for example, in wild animals in their natural habits, provided they have enough to eat and are free from too many predators. Dr. Alexis Carrel (1873-1944) was a French surgeon and one of the foremost medical doctors of all time. He won a Nobel Prize for demonstrating that a chicken heart could be kept alive indefinitely by simply removing the waste products from the culture medium, while providing the heart with proper nourishment. In his book, *Man, The Unknown*, Dr. Carrel carefully explained the difference between the old and new health care paradigms. He called the difference *natural health* versus *artificial health*.

Natural health is identical to wellness. In contrast, *artificial health*, he said, is the condition of most “healthy” human beings. People may look well. However, they require the constant assistance of medical exams, tests, procedures, remedies and surgeries because they are prone to hundreds of medical problems. Their “health”, in other words, is false in a way because it depends on the services of an army of doctors. No one, he said, really likes this kind of health. However, it is the only kind most people know and it is all that conventional medicine offers.

Development science easily moves most people from a state of artificial health or outright disease toward a state of high resistance to most all diseases. It does this by focusing heavily on the basic factors of health - diet, the proper drinking water, rest and sleep, other lifestyle factors, nutritional supplements and other simple elements that build health.

4. A THOROUGHLY PREVENTIVE AND PREDICTIVE FOCUS

The present medical system is not primarily interested in prevention or wellness and will never be so. The focus is instead on *diagnosis*. A diagnosis depends on finding a disease entity. If a disease is not developed enough that it shows up on medical tests, little is done for the patient. In addition, most medical prevention is *secondary*, meaning early detection of disease entities. *Primary prevention* is the complete avoidance of disease entities. With the cost and severity of degenerative diseases such as heart disease, cancer, strokes, diabetes and others, early detection is just not a good enough solution, though it is better than nothing.

The new paradigm emphasizes *primary prevention* and starts with a different premise. Instead of focusing on diagnoses, one looks for telltale signs of *stress*. This is much more like preventive maintenance of a bridge, an automobile or an aircraft. To locate the stress at the deepest levels, one must read it in the cellular structure of the body. This is similar to taking samples from the inside of an aircraft engine or inspecting its structure with a microscope, as is done commonly with aircraft, in order to detect subtle problems before they become major ones.

The old paradigm mainly uses blood tests and x-rays for detection of disease. However, subtle stress is not usually apparent in the blood because the blood is buffered. This means that chemical imbalances are moderated and altered in the blood. Dr. Paul Eck used to say that ***blood is maintained at the expense of the tissues***. This means that blood is kept in balance, while the tissues suffer. By the time imbalances are found in the blood, often it is late in the development of a disease process. A properly interpreted hair analysis can identify the beginnings of disease often many years in advance of other methods. The imbalances can then be corrected, completely preventing the development of the disease. Until this model of health care is adopted, I fear that our health costs are going to continue to increase greatly.

5. FIRST DO NO HARM

Even the *Journal of the American Medical Association* published findings recently confirming that post-modern medical care is not only unsafe. It is the third or fourth leading cause of death in America. Other research indicates the situation is even worse. A 93-page review of many studies of the safety of medical care by Gary Null, PhD, Martin Feldman, MD, Debora Rasio, MD, Dorothy Smith, PhD and Carolyn Dean, MD, ND indicates that traditional medicine is the first or second leading cause of disability and death in America. The title of this review is ***Death By Medicine***, published in 2009 by the Life Extension Foundation.

This does not in any way diminish the wonderful responses that can occur with drugs. However, it is important to know that drug medical care is quite dangerous. Development is about the safest method of healing I have seen. Reasons for this are:

- *Focusing on diet, a healthful lifestyle and balancing the body is an extremely safe approach.*
- *The products used are very safe.*
- *The ability to predict and prevent major illnesses adds greatly to safety.*

- *Balancing the mind and emotions adds another layer of safety.*
- *Removing toxic metals to much lower levels than are possible with chelation adds safety.*
- *Toxic metal removal in the body's own order and timing is much safer than the use of drugs or even natural metal chelating agents.*
- *Removing hundreds of toxic chemicals adds more safety.*
- *Nutrients are never forced into the body intravenously and rarely used in megadoses.*
- *Monitoring with regular hair analysis retests add another layer of safety.*
- *Trends or tendencies for 50 or so conditions can be detected and monitored easily, inexpensively and without the need for any invasive procedures.*
- *Development does not require the use of less safe methods including most drugs, most surgeries, most herbs, ionic footbaths, alkaline water, drinking salt water, chelators of all kinds, and most hormone replacement therapy.*

6. AN ABILITY TO CORRECT MANY LATENT OR SUB-CLINICAL HEALTH CONDITIONS AT DEEP LEVELS

Illness develops slowly and insidiously. Often, symptoms only occur in the last stages of diabetes, cancer or heart disease, for example. This is because the body compensates and adapts as it becomes ill. Most symptoms only occur when the body can no longer continue to adapt to its nutritional imbalances, fatigue, and growing toxicity, for example.

The old allopathic paradigm of medical care cannot correct latent or sub-clinical stages of cancer, diabetes, heart disease, arthritis, headaches and most other conditions. Instead, they must usually wait until the patient has symptoms, which is often very late. Development will correct most latent and sub-clinical health conditions, including even emotional imbalances. This is a wonderful benefit, and one that can save billions of dollars as well.

7. LOW COST

Drug-based medical care is insanely expensive. Reasons for this include:

- *A sick population, in large part because the medical system does not really heal people at deep levels.*
- *Toxicity of the drugs, radiation therapy and surgery cause more sickness and disability.*
- *Dangerous methods cause very high legal costs including malpractice and the use of "defensive medicine". This is not medical care at all, but rather the use of tests and procedures just to satisfy lawyers.*
- *A cartel, or small group of organizations, runs the system. Cartels and other monopolies always lead to higher costs and worse outcomes.*
- *Lack of true primary prevention and prediction of illness causes millions of unnecessary cancers, heart attacks and much more.*
- *Government involvement, partly as a result of the failures of the medical system, adds billions to the cost in lobbying fees for government officials at all levels of government. It also breeds corruption, waste and fraud, especially in socialized medical programs such as Medicare and Medicaid.*

The new paradigm uses less costly methods of assessment, much less costly natural products instead of most drugs, removes causes at deep levels, focuses on primary prevention and is generally much safer. This all adds up to much lower costs.

8. AN INTEGRATION OF MIND AND BODY, RATHER THAN SEPARATING THEM

The old paradigm separates disease entities of the mind from those of the body. A different set of professionals specialize in each of them.

The new paradigm recognizes that all nutritional imbalances affect the body and the brain as well. All toxic metals are neurotoxic as well as physically toxic. All infections can affect the brain as well as the body. In addition, the brain is a biochemical organ. Therefore, a reduced level of adaptive energy, high or low blood sugar, and most other stressors affect the brain as much or more than they affect the body.

This new way of thinking about mental illness results in exciting new ways to correct devastating ailments such as autism, ADD, ADHD, anxiety, depression, bipolar disorder and others, often permanently, without drugs and at a very low cost. Chapters 36 to 43 discuss this very large and exciting area of research.

9. FOCUSED ON CREATING BALANCE AND VITALITY, RATHER THAN FOCUSED ON DIAGNOSIS AND SYMPTOM REMOVAL

Balancing the body and increasing its vitality are not spoken of much within the current medical paradigm, and are rarely taught in medical schools. Many holistic practitioners ignore these concepts as well. In addition, the current medical system lacks the tools to measure vitality and balance at deep levels, and they do not have the means to correct them, either.

Dr. Eck spoke often of increasing a person's *adaptive energy* or vitality. Indeed, he considered nutrition to be *the science of human energy*. He meant by this that nutrition is perhaps the most basic and powerful way to increase enzyme activity or enzyme strength in the body. This, in turn, often furthers healing more than any other single factor. Other sciences use the word *vital force* to describe the life force that does all of the healing.

One of the most ancient and excellent ways to measure vitality is to assess the *balance of the body chemistry*. While the concept becomes complex, it is somewhat like the tune or adjustment of a combustion engine. For example, if an auto engine is out of tune, the engine does not produce much horsepower or force. This will happen even if all the parts are in working order.

Assessing the balance of the minerals in the cells is the basis for development science. To my knowledge, it cannot be done nearly as well, if at all, in the blood or urine. These are too subject to fluctuations due to the last meal one had, or how much water one just drank. The hair mineral biopsy, in contrast, gives practitioners a much more definitive view. It works excellently to guide the rebalancing of the body chemistry. When this is done, a person's vitality improves dramatically, and with this, healing begins in earnest.

The concept of *balance* is so critical, in fact, that it is the basis for many religions and philosophies. The Taoists chose the symbol of yin and yang to represent balance. The Hebrews chose two equilateral triangles to symbolize balance. Early Christians adopted the symbol of the two crossed sticks, which also represents balance.

Clarifying balance. Balance is not *a little bit of this and a little bit of that*. Stated differently, it is not *moderation in all things*. Balance in the new paradigm means moderation in all that is adaptive or helpful for life, and total avoidance of that which is not beneficial or adaptive. Thus, balance is first about wisdom and knowledge. Then, and only then, is it about moderation, timing and other qualities.

For example, the US Food and Drug Administration tells us that some toxic chemicals in our food products are okay as long as there are not too many. This is not really “balanced”. It is often just a compromise arrangement with the food refining industry that wishes to save money on their products by using toxic ingredients. They may not kill us outright, but it is not a healthful approach to food regulation. All toxic chemicals in the food supply harm the body and degrade the food.

Another important example is that many parents and teachers tell young people that a little drinking, a little junk food and a little lying are fine as long as these are “balanced” by fairly responsible behavior. The new paradigm is not supportive of this idea. Alcohol is toxic, as are refined sugars, for example. There is no reason to include them in one’s diet at all. Lying ruins many relationships and has no place in the life of a person of high integrity, except perhaps to mislead an attacker, for example, in order to save a life.

10. A FOCUS ON MENTAL ENHANCEMENT/DEVELOPMENT, RATHER THAN ONLY ON SYMPTOM REMOVAL OR “CURE”

In the current medical paradigm, care ends when a person’s disease entity or symptoms go away, or when nothing more can be done for the patient. The new paradigm allows for healing and care to proceed further. For example:

- Dr. Eck found that his work would improve aspects of a person’s awareness and personality.
- Criminals who followed his method for an illness would, in some cases, return to being law-abiding citizens, even though that was not the goal of the program.
- Children’s grades would improve from Cs to As on his program, even though the child was only following the program for the correction of perhaps allergies or an infection.

This has to do with *personality integration* or perhaps Abraham Maslow’s concept of *self-actualization*. It also has to do with *development*, a topic discussed in more detail in Chapters 10, 13 and 40. Development science, especially with the use of a near infrared sauna and coffee enemas on a daily basis, promotes the opening of the vital energy centers of the body, also called the chakras in Sanskrit and Eastern literature. In fact, the process occurs quite naturally using these methods. This is a great hidden benefit, as the process of opening these centers also promotes health and long life. The chakras are small, funnel-shaped vortices of energy that help maintain life and health in the body. Development can help them to grow into large, beautiful centers of high frequency energy that greatly enhance human functioning in many ways. This is the fullest development of a human being and something that is rare on this planet.

Another way that development can assist people is to help them release certain burdens or obligations that involve impaired health. In some circles, these are called karmic burdens because they have to do with old agreements that must be fulfilled. I have observed that as healing occurs at deep levels, some clients appear to be freed from such conditions or burdens.

Development happens automatically today. I have observed with many people that the development of which I speak is not difficult and, in fact, occurs automatically. All that is needed is to use the methods described in this text. These include a simple diet of mainly cooked and selected vegetables eaten in simple combinations, loads of rest and sleep, and either spring water or steam distilled water to drink. Nutritional supplements are needed for a number of years, with most people, but not forever, by any means. The use of a near infrared light sauna daily for at least a few years, daily coffee enemas, if possible, and practicing the Roy Masters meditation daily for a number of years are also most helpful. This is a simple regimen, in terms of both cost and convenience.

THE PARADIGM SHIFT

The New Paradigm of Healing	Conventional Medicine & Much Of Holistic Medical Care As Well
Whole systems behaviors and characteristics are most important.	The focus is most often on individual body organs and systems, rather than the whole human system.
Designed specifically for the illnesses and challenges of the twenty-first century.	The diagnose-and-cure model is designed for 18th and 19th century problems of mainly acute infections and the need for surgery.
Wellness-based. The focus is on the qualities and symptoms of health, rather than upon diagnosing and removing disease entities.	Disease-oriented. Health is often assumed to be the absence of a diagnosable disease entity.
Primary prevention and prediction are most important. This is a principle of “preventive maintenance” used with all complex machinery such as ships, aircraft or automobiles.	Lip service is given to prevention, but it is never the focus. Also, some of the methods used are dangerous, such as vaccination and water fluoridation.
Able to correct latent or sub-clinical conditions at deep levels, often long before they manifest. This is true primary prevention.	Does not correct most sub-clinical and latent conditions. This causes nasty surprises and adds greatly to the cost of medical care.
Very low cost due to an intense focus on primary prevention, use of safe remedies, very low legal costs and low-cost assessment methods.	Costs growing fast because the population is becoming sicker, the remedies are often toxic, high legal costs, high hospital costs and lack of a focus on primary prevention.
The body and mind are always considered together as parts of the whole human system.	The body and mind are almost always treated separately by a different set of doctors. This leads to fragmentation of care and much worse outcomes.
Increasing vitality or adaptive energy is a key to healing. Balancing the body is one way this is done, as in ancient healing systems.	Vitality and adaptive energy are not mentioned and are not assessed. Balancing the body chemistry is only done on a limited basis such as balancing blood sugar.
Full human development or self-actualization is the highest priority after saving one’s life.	The system is mainly disease-oriented. Care usually ends when symptoms improve.

THERAPEUTIC PRINCIPLES

Development science combines many therapeutic principles borrowed from both ancient and modern scientific, physiological and philosophical approaches from around the world. They are all discussed in Chapters 7-14. A few of the most critical ones are:

- **Enhancing adaptive energy or vitality.** As vitality improves, the body can heal ALL types of imbalances and dis-eases.
- **Balancing the body.** This ancient principle greatly improves the body's vitality by reducing stress on the body in very subtle ways. It involves the principle of yin and yang.
- **Seeking to work with the teleology or healing intent of the body.** This has to do with avoiding toxins, stimulants and other methods of healing that in any way interfere with the body's own wisdom. It can be a rather subtle therapeutic principle.
- **Replacing less preferred minerals with more preferred minerals in millions of enzyme binding sites.** This is a very precise, gentle and, at times, slower process to restore enzyme strength and vitality in the body. It is quite different from 'chelating out' toxic metals, for example, or just feeding a person certain foods and nutrient formulas.
- **Combination therapy.** All development programs involve a *combination* of therapies such as a diet, a healthy lifestyle, nutritional supplements and more.
- **A holistic approach.** Development always addresses all levels of a person's being, such as the physical, biochemical, emotional and spiritual. This is not the case with post-modern medical care, which is often quite fragmented and physically focused.
- **Non-toxic therapy.** No drugs or bio-identical hormones are used, unless needed temporarily to maintain life in an emergency.

AN INTRODUCTION TO THE MODALITIES OF DEVELOPMENT

Below are the major parts of a development program. Together they constitute a *complete program*. Note that only a handful of holistic methods are part of a development program. Adding more modalities, in almost all cases, can negate the program! Other modalities such as most herbal methods, chelation therapy, hormone replacement, homeopathy and others are either too yin or somewhat toxic. Modalities used in development are:

1. A healthful lifestyle. Correction of basic living habits is perhaps the single most important recommendation. Most people need much more sleep and rest, and better eating habits. Other aspects of lifestyle are to limit exercise, to avoid toxic exposures and too much sex, and to work on one's attitudes, beliefs, and thinking habits.

2. Specific diet. Following the alkaline mineral cooked vegetable diets for the fast and/or slow oxidizer is probably the most difficult, and a critical part of every development program. Some people object to the strict diet, but eventually our clients realize that the closer they follow the diet, the faster their progress will be.

3. Specific nutrient supplementation. I am often asked if one can heal the body without the supplement program. In almost all cases, the answer is no. Supplements are recommended in a very precise and specific way based on hair analysis readings and rarely based on symptoms. However, when used symptomatically, supplements are always recommended in a way that balances the oxidation rate and the major mineral ratios. This is a most important difference

between this science and most other nutritional approaches. It makes development safer and much more effective, as well.

THE PROCEDURES:

4. Daily coffee enemas. The effects of daily coffee enemas are quite amazing. Numerous clients have reported that coffee enemas “saved my life”. In most adults, they are needed for at least five to ten years to detoxify the liver and for many other purposes. They greatly speed up progress, and in some cases healing will not occur much at all without them.

5. The mental exercise. The ONLY mental training that I recommend at this time is the meditation or concentration exercise as taught by Roy Masters, and as modified to send energy straight down the body from head to feet in a powerful way. Unlike some mental training exercises and even some prayers, this exercise is safe, simple, grounding and non-denominational. While healing will occur without it, it enhances it greatly and is absolutely needed in some cases. Chapter 44 discusses this fascinating science in some detail. More details are available in the article *Meditation For Healing* at www.drlwilson.com.

6. Near infrared sauna therapy. This is another very safe, very powerful and comfortable healing modality that we find most people desperately need. There is something special about the spectrum produced by the reddish heat lamps sold in the hardware stores that cannot be duplicated by a far infrared sauna, for example. With daily use, the lamp sauna greatly reduces the load of toxic metals, chemicals and infections that everyone carries. It also relaxes the autonomic nervous system, assists cardiovascular health, and can drastically improve circulation, oxygenation and hydration. It is truly an amazing healing modality.

7. Daily foot Reflexology. This is another surprisingly safe and powerful therapy that can be done at home. It is described in more detail at www.drlwilson.com and later in this book.

8. Daily Spinal Twist. This simple self-chiropractic method is helpful for most people.

9. Daily ONLY 10-12 ounces of carrot juice, which can alternate with 1-2 ounces of wheat grass juice. Too much juice is not helpful, but a little is excellent for most people.

HOW THIS BOOK IS ORGANIZED

Seven sections discuss the important areas of development science, including:

I. Introduction and the basic modalities in development science.

II. The theory of development science. A large set of ancient and modern medical and scientific principles are the basis for this science.

III. An introduction to the minerals. This covers the sources, functions, detection and assessment of the major minerals in the body.

IV. An introduction to hair mineral analysis and its interpretation by the method of Dr. Paul Eck. Dr. Eck used hair analysis to develop and continuously refine development science. Understanding how to read a hair mineral analysis using his method is essential for success with it. I have added to his knowledge in a few minor areas. To keep his work pure, I have indicated whenever an idea or a mineral pattern was not, to my knowledge, a part of his original work.

V. Physical health conditions and their assessment and correction with development science.

VI. Mental and emotional health conditions and their correction with development science.

VII. Therapeutics, retracing, business, legal and other aspects of development science. This text is not a therapy manual, as that would require a much larger book. However, this section introduces important therapy concepts in development science.

Appendices include a glossary of important terms, a Mineral Reference Guide, two journal articles about development science, information about other healing techniques, references and suggested reading.

NEW TOPICS NOT INCLUDED IN THIS BOOK

Nutritional balancing is a rapidly evolving science of health and healing. Rather than rewrite the entire book for the 2014 second printing, I will instead list below new topics that are the subject of important articles at www.drlwilson.com, the web portal for development science. For a much fuller understanding of development, please read the following newer articles at the website, and others that are written on a weekly basis.

Health Conditions:

Sexual Fluid Craving
Masturbation
The Sexual Order,
How To Be Beautiful
Weight Gain And Loss
Metabolic Syndrome
Cancer And Alternatives
Cellulite, Melasma
Contraception
Marathon Running Kills
Trauma Release, Trauma
Retracing
Genetics, MTHFR
Telomeres
Celiac Disease, Colitis
Morgollons's disease
Pregnancy And Prenatal
Care, The Baby Manual
Superbabies
What The Children Want
Biological Dentistry
Seizures
Entity Attachment
Autonomic N.S. Health

Biochemistry:

Omega-3 Fatty Acids
Trimethylglycine
Methylation

pH Balancing
Electron Transport
Pyroluria, Valence

Foods And Diets:

GAPS Diet
Weston Price Diet
Paleo Diet
Mediterranean Diet
Macrobiotics
The HCG Diet
Kosher Eating
Fermented Foods
Raw Food Diets
Kombucha Tea
50 Reasons For The
Cooked Vegetable Diet
Modern Mineral Starvation
Arrowroot Powder
Sardines
Fasting, Cleansing Diets

Hair

Analysis/Development:

Quantifying The Hair
Analysis Patterns
Retest Patterns
Down Energy
Why Development Is Not
Do-It-Yourself

Breathing For Health
Loosening The Body
Structure
The Spa Morning Routine

Medical System Topics:

Acupuncture Patterns
Chiropractic
Medical Marijuana
Brainwashing And
Hypnosis
Cults And Terror Societies
Reflexology
Dangerous Drugs
Your Doctor's Priorities
The Case Against Medical
Licensing
Essential Oils
Homeopathy

Other:

Rape, Healing Rape
Homosexual Marriage
Victimhood & How To
Stop It
Justice, Equal Or Social
Psychotronic Warfare
Prayer, Meditation
Healing For Dogs
Energy Vampirism

2. THE HEALING LIFESTYLE

Shawna (age 3), Alexa (age 4), and Rachel (age 10) received the finest of orthodox as well as holistic health care, since their father is a wonderful holistic medical doctor. However, all the children had migraines that were responding poorly to many types of treatment.

Hair mineral analyses on all three revealed very slow oxidation and extreme copper toxicity. The oldest had a copper level of 44 mg%, or about 18 times normal. All three were placed on a slow oxidizer diet. Also, they each took several nutritional supplements to balance their body chemistries. On the first retests, Shawna's copper level almost doubled. This indicates an increased rate of elimination of copper through the hair. As their copper levels decreased, all three children's headaches went away, as did several other problems including recurrent infections and fatigue.

An extremely healthful lifestyle is the most basic healing modality in development science. Lifestyle, by its nature, is entirely a whole systems aspect of health. For example, sleep affects every aspect of human functioning, as do activity and eating habits.

SLEEP AND REST

The single most important aspect of balancing the lifestyle is resting more. Rest and sleep are critical activities. They are times for regeneration, healing and development of the mind and body. Rest and sleep are never a waste of time, even though a few people use them as escapes. Even this is far better than most other escapes such as drinking alcohol, smoking or even staying up watching television or spending too much time with friends.

Sleep at least 8 or more hours every single day. If you require an extra hour to fall asleep, then go to bed an hour earlier to be sure you sleep eight full hours. Many people have a "sleep deficit". This means even more sleep is needed for a while until the body rests enough.

Go to bed each day ideally between 8 and 9 PM. The hours before midnight are much more restful for most people. The reasons for this are complex. The natural sleep cycle is from sundown to sunup, so going to bed very early and rising early are often helpful for one's health.

Napping is excellent and often necessary while healing yourself. When possible, plan your day so you can nap for an hour in the afternoon or another time. This can often be arranged if one plans carefully. For example, during your lunch break, eat first and then rest for 15 minutes when possible. If there is no bed or couch, you may be able to sit comfortably in a car for 15 minutes and take a short snooze. At one of my jobs, a man sitting near me ate his lunch at his desk, then put his head against the high back of his chair and took a 15-minute nap.

When driving, if you feel tired, try to stop your car safely off the road, lock the doors, roll up the windows and nap for 15 to 30 minutes. You will often wake up refreshed and have a much safer trip as well. Even if you don't sleep, just resting and closing your eyes are excellent.

While healing, expect to be more tired at times. The body may be restoring an organ or gland, perhaps, or making some other shift in the body. *Please honor this call for rest as best you can. If possible, anticipate and look forward to these times of fatigue, as they indicate healing in progress. Plan to rest more when beginning a development program.*

DRINKING WATER

The correct type and amount of water for drinking can be a critical factor in healing. This is usually overlooked by most doctors, I find, or their advice is not correct.

Most adults need 2- 3 quarts of preferably good quality spring water daily. Three quarts is about three liters, 108 ounces or about 12 medium-sized glasses daily. Children need less, depending on their size.

Somewhat like a whole food, natural spring water seems to have certain properties that are missing from “processed” waters of all kinds. These are likely subtle physics properties such as spin, moment, valence and others that become damaged by processing. For this reason, mainly, spring water seems to be the best overall drinking water for most people. While Evian water is good, European spring waters are generally not as good as American, Canadian or some Asian brands of spring water.

Carbon-only filtered tap water. A second-best drinking water, surprisingly, is often carbon-filtered only municipal tap water. This is not as pure, but it seems to work better than many other types of water. For example, multi-stage filters can remove many more contaminants from tap water than a simple carbon or sand filter, but they seem to damage the ability of the water to properly hydrate the body. If you must use tap water, change the filters every few months. A carbon block filter is better than a simple carbon filter, though either will work.

Reverse osmosis (RO) and deionized water. RO water, often called “drinking water” or “purified water” in the markets, is mineral-free and therefore very yin. Also, passing the water over a plastic membrane appears to negatively affect certain properties of the water. As a result, it does not hydrate the body nearly as well, in my view. *Please avoid it.* Deionized water is treated electrically to remove even more minerals. It is also not recommended.

Well water is extremely variable and often toxic today. I find many problems with those who drink their supposedly clean well water. Most is not good for drinking, even if it is “approved” by local authorities. Artesian well water is often better.

Alkaline water. Naturally alkaline spring water is fine. Machine-made alkaline water is not recommended. Very alkaline water (pH of 8.5 or higher) is too yin, no matter what other benefits it has. Also, the alkaline water machines often add a little platinum to the water, which is toxic. Some alkalines water machines also add coral calcium to the water, adding some toxic metals. Toxicity develops slowly and insidiously. It is far better to alkalinize the body using a diet high in steamed vegetables, along with targeted supplements and lifestyle modifications as discussed in this volume. Letting go of anger and resentment also helps the body become more alkaline. Never drink alkaline water for more than a few weeks.

Designer waters. These are bottled products sold in supermarkets and health food outlets. Most begin as tap water, as this is cheaper. They are usually filtered by reverse osmosis,

which is not good at all. Then the water is altered, declustered, prayed over or placed in electronic machines to supposedly improve it. So far, I have not found any that are worth the extra money or are better than a good quality spring water.

Adding minerals to your water. I find that this does not work well. Most of the mineral solutions are not the correct balance of minerals, and some contain toxic metals.

Drinking salt water. Please do not drink salt water, as some recommend today. This is a slightly toxic habit that subtly unbalances the minerals in the body.

Plastic containers. Some people do not like spring water because it comes in plastic jugs. However, the chemicals in the plastic do not appear to be a serious problem, in my experience. Spring water can often be delivered, to avoid the problem of new plastic containers.

Do not drink water with meals. It dilutes the digestive juices. Wait at least an hour after meals to drink water, and stop drinking 10 minutes before eating your meal. A simple way to drink more water is to have up to 6 or even more glasses in the morning upon arising. This will also usually cure constipation, especially if you warm the water before drinking it.

In hot or dry climates, or while traveling on airplanes, drink more water. If you talk a lot or sweat heavily, you probably also need to drink more.

During some healing reactions that involve toxin elimination, drinking more or drinking some distilled water for a few days to a week, perhaps, can help release toxins faster and provide symptomatic relief. Distilled water is otherwise not recommended, as it is mineral-deficient water and thus very yin in Chinese medical terminology.

Water substitutes. The only substitutes for plain water are mild herbal teas such as chamomile, mint, strawberry and others. One cup of coffee or up to two cups of green or black tea daily are fine, but more than this is not good and no substitute for fresh water. You may enjoy water more by heating it and drinking tea, but do not put ice in it, as the cold temperature is quite hard on the stomach. This bad habit is almost universal in restaurants, often to help disguise the foul smell and taste of their tap water. A simple carbon filter would serve the customers much better.

Dehydration. Using any caffeine or alcohol tends to dehydrate the body. Eating any sugars or sweets, including fruit or fruit juices, also tends to dehydrate the body. All of these substances have a diuretic action. This is why water only must be your main beverage.

Ozonating your water. This is an excellent idea, if desired. It will enhance most drinking water. Simply place a tube in a jug of water and bubble ozone through it. It must be consumed quickly, however. It loses its potency in a few minutes as the ozone bubbles out. Ozone generators are sold through the internet.

To summarize, drinking water is a very important aspect of development science. Begin each day by drinking as close to one quart as possible of spring water or carbon-only filtered tap water. Many people either do not drink enough water, or they drink an improper type of water. Still others dehydrate the body by consuming caffeine, alcohol or sugars, including fruit. For much more on the important subject of water, see **Water For Drinking** at www.drlwilson.com.

EATING HABITS

Eat at least three regular meals every day. However, one may eat four or five smaller meals to obtain enough cooked vegetables and some animal protein daily, and to help maintain a healthy blood sugar. More frequent and smaller meals also help reduce stress on the adrenal

glands. Have sit-down meals, even if they are light, simple meals. Do not snack all day while working, driving or standing around. Also, rest at least several minutes before and after eating. Skipping meals for any reason leads to poorer overall nutrition, stresses the adrenals and usually does not enhance weight loss. To lose weight, eat more vegetables and eat less starches of all kinds, including fewer starchy vegetables such as sweet potatoes.

Eat slowly and chew each mouthful at least five or more times. Chewing 15 to 20 times is actually wonderful for one's health. An old saying is "Drink your food and eat your beverages". Though a bit of an exaggeration, the principle is excellent. It means to chew your food until it is a liquid and to sip your beverages slowly, almost like eating, instead of guzzling them. This applies most to animal milks, which really are concentrated foods to a large degree. It applies less to water or tea, though the principle is not a bad one. If you wish to lose weight, thorough chewing will lead to eating less food and some quick weight loss in many instances.

Eat quiet meals sitting down. Resist the temptation to bolt your food, eat on the run or eat standing in front of the refrigerator or at a counter. Find a peaceful, quiet place to eat. Try to avoid noisy environments such as crowded bars with televisions blaring or noisy music. Also avoid eating while driving or at your desk talking on the telephone. Quiet music or even quiet television is fine at mealtime if it helps you relax.

For children. Quiet music at mealtime may help children calm down. Television is usually not good. Help children to relax at meals by avoiding any loud conversation or harsh discipline while dining. However, it is important to insist upon decorum at meals. Send a child to his bedroom if he is making the meal miserable for everyone.

Meals should be enjoyable social times of conversation and togetherness. Do not let soccer practice or other activities take precedence over family meals. Restructure mealtime or skip the lessons at this time of day. Making meals special by lighting a candle, dimming the lights, saying grace and other methods can also help set the tone for peaceful, enjoyable meals.

HAND AND FOOT REFLEXOLOGY

This ancient method of acupressure balances the energy in the acupuncture meridians. It is simple, safe and often surprisingly helpful to relax the body, reduce aches and pains, and more.

Cranial adjustment. I am told and have experienced that a particular reflexology technique adjusts the cranial system enough to promote aspects of mental and spiritual development. For best results, do this once daily, spending at least 5 minutes on each foot.

First rub the entire foot lightly, rubbing more on any spots that are painful or tender. This will often cause the pain or tenderness to diminish. Then move to the third and then the fourth toes. Hold one of these toes firmly and twist it gently as far as you can in one direction. Hold this twist for at least 10 seconds. Then twist the toe in the other direction, again holding it for at least 10 seconds. At the same time, or afterwards, if you prefer, look for tender spots on these particular toes and rub them firmly. Then repeat the same thing on the other foot. Using the hands is possible if you cannot do the feet, but it is perhaps less effective.

AVOIDING TOXIC EXPOSURES

A healthy lifestyle means moderation in all *good* things, and avoidance, if possible, of all that is toxic. Poisons are poisons. They are rarely ever helpful or needed.

Medical and dental toxins. Facts I have learned as a clinician for almost 30 years are:

- *Amalgam dental fillings.* Also called silver fillings, these are about half mercury and may contain copper, cadmium and other toxic metals. Have these removed as soon as possible, unless you have active cancer. If you have cancer, wait until it is thoroughly stabilized before doing amalgam removal. The vapors released during amalgam removal can kill a cancer patient. Other dental toxins that are less common are nickel crowns and some dental wires and appliances made of toxic compounds.
- *Prescription drugs.* Most are not that safe or even that effective in the long term. Use only as needed. This includes bio-identical hormones and many herbal therapies, unfortunately. Many have side effects that are not listed on any label. Even very good doctors are often unaware of side effects, especially combinations of drugs.
- *Newer drugs may be even worse.* Their long-term effects have not been researched as well. Therefore, look for natural alternatives if you are told you need drugs such as antibiotics, natural hormones, cholesterol-lowering drugs, especially statins, and most others. Type in *Beer's List* on your internet search engine for an updated list of the most toxic drugs,.
- *Drugs and development.* Most drugs interfere with and may even stop mental development.
- *Over-the-counter or OTC drugs* are often as bad or worse than prescription drugs, especially if used daily. Especially avoid steroid creams, cortisone-containing nasal sprays, contact lens solution with mercury, and daily use of pain killers and anti-inflammatories. These include Aspirin, Tylenol, Aleve, Excedrin, Anacin, ibuprofen and dozens of other brands. Heavy advertising fools people into thinking they are safe when used daily, which is not true.
- *All vaccines can be highly toxic* and, in my view, are unnecessary and to be avoided. Childhood illnesses, including diphtheria and others, can be handled naturally without a problem in almost all cases. The risks of the vaccines are much worse than any possible benefit most vaccines provide. An excellent resource is a DVD by Mary Tocco available at www.marytocco.com. Another excellent website is www.vaclib.org.
- *Surgery.* Surgery is great, when needed, but causes toxicity due to anesthesia and many other drugs used with it. Before surgery, taking zinc, and vitamins C and E may reduce problems.
- *Medical dyes or contrast media.* Avoid these whenever possible. They occasionally cause kidney or liver failure in a sensitive person.
- *Blood transfusions are horrible today.* Most blood is contaminated with infections and cannot be cleaned up. Blood products can be used that are not whole blood, however.
- *Visiting the hospital.* Even spending time in hospitals visiting the sick is not particularly safe. Wash your hands often after such experiences and minimize them.
- *Other medical dangers* include all x-rays unless absolutely needed, angiograms, liver biopsies, spinal taps, radioactive iodine treatments and all radiation therapy. MRIs and PET scans are better, but still disrupt the body's energy field and should be minimized.
- *Remove leaking breast implants and unneeded pins and other metallic objects from the body.*

Contact and airborne toxins. This is another major area of toxicity today:

- *If possible, reside and work in clean, safe, comfortable and natural surroundings.*
- *Live in a house rather than a condominium or apartment, if possible, to reduce stray electromagnetic pollution and noise.*
- *Try not to work under fluorescent lights all day, though they are often mandatory at many jobs.* In this case, adding a small lamp that is full-spectrum at your desk may help.

- *Try not to handle metals or chemicals any more than necessary.* Wear gloves and wash your hands frequently if your job requires handling toxic materials.
- *Ventilate your home or work area as much as possible so you can breathe pure air.*
- *Stay out of new cars, new houses and away from new building materials unless they are non-toxic or low toxicity.* Toxic home materials include new carpets, drapes, plastic or fiberboard items, and even clothes made of synthetic fabrics. Pure silk, wool, cotton or hemp are best for clothing. Also, use only all-natural or non-toxic cosmetics, cleaning products and skin care products. If you are not sure about cosmetics, which are often loaded with toxins, go to **www.cosmeticsdatabase.com**. They review over 25,000 products.
- *Lawn and garden pesticides and other chemicals are among the most toxic people handle.*
- *Occupations that are quite toxic include all the building trades, mechanics and a few others.*

Sunbathing. A little sun is good for most people. Sit or lie outside for about half an hour in the middle of the day or preferably up to one hour in the early morning or very late afternoon. More sun than this is not healthful. The sun will not provide enough vitamin D3 today, so everyone needs to take it, even sun worshipers. If you must be outdoors all day, use a natural sun screen with a high SPF. However, most are a little toxic so use them only if needed.

PERSONAL HABITS

Personal habits have a powerful impact on one's health, though it is subtle in some cases. They include how one dresses and speaks, the friends one keeps, and how one acts in social, sexual, intellectual and other situations. These define who you believe you are in many important ways and influence where you live, work, play and much more.

Dress modestly and always keep warm. Wear socks, long sleeve shirts, slacks, long dresses, and sweaters if needed to stay warm at all times. Feeling chilly intensely stimulates the sympathetic nervous system and slows or stops healing. Dressing too lightly is more common among fashion-conscious women and young people, but affects everyone at times.

The company you keep. Always treat the self - body, mind and spirit - as the temple of the living God. This means to always comport yourself with poise and dignity. The current culture does not encourage this, so it may mean bucking the trends and the fashions. It does not mean being aloof or 'stuck-up'. It means that basic decency and respect for yourself and others are always in order.

A difficult situation, for example, are co-ed college dorms in which young women share bathrooms with young men who are so hormone-driven they really are not aware of the effects of their actions on the women. This is one reason why a longer courtship period and traditional marriage is still a wise choice for many women and men, even if it ends unhappily. Alternatives are being developed, but are not well-developed for the most part. Such alternatives must involve detailed legal contracts that share some of the clauses of the marriage vows for them to work well.

People to beware of. Watch out for work associates and so-called "friends" who act selfishly or think it is okay to lie. If possible, avoid them completely. They are not really friends in most cases, and will often lie to you as well. Also avoid parties, bars, restaurants and cocktail lounges where it is easy to slip a drug into a drink or even into your food. A wonderful habit to establish is to learn to enjoy your own company, and perhaps curl up with a book or listen to peaceful, quiet music. This can help avoid being drawn into toxic social settings.

Also, be careful about inviting people into your life because they seem to offer you love, success or fun of some kind. Many will not likely bring real positive energy into your life. This sounds harsh, but anyone reading this book is way ahead of the norm in terms of awareness, and therefore needs to be even more discerning. Spend time around those with very high moral standards. They may seem boring, perhaps, but they are far ahead in the spiritual realm and their health will usually reflect this as well. Balance, in this case, does not mean a little of the good and a little of the bad. It means exercising wisdom at all times.

WORK AND RECREATION HABITS

Relax and take breaks. Keep a relaxed pace, even at work and in other activities you adore. If you sit at a desk, stand up every 20-40 minutes, move around, stretch gently and breathe deeply. Watch how cats and dogs stretch often and gently. This is not the same as vigorous stretching, which can easily cause slightly torn ligaments.

Computer issues. All computer screens and other parts of the machine give off harmful electromagnetic fields or EMFs. Sit as far away from computers as possible. Enlarge the typeface so you can sit further away. Use a remote keyboard with a laptop computer so you can sit further away. This is quite important if you use a computer for any length of time. Stand away from your computer at least hourly and more often, if possible. When you get up, ideally go outside in the sun for a few minutes, or at least leave the room and walk around. The sunshine will actually negate some of the harmful computer EMFs.

If possible, run a ground wire from the middle screw on an electrical outlet or other ground terminal to your body. An ordinary lamp cord will do. You can just tuck the end into your sock, for instance, to make contact with the body. This actually helps some people a lot to reduce the effects of some computer EMFs. A single reddish, 250-watt heat lamp from the hardware store shining partly on you may also reduce the effects of electronic devices on the body. This is an infrared bulb, but they are usually just labeled as a heat lamp. It is the same lamp recommended for saunas. Also, if you have difficulty sleeping, stay off the computer and away from other EMFs at least two hours before bed. Many gadgets are sold to reduce electromagnetic stress. Some work better than others. None seem to reduce it completely, however, so take precautions.

Televisions and cell phones. Sit back from all televisions. So-called 'backlit' large-screen TVs emit the least harmful EMFs. Spend as little time as possible on cell phones and portable phones, and try to use a headset or a speakerphone to keep the rays away from your head. Phone calls of up to five minutes should be okay. The best headsets are those that conduct the sound through a hollow tube, rather than with wires. Some devices may reduce EMFs from cell phones, but I have not found any that work completely. If they did, there would likely be no signal emitted from the device. If you cannot use a headset on your phone, a Bluetooth device is better than nothing, by far. Just carrying a cell phone should not be a problem.

Where to live and work. Rural areas are often healthiest due to a higher oxygen level, less noise, reduced electromagnetic stress and, at times, safer neighborhoods. Wherever you live, note if you are near cell phone towers or a major power generating station, as these emit powerful negative electromagnetic fields. Locating cell phone towers is often next to impossible, as they can be disguised as trees, posts and other common objects. The best way is to buy a simple electromagnetic field meter or detector that costs less than \$100.00. This is an investment I would make if I were buying a house, especially in a city environment. Walk

around the neighborhood with it and check your indoor environment periodically. If you drive around, note that your car also emits EMFs and may skew the readings.

POSTURE

Poor posture interferes with breathing, digestion, spinal and hip alignment, and even contributes to depression in some cases. Many health authorities advise a stiff “military posture”. This is not helpful. Here is a simple way to visualize an excellent posture:

- *Imagine a wire tied or screwed into the crown of your head.* The crown of the head is not the middle of the skull, but instead nearer the back of the head. Try to feel this place on your head with a finger, so you are clear where it is. Ask someone for help if you are not sure.
- *Now imagine you are suspended from this wire.* If the spot is correct, when you lift your head by this point, your face will be vertical and the head will be perfectly level, not tilting forward or backward.
- *Now imagine the entire body hanging loosely from the wire attached to the crown of the head, like a rag puppet.* Your shoulders, for example, will sag a little, but will not be too rounded. Your arms will hang limp and will swing freely when you walk. Practice walking around the house like this as often as possible. Visualize this often while walking or even while sitting. It may seem odd at first. However, with a little practice it will help remind you how to sit or stand in a relaxed, healthful posture.

HABITS OF THOUGHT

Thoughts directly affect the body far more than one may imagine. Here are a few basic principles of correct thinking.

1. The Ten Commandments and the golden rule are still valid today. These may be out of fashion, but they are very true nevertheless. They are a good guide to basic behavior and thinking. The golden rule is so named because it works beautifully in many situations.

2. Take full responsibility for your life, rather than play the victim. Victims, by definition, are powerless and out of control of their lives. They have handed over their power to others. Most victims are angry and resentful. In addition, victims are usually unforgiving. Sooner or later, this combination of feelings and attitudes always causes physical and mental illness. It is a very important principle.

In contrast, taking responsibility for everything in your life empowers you. If a problem develops, you may have helped create it and you can definitely help solve it. It may take a while to explore your new choices, but you have the ability to make them. Also, as a fully empowered being, you have the power to forgive and move on, so letting go of anger and resentment are much easier.

When victim feelings arise, which they will, it is easy to say, “but I can’t help the way I feel”. A principle is that you can and do control your thoughts and feelings. However, it often takes catching yourself in victim thinking many times to remove this weed from your mental garden. Anything that helps remind you not to play the victim is helpful such as books, films and other methods. Set your intention clearly and you will slowly climb out of the victim error.

3. Think wholesomely. This means to watch your lower impulses at all times. These include anger, rage, lust, greed, selfishness, desire to control others or the idea that others are here to serve you. The lower impulses or desires have plagued humanity forever and are discussed in all the major religions and philosophies. They are ‘natural’, but not helpful in the slightest. They must be controlled in some way, whether by laws, morality, fear of punishment or other methods.

In some circles today, controlling your emotions and thoughts is considered repression or “not expressing who you really are”. This, I maintain, is always a lie. We live at many levels. We choose our altitude, so to speak, by our attitudes. Everyone, without exception, has lower impulses and ambitions. These are always unhelpful and always cause physical or mental illnesses of every kind imaginable.

To help overcome unwholesome thoughts and feelings, substitute more wholesome ones. Also, gently let go of friends and even work situations that expose you to those who are coarse, angry, negative, selfish or engage in unwholesome behaviors. Plenty of people are seeking a pure, wholesome life and one can substitute new friends for the old ones.

4. Think in a positive direction. This means to look on the bright side of things, as much as possible. It does not mean to ignore the obvious or to believe things will work out when all the facts argue against it. It just means to avoid inferring and implying negative outcomes when you really don’t know the truth. Those who tend to think all is black are not really seeing the hand of the creator in their lives, generally, or they are depressed or ill in some way.

To help think in a positive direction, looking at things from a spiritual perspective is helpful, though not needed in some cases. Those who only think physically, for example, will eventually become depressed because all material things fall apart eventually, from the body to the house, and so on. This is tricky, because one wants to be realistic, and yet not negative. Material thinking often seems more realistic, but it is not necessarily the case.

Miracles do happen if one can allow them into one’s thoughts. Appearances are not at all the same as reality. For example, the recent worldwide recession has affected many, but the effects are not all negative, though you will rarely hear about the positive effects on the news. People have slowed down and are saving more money. They are spending more time with family and less time traveling aimlessly, for example.

Another way to assist in thinking positively is to cultivate friends and colleagues who tend to be happy and more upbeat. Let go of the naysayers in your life if you can. If it is a partner or a child, work with them on this issue. To clear deeper causes of negativity, I highly recommend the Roy Masters observation exercise each and every day. It can help anyone sort out facts from false perceptions. This brings about an honest positivity after a while.

Thinking positively does not mean that everything that comes out of your mouth must sound lovely. You can learn to speak the truth clearly and as objectively as possible, though it may sound negative. If someone is not telling the truth, there is no point in keeping silent or faking your feelings. Speaking the truth is never negative; it is simply the truth.

Thinking positively is also not “positive thinking”. This style is very popular in some circles. Everything is presumed to be positive, no matter what it is. If a war breaks out, these people say it is for the best. This is usually pure speculation, which is dangerous and often a denial of reality. If a war breaks out, it is fine to say “I don’t know why this is happening, but I hope and pray that it is over soon”. In other words, do not waste your energy trying to turn everything that happens into something positive.

5. Let go of grudges and resentments. Holding on to grudges and negative thoughts toward others is associated with chronic degenerative diseases such as diabetes, cancer, heart disease and many others. Learn to let go and forgive, even if it hurts and you feel terribly alone or cheated by life. Many methods can help you let go of resentments. The most important is to commit to forgive “seventy times seven times”, as the bible recommends. Make it a major principle in your life. Catch yourself if you ever wish harm on anyone. Catch yourself when you think or say negative things about anyone. The Roy Masters meditation is most helpful at times to dig up hidden resentments that often control us.

Letting go of grudges and resentments does not mean to ignore the lessons learned, and it does not mean to give people a second chance. This behavior can be dangerous, as some women know. Forgiving just means moving on and letting others go their way in peace, and that is all.

6. Cultivate gratitude. Gratitude is one of the healthiest attitudes. It is the recognition that all of life is a gift, even seemingly adverse circumstances. Therefore, you can be grateful for whatever comes your way. It is really a very simple idea.

Gratitude is not about making up “positive” reasons for difficult situations. For example, one might rationalize that cancer arose so one can learn to eat better. That is purely rationalization and is not really gratitude. It is fake, in that one feels bad and is trying to make the best of a bad situation. A gracious attitude about a cancer might be, “I don’t know why the cancer arose in the body, but I am grateful for the years and the love I have had on this earth so far. Perhaps I can overcome this condition and live even longer to receive even more of life”.

This perspective will help you through health challenges more than any other. If you cannot see or feel gratitude to this extent, make a list of at least five people, places or things for which you are grateful each night before retiring. Review the list often. Practicing gratitude as much as possible can cause more healing of the liver, in particular, than most other therapies.

7. Think in a broad-minded way as much as possible. Most people think in surprisingly narrow-minded ways. This is new for America, which formerly was known as a very open-minded place. This appears to be changing as people’s health declines and as the level of freedom declines. Freedom means giving freedom to others as well, so when general freedom declines, many people become narrow-minded in regard to others as well.

To help think in a broad-minded way, one must hear and read both or many sides of an issue. Also, never become a one-issue person. Life is complex and most issues are not all black and white. Also, do not believe the mainstream media. They can be quite biased, especially NBC, ABC, CBS and National Public Radio. Become a detective in everything.

EXERCISE

Mild and gentle exercise is the only type recommended while on a development program. Exercise only to flex and tone the body, and little else. This is difficult for some doctors and laymen to embrace. Reasons for limiting all activities include:

- *Dr. Eck found that most people are exhausted.* This is evident on most hair mineral analyses.
- *Exercise most often acts as a stimulant that only makes one feel better temporarily.* It can easily become an addiction.
- *Exercise uses up vital nutrients, and stresses the adrenal and thyroid glands.*

- *Many have structural or chiropractic imbalances that become worse with too much exercise.*
- *Sauna therapy provides many of the benefits of exercise and more.* These include enhancing oxygenation and circulation, relaxing the nervous system and gently massaging the internal organs. Sauna therapy offers many of these, and more, without the negative effects above.

Weight loss and exercise. Contrary to popular teaching, *on a development program weight loss will occur faster and more easily without much exercise.* We have proven this over and over again with many overweight people who are willing to just follow the program and walk 10-20 minutes several times a week.

Walking is usually best. Depending on your age and health conditions, 10-30 minutes of gentle walking or gentle bicycling several times a week is plenty of exercise. Suggested alternatives are 15 minutes of gentle rebounding on a mini-trampoline, gentle weight lifting or gentle sports such as golf, croquet and others. Other types of exercise are not generally better than these. See below for cautions about other types of exercises.

How to walk properly. The following will turn your daily walk into a fabulous therapy:

- *With each step, send your energy forcibly downward into the earth.* You may wish to imagine you have weights on your legs, or a giant magnet pulls each foot in turn deep into the planet. Some people imagine they have suction cups on the bottoms of their feet that they compress with each step. You might simply imagine the earth is soft and you are sinking in.
- *Point your toes slightly inward. This will help keep your spine aligned.*
- *Be sure to stand tall and relaxed, as described in the posture section.*

Building strength. It is not necessary to become extremely fit or buff beyond what you need for your daily activities. However, if you desire to build strength, do not work out hard and often. New research shows this is not necessary or even helpful. Instead, read *The Slow Burn Fitness Revolution* by Frederick Hahn, Michael Eades, MD and Mary Dan Eades, MD. This book can help you to be stronger with just one one-hour workout every five to seven days.

Exercise hazards. Warning: For those who want to lose weight, the common practice of combining heavy exercise with little food is a prescription for total breakdown of the body. General cautions include to avoid overdoing or pushing yourself to exhaustion. This is never helpful, and will slow or stop your healing process. Avoid aerobics and all vigorous workouts, simply because it is almost impossible to tell when you have done enough due to the fast-paced music and peer pressure to keep on going. Be very careful with this, especially those with an unbalanced body chemistry. Avoid all fitness coaches, for example, that continually try to help one increase one's workouts. This is not helpful in the slightest.

Swimming: Only swim in clean lakes, rivers, ponds or oceans away from boat traffic and other hazards. Avoid most swimming pools, except perhaps a private pool of your own. Even here, chlorine and bromine are toxic chemicals used in most pools. Municipal water also usually contains aluminum, copper, toxic chemicals and pharmaceutical residues. A salt water pool is a little healthier in some cases. You can add hydrogen peroxide to a pool or hot tub and it will help sanitize it a little.

Hot tubs. These are far worse than swimming pools. Especially avoid public hot tubs at health clubs, hotels, etc. The hot water is a great incubator for infections. Chlorine, bromine, silver cartridges and other methods cannot kill them all, no matter how clean the water appears.

Also, you will absorb chemicals from the water in all hot tubs, even those sanitized with hydrogen peroxide. Instructions how to use peroxide in your hot tub are on the internet. If possible, have a hot bath instead of using a hot tub, as this is far cleaner. Also be careful with jacuzzi or whirlpool bathtubs, as bacteria build up in the pipes inside the tub.

Hot springs. A safer alternative is to visit a clean hot spring. The water must flow continuously. Some hot springs are more healthful than others. **Avoid** extreme temperatures and be careful if the water is smelly or cloudy, as it may not be healthful. **Also avoid** taking any type of bath more than twice per week because too much exposure to water makes the body too yin.

Special cautions with yoga and tai chi: Yoga, in particular, tends to move energy through the body in improper directions. For this reason, we do not recommend it. Also, subtle injuries are very common in yoga and tai-chi classes, especially if the teacher does not walk around during the entire class making sure everyone is doing the poses and the forms correctly.

A BALANCED LIFESTYLE

Lifestyle is more than just a list of habits to cultivate and those to avoid. It is also about the balance of the healthful items in your life. Here are examples of how to make this balance:

- *People matter.* Thinking about others and their needs is a key to a balanced lifestyle.
- *Thinking about the past and the future.* Without enough thought about the past, you are liable to make the same mistakes over again. Without enough future orientation, you are liable to become depressed and discouraged.
- *Thinking positively and negatively.* Some people are too grounded or negative, while others are upbeat too often, usually because they are out of touch and in denial.
- *Starting and finishing projects.* Starters need to learn to complete what they begin. Finishers must initiate more or little gets done without someone else prodding you all the time.
- *Social time and alone time.* This varies for each person. However, too much socializing and travel is wearing. Too much alone time could be harmful if one misses out on opportunities.
- *Balancing your moods.* This is a more subtle area. All of us go through anger, fear, guilt and other emotions at times. If we can balance these, we will generally stay much healthier than if we dwell on or stay in one mood most of the time. The latter is called neurosis and even psychosis, as it represents a fixation of sorts and not a state of balance.
- *Healthful activity must be balanced with adequate rest.*
- *Work needs to be balanced with caring for the body and with time for rest and relaxation.*
- *Loving the self and loving others.* It is important to balance your own need for rest, proper nutrition and every other aspect of a development program, and the needs of those around you. Self love is essential for success with this program and for all healing, in fact.

Making a healthy balance in these ways will avoid many mistakes that most people make that lead to all kinds of illness, depression and other types of problems.

SEXUAL ACTIVITY

This area is critical today, mainly due to the extreme prevalence of STDs. The consequences of a single slip can last for years, or even a lifetime. Unfortunately, the women often end up with the babies, the birth defects, the guilt, the shame and tied to men whom they

really don't need in their lives. Also, sex affects women emotionally much more than it affects most men, a fact that most do not realize. For all these reasons, women must be the ones to take the most precautions. Never assume your partner is free of STDs or telling the truth about sexual matters. It is often not hormonally normal to be totally honest in this area for either men or women. A longer article on this subject is available at www.drlwilson.com. The following will help keep you safe:

- *Do not marry or even date anyone who does not share your moral values.* If you are not sure of your morals, start thinking about them now. Read the Ten Commandments of the bible, read other books, talk to the most responsible and loving adults you can find, and figure out your values. Values are real, and may determine your future as much as any other factor.
- *Avoid all social situations and substances that compromise your mental acuity.* This means no alcohol, no drugs and no hanging out at bars, cocktail lounges and crowded places like discos, concerts, and even most sports events, if possible. Try not share an apartment or dorm room or even dorm floor with the opposite sex, even a "friend". It is just not wise. It is not the same as sharing with another person of the same sex.
- *Women should test their suitors.* This means women should spend time with men who are not swayed by body parts, sexual jokes, sexy clothes and the like. Men, there is nothing wrong with testing your ladies the same way. These days, plenty of young women are promiscuous and not worth the trouble for a man who wants to live healthfully and happily.
- *STDs.* These are everywhere, especially among "aggressive" and "social" young men and women. Do not underestimate this. They are not "benign" infections, as many doctors tell you. They weaken the body, especially those of women, and they can cause infertility and other diseases including cancer.
- *Refuse Gardasil and other vaccines against STDs.* These are not very helpful and have killed or maimed thousands of young people.
- *Rules to avoid STDs.* No kissing on the mouth and no lying in bed with boys, even to watch television or a movie, or to look at photos on a computer. A wandering hand can get a lady all heated up and next thing she knows has had sex with someone with no protection at all.
- *Sex is not love.* Sex can be part of a loving relationship in marriage, but love is not about sex at all. Older people know this is the absolute truth.
- *Sex is not a "need".* It is a hormonal drive to reproduce that is glamorized and over-rated by the media, and used by advertisers and others to sell every imaginable type of product.
- *Sex and hatred.* For women, particularly, sex is an emotional involvement that often causes severe hatred of men later when the relationship doesn't work out. Girls and women must understand this well or they all tend to fall into the same trap of thinking men "love" them when it is mostly sexual interest driven by hormones that the men do not understand at all.
- *Wait for marriage for sex.* The advice is old-fashioned, but it saves women and some men from hardship and prevents unwanted pregnancies, abortions, many infections and more.
- *Safe sex.* There is no such thing, not even kissing on the mouth! All can spread STDs. Do not kid yourself, your friends, your children or partners. Sex is not a safe activity if you wish to avoid spreading infections. Condoms may be helpful if they are fresh, and better if two are used at one time. However, they are not guarantees for preventing either pregnancy or diseases. An old-fashioned idea for women, mainly, that may help a little is washing or douching the genital organs, inside and out, after intercourse with plenty of soap and water.

- *Sex and spiritual development.* For most men and women, avoiding the loss of sexual fluids is important. Later in spiritual development, it is not as critical. This does not mean no sex. It means more playing rather than a lot of intercourse and orgasms, which I know some will find difficult or impossible, they believe.
- *Birth control.* The pill, the patch and newer IUDs are extremely toxic and dangerous drugs that cause cancer, strokes and heart attacks for women. Smart women avoid them. A diaphragm is better, but somewhat less effective and less spontaneous. Condoms are best if two are used, if they are new and fresh, and only when used correctly.

OTHER ASPECTS OF LIFESTYLE

A few simple techniques can be made part of a healthful lifestyle to rapidly improve health, increase relaxation, induce sleep and more. These include:

Deep breathing. Take full, deep breaths as often as you can to enhance oxygenation of the body. Two excellent methods are:

The three-part yoga breath. As you count 1, 2, 3, fill your abdomen, pushing the abdomen out. As you count 4, 5, 6 fill the mid-chest, pushing the ribs out to the sides. Finally, as you count 7, 8, 9, fill the upper chest, lifting the chest slightly right up to the neck. Hold for several counts and then exhale slowly, also to a count of 1 through 9. You can begin the exhale from the chest and move downward, or begin the exhale in the abdomen, pushing it in, and move up the body. Repeat the exercise often so it becomes easy.

Toe breathing. Lie down comfortably. Focus your attention on your toes or even just below your feet. Now imagine large holes in the bottom of your feet and toes. Inhale gently as though you are sucking air up through your toes and feet to your lungs. Hold the breath for several counts. Then exhale gently, imagining the breath flowing down the front of your body from the lungs to the feet. Repeat this often until it becomes a habit.

- *If possible, buy an air ionizer/ozonator.* Recommended brands are Better Living or Ecoquest. Keep it in the bedroom at a medium strength of ozone. This has many benefits, but the most important is it will enhance oxygenation of the body in a gentle way. Keeping it in the bedroom assures that you will breathe the ozone all night long.
- *Gentle chiropractic.* Gentle chiropractic or other manipulation of the vertebrae can be extremely helpful while a person is on a development program. Rough chiropractic is not as helpful and not recommended.
- *Bodywork.* Techniques like Rolfing, structural integration and even deep massage techniques are very helpful for many people. One can have a treat once a month, if possible, especially if the body is changing quickly or one is under a lot of stress.
- *Chi machines.* Moving the spine to keep it flexible is very helpful for most people. A short walk is excellent. If walking is not possible, or if time is short, use a chi machine. These start at about \$140.00 or perhaps less at a resale shop. It is a simple box on which one places the ankles. The machine slowly and gently moves the spine back and forth to induce relaxation. This helps many people to sleep better and has other benefits as well.
- *Rebounding.* This simple, safe form of exercise promotes lymph drainage.
- *Use an inversion table.* This device gently turns one upside down, expanding the spaces between the vertebra. It can help undo the continuous effects of gravity on our bodies.

3. THE RAPID DEVELOPMENT DIET

John, age 25, injured his Achilles tendon. Surgery was performed to correct the problem, but the wound would not heal correctly. To induce healing, a second surgery was performed and this failed as well. John was scheduled for a third surgery when he heard about development science. While waiting for his hair analysis results, his doctor advised the diet discussed in this chapter. She guessed he was a slow oxidizer because he was often fatigued, depressed and seemed very lazy. John enthusiastically started the new diet. Within two weeks, and before he even started his supplements, the tendon wound healed sufficiently that the surgeon cancelled the third surgery. This case is an example of the incredible importance of diet in a few cases and how easy it can be in some instances to avoid surgery.

NOTE: We continue to research and improve the development diet. For the latest update, check the article entitled *Food For Daily Use* at www.drlwilson.com.

SIX DIETARY RULES FOR RAPID DEVELOPMENT

1. Eat lots of well-cooked vegetables with breakfast, lunch and supper. Eat three meals a day. **Do not eat** just grains and meats, or mainly chemicalized food such as fast food, or raw vegetables (salads).

Adults need 2-3 cups of well-cooked vegetables with each meal. It is best if they are fresh and not canned or frozen. Interestingly, canned vegetables are testing better than frozen ones. Organically grown and locally grown are usually superior, as well.

Vegetables need to be pressure-cooked for *no more* than 3 minutes or steamed, boiled or slow-cooked for no more than about 45 minutes. Do not fry, broil, roast or bake vegetables. Also, preferably do not stir-fry or sauté vegetables. These produce toxic chemicals.

2. Eat only whole, natural foods. This means: NO protein powders, NO green drinks, smoothies or shakes, NO juices except 10-12 ounces of carrot or wheat grass juice away from meals, NO eggs whites only, NO Egg Beaters and NO food bars. See the references at the end of this article for the reasons for these restrictions.

3. Eat animal protein twice every day. For rapid development, do not eat a vegetarian diet. Animal protein includes red meat such as lamb, goat, organic or grass-fed beef, dark meat chicken, sardines, eggs and a little goat yogurt.

However, limit the portion size for adults to 4-5 ounces or 110-140 grams of animal protein per serving, and no more.

4. Eat warming foods only. All food tends to either *warm* the body or *cool* it down. These are physics qualities. Warming means faster motion of the atoms and molecules. It is also more compact, with more inward and downward movement of subtle energy. Some teachings use other equivalent words such as yang and yin in Chinese medicine and Macrobiotics.

Warming foods includes meats, eggs, cooked vegetables, and whole grains. Cooling foods are fruit, raw vegetables, juices, all food powders, and sweets of all kinds. These slow down or stop development.

For this reason, do not eat sugar, honey, maple syrup, agave nectar, coconut products such as coconut water, coconut cream or coconut milk, soda pop, fruit juice or much fruit or milk. Also, do not eat sweetened foods such as cookies, cakes, ice cream, pastries, all desserts, and many breads.

5. Do not drink any liquids with meals. Have drinking water before your meal, then wait five minutes or longer before you eat your meal. It also means take your supplements before your meal if you need to have some water to swallow them. Then wait five minutes and then eat your meal. However, it is okay to take supplements during or right after a meal.

Do not have smoothies, shakes, protein drinks, superfood drinks, frappes or any other drinks that combine water or other liquids with food. This is much harder on digestion and too yin. If you have carrot juice, have it alone. Then wait at least half an hour before eating a meal.

6. Use sea salt with all meals. Preferable brands are Hain and Hawaiian Bamboo Jade. Use sea salt to taste, including on meats. It is an important product for development. Sea salt in moderation does not raise blood pressure or cause other problems.

AVOID standard table salt, which is a processed and toxic product. Also avoid salt substitutes such as potassium chloride.

WHAT IS DEVELOPMENT?

Development is the expansion of the energy field of a human being. It is also the unfolding of the full genetic potential of a human being and the primary goal of development programs. This is different from other healing programs and requires a different diet.

Certain foods contain the right chemicals needed for development. **These foods are needed on a daily basis.** This article discusses these foods. For more details, read *Introduction To Development* at www.drlwilson.com. We continue to research diet, so this article will be updated periodically. Please check it every six months.

THREE ARTICLES ABOUT THE DEVELOPMENT DIET

In addition to this chapter, two other articles at www.drlwilson.com discuss the development diet. They are: *Foods For Occasional Use* and *Forbidden Foods*.

FAST AND SLOW OXIDIZER DIETS

The dietary principles for fast and slow oxidizers are similar. However, they differ in the following ways:

Slow oxidizer diet. When the oxidation rate is slow, one needs less fat and more starches in the diet. There should be enough fat and oil in the development diet without adding extra fat. High-fat foods in the development diet are:

- Almond butter- very important! Do not skip this for any reason. If you don't like it, disguise the flavor. Organic almond butter is more costly, but better.

- Sesame tahini

- Oil found in blue corn chips

- Sardines
- Meats (mainly lamb, dark meat chicken, and organic ground beef. Wild game and turkey have a little fat, but not much)
- Eggs (specifically runny egg yolk)
- Goat yogurt
- Possibly a small amount of butter or vegetable oil used in cooking.

Fast oxidizer diet. Fast oxidizers *require one to two tablespoons of additional fat or oil with each meal.* They also require less starch in the diet.

Excellent extra fats are runny egg yolk, cream, butter, animal fats, and a little vegetable oil such as olive, sunflower, safflower or other vegetable oils.

Vary the type of extra fat or oil you eat. For example, do not just have olive oil or butter three times a day. This will unbalance the body and will slow development.

Chicken skin is not that good as an extra source of fat. Do not eat it at all if the chicken is roasted because it is then toxic.

Carbohydrates or starches. Fast oxidizers require less carbohydrate than slow oxidizers. However, both slow and fast oxidizers need at least a few blue corn chips every meal.

We wish that other grains supplied the same nutrients as blue corn chips, but they do not. We also wish that blue corn cereal or blue corn tortillas were as good as the chips, but they are not. Skipping the blue corn chips slows development a lot.

However, do not overdo on corn chips, which is easy to do. Limit the number to about 8-10 per meal. If you are still hungry, add more vegetables to your diet rather than fill up on corn chips or other grains.

VARYING THE DIET DEPENDING ON ONE'S SIZE AND LIFESTYLE

The portion sizes recommended below are average sizes. If you are very small or very large, you can adjust the portion size accordingly. However, we find that most adults need several cups of cooked vegetables three times per day, regardless of their size or weight.

II. DAILY FOODS

COOKED VEGETABLES

- Eat 2-3 cups or 500-700 ml (volume) of cooked vegetables with each meal, three times daily. Measure the amount of vegetables you eat in the cooked state, not the raw state. This amount is needed to remineralize the body. ***This is the most important part of the diet, and the one with which most people have the most difficulty.***

Food is much less nutritious today than it was 100 years ago. This is why many more cooked vegetables are needed today. For details, read *Everyone Is Depleted And Toxic* at www.drlwilson.com.

Cooking.- Vegetables must be cooked until they are soft, not raw, crunchy or al dente. Otherwise, the body cannot absorb enough minerals from them. However, do not overcook vegetables. When properly cooked, vegetables should retain their color but be soft.

This requires about 3 minutes or a little less in a pressure-cooker or 30-40 minutes in a steamer or crock pot.

Never pressure cook vegetables for more than 3 minutes. This just overcooks them and destroys the chemicals in the food that development requires. If the vegetables do not pressure cook in 3 minutes, they need to be sliced thinner.

Also, we no longer recommend stir-frying or sautéing vegetables, except occasionally. The reason is that stir-frying produces *advanced glycation end products*, which are toxic chemicals. We only suggest steaming, pressure-cooking or crock pots for cooking vegetables.

Preferred Vegetables. Eat almost exclusively the preferred vegetables listed below. There are about 28 of them. If you cannot obtain all the preferred vegetables, just do your best and eat plenty of the ones you can get.

A medley or mixture. At each meal, eat a mixture of 10 or more of the preferred vegetables. This is new and replaces an older recommendation to eat between about 5 and 9 different vegetables per meal.

We suggest eating some carrot, rutabaga and daikon with each meal. Also, try to have at least 3 kinds of onions per meal. The other vegetables can be rotated.

Fresh, organically grown vegetables are best. Commercially grown ones are okay, too. The next best type right now are canned vegetables. Frozen vegetables appear to be least helpful for development, so do not eat them, if possible.

Salads and other raw vegetables are not recommended because they are much more cooling and the body cannot extract much nutrition from raw vegetables.

Drinking the water in which you cook vegetables. If you pressure-cook vegetables, drink the water in which you cooked the vegetables. Drink it 10-15 minutes before you eat your meal, or at least an hour after the meal, however, so as not to dilute the digestive juices.

How often to cook. Ideally, cook vegetables for each of three meals. However, it is okay to cook vegetables just once or twice daily. They will keep throughout the day. Ideally, do not keep them overnight, although leftovers for one day are okay.

Preferred vegetables. Eat mainly the preferred vegetables listed above. Do not eat a lot of any other vegetables, including greens. They do not provide enough of the chemicals needed for development.

Pureeing. You may puree vegetables after cooking them to make it easier to eat 2 cups of them or more. To do this, after cooking vegetables, pour off the water you cooked them in so you can drink it. Then, to puree the vegetables, use an *electric hand blender*. It looks like a stick with a cord at one end and a blade at the other end.

Do not use a regular blender because they require adding water. This is not good because the water dilutes the stomach acid. The hand blender does not require adding water to the vegetables.

Peeling. Do not peel vegetables such as carrots, even if they are not organically grown. Clean them with a vegetable brush. However, remove the outer dried skin of onions and garlic.

The list of preferred vegetables:

Root Vegetables:

Red onions

White onions

Yellow onions

Sweet onions

Gold pearl onions

Red pearl onions
 White pearl onions
 Boiler onions
 Cipolline onions
 Bulb onions
 Green onions or scallions
 Shallots
 Leeks
 Rutabaga
 Daikon or white radish
 Carrots (standard orange carrots only)

Cruciferous vegetables:

Red cabbage
 Savoy cabbage
 Brussels sprouts
 Broccollette, brocolini or baby broccoli (but not regular broccoli).
 White cauliflower
 Orange cauliflower
 Purple cauliflower
 Cauliflower stems and leaves (sliced finely so they cook).

Other. Green beans, and a *small amount* of golden beets, celery, garlic and ginger.

For **celery**, have only about half an inch of a stalk twice a week. For **golden beets**, have a thin slice twice a week – about the size of a quarter coin. For **garlic**, have 2 little cloves per week. For **ginger**, have 2-3 small slices per week.

Here are more notes about certain vegetables:

Brocolini. This is delicate and cannot be cooked more than about 3 minutes in a pressure cooker without becoming overcooked and losing its nutritional value. Ideally, just eat the brocolini flowers and leaves, and discard the stems because they contain less of the chemicals needed for development.

Brussels sprouts. We are not sure why these are so named, as they are not sprouts. They are fully grown vegetables with many healing properties.

If they are available, eat at least one or two medium-sized Brussels sprouts every day.

Cabbage, red and Savoy. These are excellent for development. As with all vegetables, look for smaller heads of cabbage because they are more warming. Also, keep cabbage and all vegetables in plastic bags from the supermarket to help preserve their freshness.

Adults can have about 1/2 of a leaf of each one (red and Savoy cabbage) every day, at least. It should be soft, when cooked, and not crunchy.

Carrots. Smaller is better, but do not buy the peeled, so-called “baby carrots”. In general, carrots and other vegetables that are sold loose are better than those sold in plastic bags.

For cooking, cut carrots into pieces that are about ¼ to ½ inch or 1 cm long. If the carrot is thicker than about 1 inch or 2 cm, slice the carrot longitudinally or the long way, as well. This way it will cook in a steamer or pressure cooker at the same rate as the other vegetables. Be sure to have carrots at least once a day.

Cauliflower. The best types are the orange and the purple cauliflower, even if they are not organically grown. Next best is white cauliflower. Green cauliflower is not recommended. Have some cauliflower every day and ideally with every meal.

Think of cauliflower as two vegetables: 1) the cauliflower, and 2) the stems that are around the cauliflower. Both contain the chemicals needed for development. The stems must be sliced thin or they won't cook through.

Daikon or white radish. Have a little daikon preferably with each meal, or at least once a day. Don't substitute the common red radish or any other for daikon.

Garlic and ginger. Eat these only about twice a week, and only a very small amount. Garlic cooks quickly and should not be cut up. Ginger cooks slowly and needs to be sliced very thin and cut up some more in order to cook correctly.

Golden beets. These are helpful for development, but only a little is needed – about 1 thin slice of a medium-sized golden beet twice a week. Avoid red beets, which do not contain the chemicals for development.

Green beans, also called string beans. This is an excellent vegetable to speed up development. Have a few green beans every day.

If possible, buy them loose and not in a plastic bag. The bagged ones seem to be affected by the plastic in the bag.

Cut them into about 1-inch pieces or 2 centimeter pieces. This is about right so they will cook at the same rate as the other vegetables. When cooked properly, they should be soft, not crunchy.

Green onions or scallions. This is an excellent vegetable for development. Have some daily.

Leeks. This is an excellent vegetable for development. Have some every day. Eat the whole leek – both leaves and stem.

Leeks often contain some dirt where the stem becomes the leaf. This is unavoidable and you may have to wash this part when you cut a section of it to eat.

Onions. Onions are very important for development. They contain a number of chemical compounds that speed development. Without them, development proceeds slowly. Please eat them all, if you can find them. We suggest eating a little of three or more types of onions with each meal.

To extract all the minerals and other chemicals from onions, they must be cooked until soft. Small chunks cook well in 3 minutes or a little less in a pressure cooker or about half an hour or less in a steamer.

Rutabaga. Slice rutabaga thin so it will cook through. When cooked correctly, it is sweet and delicious. When not thoroughly cooked, it has a somewhat unpleasant taste so you will know to cook it more or slice it thinner. It is very helpful for development, so eat some every day if you can find it in your area.

Other vegetables do not contain as much of the chemicals needed for development, or they are too cooling. Eat them only occasionally.

Shopping. Shop for vegetables at least once a week. When there is a choice, buy smaller sized vegetables. These are more warming. Vegetables are usually better if they are bought loose, rather than in sealed plastic bags.

Storage. When you bring vegetables home, rinse them off in clean water. You can use a little soap or peroxide with it, if you wish. Then put them into clean plastic bags – the kind that one uses at the supermarket when one buys loose vegetables. Store them in the refrigerator.

The author stores vegetables in the bins in the refrigerator door. He removes the bins and puts them on the counter when it is time to cook. This is easier than lifting a heavy bottom bin.

Note for vegetarians (which we do not recommend): If you don't eat meat, then you need to eat more green vegetables to obtain iron.

PROTEIN FOODS

Protein foods that are needed for rapid development are:

Dark Meat Chicken (thighs or legs). Eat three or four 4-5 ounce portions weekly. Natural or free range chicken is generally best. Foster Farms in the USA is a good brand.

Lamb. Lamb loin chops are best, but any cut of lamb will do. Most lamb is pasture-raised and okay. Eat two 4-5 ounce portions per week. For lamb chops, put one or two cuts in the lamb and then cook it for about 1.5 minutes in a pressure cooker. Thicker pieces will take longer than thinner ones. Lamb and chicken should be juicy, but not raw. Do not drink the water in which you cook chicken, lamb or beef. It is somewhat toxic.

Roasted almond butter. We suggest almond butter, but recently (2019) most almonds are contaminated, including organic almonds. For now, it may be best to skip this food.

Roasted sesame tahini (sometimes called sesame butter). Eat 1 tablespoon of roasted sesame tahini daily or two tablespoons of hummus daily (which contains sesame tahini). Only have sesame butter or hummus made with white sesame seeds.

Sardines. These are excellent for development, and the only canned food we suggest. Eat three or four 4.25 to 4.5-ounce cans of them weekly. If you will not eat sardines, you must take a supplement of about 1000 mg of EPA and DHA weekly and 5000 iu of vitamin D daily.

Sardines in the can are already cooked and should not be cooked more. You can eat the olive oil found in some cans of sardines, although elsewhere we suggest not cooking olive oil. The olive oil in sardine cans was not exposed to the air and is safe. Avoid Asian sardines.

Grass-fed, organic and heirloom beef. This is a newer recommendation. A little properly cooked, grass-fed beef is an excellent food for development. If possible, eat beef from an heirloom variety of cow such as criollo beef. It offers superior nutrition and speeds up development.

Eat two 4-5 ounce portions of grass-fed or organic beef every week. Regular feedlot beef is less nutritious and irritating for the body. Avoid it or eat it only occasionally.

Beef must be cooked by *braising*. Cooking instructions are in a section below. A little beef jerky is okay provided it is not full of chemical additives and provided you chew it thoroughly.

Eggs. Eggs in moderation are helpful for development. Cage-free, free-range or organic eggs are best. Adult women may eat up to 6 eggs per week. Adult men may eat up to 8 eggs per week. Store eggs in the refrigerator.

Eggs must be cooked so that the yolk is runny. Possible methods are:

1. Soft boiled for only 3 minutes.
2. Poached.
3. Scrambled, but only if they are eaten when mushy, not hard.

Never eat hard-boiled eggs or eggs that are hard such as in quiche, cake, pastries or other dishes. These are very difficult to digest.

Wild game. Caribou, elk, and deer are good. Do not eat duck, goose, bison or buffalo. These are a little toxic.

Plain (meaning unflavored) goat yogurt. This is helpful for development. Eat 8 ounces per week.

All other dairy products such as cows milk yogurt and kefir, cheese and milk do not contain the chemicals needed for development. They are also cooling foods. For this reason, avoid them or have them only occasionally. Never have a total of more than 4 ounces of all dairy products in one day, including butter.

OTHER PROTEINS:

Goat meat and turkey – These are foods for occasional use and are optional. Have a portion of each at most only once or twice weekly.

Beans or legumes. These do not contain the chemicals needed for development. Therefore, avoid them or eat them only occasionally. They include black beans, pinto beans, kidney beans, black-eyed peas, and others.

AVOID

Organ meats. These are too high in toxic meals.

Pig products (such as pork, ham, bacon and lard). These often contain parasite eggs, even if well-cooked. This meat also slows development.

Processed meats, such as salami and bologna. These contain chemical additives.

Lentils. At this time, lentils are not working well and we suggest avoiding them.

Protein powders, protein food bars and protein drinks. These are cooling foods and usually very bad food combinations. Avoid all of them.

Portion size. A serving of protein food for adults is 4-5 ounces or about 100-150 grams of protein food (not grams of protein) per serving. This is less than some people eat.

Cooking proteins. Lightly cook all protein food except cheese, yogurt and kefir.

Salt. When you eat protein foods, sprinkle a little sea salt on them. It helps with digestion.

GRAIN FOODS

Blue or purple corn. Blue corn tortilla chips (or blue corn dippers or blue corn taco shells) are the best grain food for development. If you can get them where you live, this is best. Otherwise, look for yellow corn chips. These are not as good, but have some of the chemicals needed for development. Other grain foods are occasional foods and are not required for development.

Adults need about EIGHT TO TEN blue corn chips or dippers with each meal. They are easy to overeat, so count them out. If you are still hungry, add more vegetables or protein to your diet rather than eating more corn chips. For details, read *Blue Corn* at www.drlwilson.com.

AVOID RICE AND WHEAT. All rice, even organically grown rice, is somewhat toxic. We don't know exactly why this is so. However, at this time avoid eating rice, rice noodles, rice crackers or rice cakes. Wheat is hybridized, irritating and an allergic food.

Avoiding all grains. Do not avoid all grains unless you don't tolerate them. When you can eat them, have the blue corn chips. They contain chemicals needed for development. If you

cannot eat any corn, have some oats, millet or quinoa. However, these are low in the chemicals needed for development, so do not eat them too often.

AVOID:

- Blue corn chips made with **coconut oil**. Coconut products are too cooling and slightly toxic. See below if you have difficulty eating blue corn.

- All **wheat and spelt** products and all refined grains. Wheat is an irritating food today due to hybridization.

- All raw grain products such as **granola, muesli and trail mix**. Some **food bars** also contain raw grains.

FATS AND OILS

For slow oxidizers. Do not add extra fat to your daily diet. There should be enough fat and oils in the daily diet. Foods that contain fat that are excellent for slow oxidizers are **lamb, sardines, eggs, blue corn chips, dark meat chicken, almond butter, tahini and grass-fed or organic ground beef**. Please eat these foods or your diet will be too low in fat and unbalanced for development.

For Fast Oxidizers. Add 1 or 2 tablespoons of extra fat per meal. Acceptable fats and oils are **butter, cream, tallow, lamb fat, olive oil** (but do not cook olive oil because it turns toxic), and a little of other vegetable oils.

AVOID coconut oil and avocado oil. They are too yin. Vary your extra fats and oils.

FRUIT AND SWEETS

These slow or stop development. They are very cooling foods and too high in sugar. We suggest **avoiding** all fruit, fruit juices, and all sugars, including honey, maple syrup, agave syrup, rice syrup and other sweets. An exception is if you want to have a few botija olives per week, this is okay, although not required.

NATURAL SEA SALT

This is an excellent product for development and required on the diet. You may have sea salt to taste.

Preferred brands are Hawaiian Bamboo Jade and Hain sea salts. The latter is sold via the internet. Celtic Salt is not quite as good because it is from a contaminated area of the ocean. For details, read *Salt* at www.drlwilson.com.

BEVERAGES

Drinking water. The best types of water to drink are natural spring water or carbon-only or sand-filtered only tap water if it is safe to drink in your area. Sparkling water (with bubbles) is okay.

Avoid distilled water, de-ionized water, and reverse osmosis water, as these contain very few minerals. Do not add minerals to water because it tends to unbalance the water.

Avoid alkaline waters. These are any waters with a pH above about 8.8. These waters will make you feel better for a while. However, they unbalance the body. For details, read *Water For Drinking* at www.drlwilson.com.

Bone Broth. This is a good source of minerals. However, the only type that is acceptable at this time is beef bone broth. The others may be contaminated with lead. Cook the bones for only 3-4 hours. For details, read *Bone Broth* at www.drlwilson.com.

Carrot Juice. This is a good source of minerals and other nutrients. Adults may have 10-12 ounces of carrot juice daily. As an alternative, you may have 1 or 2 ounces of fresh wheat grass juice up to twice per week.

However, do not have more juice than this, because juices are raw food and very cooling foods. Do not have fruit juice, which is even more cooling.

Tea and coffee. One cup of regular coffee and one cup of herbal tea daily is okay, but not required. Good teas are chamomile, hibiscus or lemon grass.

AVOID green tea. It is too stimulating and interferes with a development program.

AVOID soda pop, alcohol, kombucha tea, other juices, alcohol and other beverages.

DAILY FOOD FOR BABIES AND CHILDREN

It is very important to feed children and toddlers the same diet as for adults. Do not give children fruit, cereal, grains, juices, soft drinks or junk foods!!!!

Cream. Fresh heavy cream is an excellent fat, especially for children, who usually love it and will eat vegetables if you put some cream on them.

Cream is best unpasteurized. However, it is okay if you can only buy pasteurized cream. Organic cream is usually better than standard cream.

Food for babies. If a nursing mother is following a development program, with supplements, their babies should do very well on mainly breast milk until age 3 or even a little longer if they desire it.

All babies also benefit from $\frac{1}{4}$ to $\frac{1}{2}$ of a runny egg yolk from an egg that is soft-boiled for 3 minutes starting around the age of 6 to 8 months.

Occasionally, a baby will need a few well-cooked vegetables and perhaps a little shredded meat after the age of 1 year. *If a nursing mother is not following a complete development program, her baby will need supplemental food, usually starting at 6 to 9 months of age.*

If a baby cannot get breast milk or perhaps goat milk, use home-made formula. For the recipe, read *Baby Formula You Make At Home* at our website. Avoid all commercial baby formula. For details, read *The Baby Manual* at www.drlwilson.com.

III. OTHER TOPICS

COOKING

April 2019 - New recommendation: Do not drink the water in which you cook beef or chicken. It contains a toxin. Using tap water to cook these meats is fine.

Reasons for cooking food:

- Proper cooking does not damage food very much. However, it greatly increases the availability of the minerals in food by breaking down tough vegetable and other fibers. The latter is far more important.

- Cooking kills harmful bacteria and other germs.
- Cooking adds warming energy to food that is very important for development.
- Cooking concentrates vegetables, allowing one to eat more of the them.
- Cooking makes some foods much easier to digest.

Acceptable methods of cooking are pressure-cooking, steaming, and crock pots. Less desirable methods of cooking are stir-frying or sautéing, frying, broiling, roasting, grilling and baking. These cooking methods produce *advanced glycation end products*, which are highly toxic chemicals that damage the body. Ideally, do not use the less desirable methods.

Do not cook often with oil, as this tends to produce toxic chemicals. Do not bake vegetables in olive oil. This generates toxic chemicals that are very hard on the liver. Avoid microwave ovens.

Pressure-cooking. This is best for vegetables, but not for meats. The advantages of pressure-cooking vegetables are:

- It increases the warming quality of the vegetables.
- Cooking is very fast, which helps retain nutrients and is convenient.
- Food tastes good, cleanup is easy, and it does not require fat or oil.

How to pressure cook vegetables. Rinse off vegetables. Then cut them either into:

- *Bite-sized chunks* (onions, carrots, broccolini, cauliflower flowers, cabbage, Brussels sprouts, leeks and shallots)
- *Thin slices* (daikon, rutabaga, cauliflower stems, celery, golden beets, and ginger)

All vegetables can then cook together and will be ready in less than 3 minutes. Never cook them longer than this.

Use a timer the measures seconds to avoid overcooking food in a pressure cooker. When properly cooked, vegetables should retain their color, but be soft. If they turn grayish and look raggedy, they are overcooked. Pressure cooking grains takes longer.

Some foods are too delicate to be pressure-cooked, including ground beef, and ideally chicken, and fish. For more details, read *Pressure-Cooking* at www.drlwilson.com.

Cooking grass-fed or organic ground beef. (We suggest avoiding regular beef, which is an irritating food for many people). Meat is actually a delicate food, and certain zinc compounds are destroyed if it is overcooked. We suggest cooking meat by *braising*:

1. Put about half an inch of water in the bottom of a pot or frying pan and bring to a boil.
2. Add the ground beef in the form of a patty that is no more than $\frac{3}{4}$ inch thick.
3. Cook on one side for about 10 seconds. Then turn it over and cook it on the other side for about 10 seconds. Then remove from the water, add a little sea salt, and eat. The meat will be rare or raw in middle and that is okay. It should not be cold in the middle. Take GB-3 with your meat.

Eating habits. Eat slowly, chew thoroughly, sit down when eating, and eat in a relaxed, quiet environment. Ideally, rest a few minutes before your meals, and rest at least 10 minutes after each meal. Avoid eating while driving, when upset, or in noisy places.

Order of eating foods.

1. Drink water up to 5 to 10 minutes before eating meals.

2. Protein. Begin most meals with some protein. It is the most difficult type of food to digest. The stomach needs more time to work with it.

3. Cooked vegetables. Wait about five minutes after eating protein. Then eat cooked vegetables.

4. Blue corn chips or other starch. Wait about 5 minutes after eating cooked vegetables and finish the meal with about 5 medium-sized blue corn chips. If you cannot get blue corn tortilla chips, you may have yellow corn chips or a small portion of another grain or starch.

Proportions. 70% of each meal by volume (not calories) should be cooked vegetables. About 15% of so should be protein food. Fast oxidizers need one or two tablespoons of fat in addition to that which is in their food. Slow oxidizers should not need additional fat.

Food combining. The basis for each meal is cooked vegetables. With this, you may have **one** protein food and **one** type of grain food.

For example, do not mix meat and eggs at one meal, as these are both proteins. Also, do not mix rice and corn tortillas at the same meal, as these are both starches.

Fermented foods. Fermented foods do not contain the chemicals needed for development. In fact, they interfere with development - they are all cooling foods because they are raw and ferments are cooling. Many of them also contain *aldehydes*, an important class of liver toxins. Those allowed as occasional foods only are **a little** sauerkraut, miso, yogurt, kefir and raw cheese.

When to add sea salt. We suggest cooking food before adding salt. After cooking, add some sea salt to taste.

Seasonings and dressings. Refrain from putting a lot of dressings, sauces, relishes, sweeteners or spices on your food. A little is fine to flavor the food. Too much has a cooling effect, is toxic, and will upset digestion.

Toppings. These are not needed. However, simple, tasty toppings are almond butter, a little pesto sauce, a little hummus, or some grated cheese. For children, cream is delicious mixed with cooked vegetables.

If you want something fancier, you can make Chinese-tasting vegetables such as chow mein or Thai-tasting vegetables with a little peanut sauce or curry. Another set of toppings are Indian-tasting vegetables with a little mokni, vindaloo, sag or other herbal sauces as toppings. These are sold in health food stores.

Number of meals. Eat at least three meals daily. Do not skip meals. It is difficult to obtain enough nutrients eating three meals daily. It is even less possible if you skip meals.

If you are not very hungry, eat by the clock, if needed. Do not wait until you are hungry, as some health authorities suggest. If you are not hungry, still try to eat at least three meals daily.

Food Rotation. Rotate your vegetables among the preferred vegetables listed earlier in this article. Also, rotate your proteins.

Also, rotate the brands of spring water you drink and rotate the brands of blue corn chips. We also recommend rotating the brands of sea salt. Rotating your food gives you more nutrients.

Leftovers and freezing food. Freshly cooked food is best for development. You may have one day of leftovers. Do not prepare several days worth of food at one time. Freezing cooked food reduces its benefit for development. Also, do not buy a large quantity of meat and freeze most of it. If your meat comes frozen, keep it frozen until you are ready to eat it. Do not refreeze meat.

Soups and purees. *Thick* soups or purees are excellent ways to incorporate lots of vegetables into your diet. Do not eat watery soups because the water will dilute the stomach acid and interfere with digestion. For more details, read *Soups, Purees, Juices and Smoothies* at www.drlwilson.com.

Snacks. Ideally, do not snack, as it is hard on digestion. It would be better to have another small meal instead of snacking.

If you must have a snack, it can be a few blue corn chips, leftover vegetables and protein, a little almond butter, hummus, a few sardines or a piece of chicken.

Eating out. The rules are:

1. Eat in restaurants that serve fresh cooked vegetables and fresh meats. Chinese, Thai and East Indian restaurants often serve the most cooked vegetables. Mexican restaurants are not as good.
2. Ask the waiter to take away the bread.
3. Ask for triple portions of cooked vegetables and ask for the preferred vegetables (see the VEGETABLE section of this article above).
4. Avoid fast food restaurants and most chain restaurants. The food quality is poor.
5. We don't recommend eating out too often. If your work requires it, learn which restaurants are best and how to ask for exactly what you want.

References: The following articles at www.drlwilson.com contain more details about this diet: *The Food Situation, Organically Grown Food, Beef, Flawed Studies Of Organic Food, Genetically Modified Food, Food Faddism, Food Basics, Yin And Yang Of Foods, Fifty Reasons For the Cooked Vegetable Diet, Microwave Ovens, Vegetarian Diets, Fruit-Eating.*

COMMON MEDICAL MYTHS ABOUT FOODS AND NUTRITION

- *Just eat a balanced diet.* This idea is extremely vague and does not mean much. To some people, it just means eating a few vegetables with your ice cream and pizza.
- *Drugs and surgery are better than diet or supplements for serious conditions.* This could not be more wrong. Drugs are needed in some situations, especially surgery. However, a development program is better for many serious conditions such as many cancers, heart disease, diabetes, infections and many others.
- *Nutritional therapy can't be too good because there are no double-blind studies.* The reason for this is that it is hard to disguise a carrot or a piece of meat. However, there are other types of studies that clearly show that diet matters and can help prevent and heal illness.

- *Food alone is adequate to meet our nutritional needs.* This 100-year-old allopathic and homeopathic idea is so incorrect it is shocking that it is still taught in medical and other healing schools. Today's food is so deficient in some nutrients that even eating very carefully rarely supplies all that our bodies require.
- *Just eat according to the four food groups or according to the government's food pyramid.* These are allopathic or 'dietetic' ideas that, in my experience, have little basis in fact or reality. In fact, they often lead to worse eating habits such as living on excessive starches.
- *Vitamins and minerals are only helpful to correct deficiency diseases such as scurvy.* This 100-year-old concept is still taught in some medical schools, but contains no truth at all. Anyone offering this advice has not researched the subject thoroughly.

COMPARING THE DEVELOPMENT DIET WITH OTHER DIETS

What about the Weston Price diet? We have great regard for Dr. Price. However, he lived 100 years ago, when the earth was cleaner. Also, the foundation that bears his name has changed his teachings. High fat and a lot of fermented food are dangerous. We suggest:

- *Avoid all wheat and spelt products.* Wheat is very hybridized and irritating today.
- *Only eat grass-fed beef, and only three 3-4 ounce portions weekly.*
- *Eat 6-9 cups of cooked vegetables every day.* This is the only way one can obtain many phytonutrients, such as vital minerals and vitamins needed to nourish and detoxify the body.
- *Eat little raw food.* Raw food is extremely yin. Also, it harbors parasites, fungi and bacteria.
- *No organ meats.* These are more toxic and can harbor more parasites than other meats.
- *Little or no fermented foods.* Most contains toxic aldehydes and is quite yin.
- *Avoid all fruit and fruit juices.* Fruit is hybridized, yin and contains toxic potassium due to the widespread use of N-P-K fertilizers that did not exist when Dr. Price lived.
- *Avoid most fish and all shellfish except 3-4 cans of sardines weekly.* Too much mercury!
- *Avoid all pig products.* Pigs are more yin today, and contain trichina cysts, even if cooked.
- *Cod liver oil does not provide enough vitamin D or omega-3 fatty acids.*
- *Soaking grains is not needed.* Soaking makes grains more yin, which is quite harmful, today.
- *Avoid all coconut and avocado products.* They are nutritious, but too cooling.
- *Avoid all sweets.* Honey, maple syrup, agave nectar, almond milk and others are all too yin.
- *Limit dairy and especially raw milk consumption to 4 ounces daily.* Milk is quite cooling.
- *Avoid nuts and seeds, which are too cooling.* Two tablespoons daily of roasted almond butter is required, however.
- *A small amount of blue corn tortilla chips are required for development.* Other grains are not required.
- *Minimize or avoid raw salad.* People cannot extract enough minerals from salads, and they are too cooling. Also, raw salad in restaurants are not clean, in many cases.
- *A number of supplements are needed today that were not needed when Dr. Price lived.*

The paleolithic diet. This is similar to the Weston Price diet. It allows fruit, salads, nuts, and seeds, and does not emphasize cooked vegetables nearly enough.

The Mediterranean diet. This diet allows too much fruit, grains, dried beans and raw foods, and does not suggest enough cooked vegetables.

Articles about many popular diets are at www.drlwilson.com.

4. NUTRIENT SUPPLEMENTATION

Maggie, age 11, easily became angry. She often talked back to her parents. She had difficulty in school with anger and was generally difficult to be around. Her diet consisted of mainly refined, sugary foods. She ate almost no vegetables and didn't like them.

Maggie's parents agreed to put Maggi on a development program. They gave her the nutritional supplements, but would not change her diet. Maggie was difficult enough to handle without forcing her to stop eating her favorite junk foods.

Maggie's hair analysis revealed typical patterns seen in preteen and teenage girls such as a slow oxidation rate, poor eliminator patterns and copper toxicity. Within several months of taking supplements, Maggie's temperament improved a lot. She became calmer, more responsive and able to engage in pleasant conversation.

The point of this case is that rarely significant healing can occur due only to taking the development supplements, without improving the diet. However, we want to emphasize that this is uncommon.

Food supplements include hundreds of extracted and isolated nutritional substances. They often supply nutrients in doses above the minimum daily requirements (MDRs). The MDR of most nutrients are too low. Even so, most Americans, for example, eat diets that don't even supply these paltry amount of nutrients.

WHY EVERYONE NEEDS FOOD SUPPLEMENTS TODAY

- *Development.* This is the growth of the human energy field and is fulfilling the complete genetic potential of a human being. Development is the birthright of every human being. Yet it is rare today, in large part because it requires excellent nutrition that few people achieve. Promoting and supporting development is the goal of this book and of the programs that we set up for people.

Development requires eating 6 to 9 cups of the preferred cooked vegetables. They must be cooked until they are soft, but not overcooked, in order for the body to absorb the nutrients they contain. Rapid development also requires supplementary nutrients. These include calcium, magnesium, zinc, kelp, trimethylglycine, a digestive aid, omega-3 fatty acids and vitamin D. It also requires a metabolic pack to balance the oxidation rate and a product to balance the sodium/potassium ratio on a hair mineral analysis. Some people also

need adrenal, thyroid and/or kidney glandular substance, lecithin and at times, one or two other nutritional supplements. Without these, development occurs very slowly.

- *Genetic nutrient deficiencies.* Some people need more of certain nutrients due to their genetic makeup.
- *Congenital nutrient deficiencies.* These are deficiencies present at birth, but they are not due to genetics. The causes are deficiencies in the mother that are passed to the child. This is an extremely important problem because most mothers and mothers-to-be are malnourished. That is our starting point and it is correct. Bringing up a woman's nutrient levels requires at least a few years! In this regard, standard prenatal care is much too little, and much too late. Failing the babies and children in this way is a major shortcoming among medical and naturopathic/holistic practitioners.
- *Food is not enough.* According to government statistics, most people's diets do not even supply the insufficient government-recommended daily allowance or RDA of nutrients such as vitamins A, B, C, D, E and K. Also, most people do not get enough calcium, magnesium, zinc, iodine and other nutrients, regardless of diet. The reasons are:
 - **Depleted soils** upon which our food is grown.
 - **Use of hybrid seed varieties** that yield more tonnage of crops per acre, but each plant contains many fewer nutrients.
 - **Use of superphosphate or N-P-K fertilizers.** These are growth stimulants that stress plants and unbalance them, damaging their nutrient qualities.
 - **Transporting food long distances.** Food loses nutrients during transport.
 - **Food processing.** This often further depletes the nutrients in foods. Among the worst are refining of wheat flour into white flour and refining sugar cane into white sugar. Canning and freezing food, and packing food in plastic also deplete some nutrients.
- *Biochemical individuality.* Even if one eats the recommended daily allowance of every nutrient, it may not be enough for optimum health. This occurs because a person's nutritional needs depend upon one's lifestyle, age, digestive ability, stressors and more.
- *Impaired nutrient absorption.* Even if a person ingests enough nutrients, many people still remain deficient due to impaired digestion and absorption of nutrients. This can be due to a low level of digestive enzymes, intestinal infection with candida albicans, parasites or other microorganisms. It can also be due to a "leaky gut" or an unhealthy lifestyle.

This sets up a vicious cycle of nutrient deficiencies. For example, low zinc causes reduced digestive enzyme production. This, in turn, worsens a zinc deficiency due to impaired absorption of zinc from food. This further reduces digestive enzyme production in a powerful vicious cycle. To counteract this vicious cycle, *everyone* on a development program receives a digestive aid and supplementary zinc.
- *Stress.* This greatly increases the need for nutrients such as zinc, magnesium and B-complex vitamins because these are used up much faster when the body is under a lot of stress.
- *Special times in life.* **Pregnancy** requires more nutrients including calcium, omega-3 fatty acids, trace minerals and more. **Breastfeeding** requires even more extra nutrients. Of great importance is omega-3 fatty acids and vitamin D. However, at least 50 nutrients are required in larger amounts. Otherwise, the baby will often reject the breast milk at age 6 months or so. **Childhood** is a time of rapid growth of the body and brain. This requires extra amounts of dozens of nutrients such as calcium, zinc, chromium, manganese, all the vitamins, omega-3 fatty acids and many other nutrients. **Ageing** is another time in life when extra nutrients are needed. As one ages digestion weakens, reducing the amount of nutrition one obtains from

one's food. Many, if not most people die of *malnutrition*, although it may be called heart disease, cancer or something else.

- *Therapeutic use.* Precise amounts of certain nutrients, when combined properly, are amazing therapeutic agents. They can help remove toxic metals, balance the oxidation rate, balance mineral levels and ratios, provide methylating agents and anti-oxidants, and much more.
- *Symptomatic use.* Food supplements can be used to alleviate symptoms. However, development programs rarely use nutrients in this manner because treating symptoms is not a whole-system method and tends to unbalance the body.

THE WAR AGAINST FOOD SUPPLEMENTS

Food supplements are at the center of a political battle today. Forces opposing them include the drug companies. They understand well that food supplements could largely replace patented drugs that typically cost hundreds of times as much and are much less safe. In many cases, the food supplements are also just as effective or more so than patented drugs.

The large drug companies are firmly aligned with socialist and totalitarian forces within the governments of the world that do not want people to be healthy and do not want people in control of their health. Methods they use in their attempts to ruin the supplement industry include:

- Phony 'studies' indicating the supplements don't work or are dangerous.
- Press releases and other public announcements denigrating supplements.
- Hundreds of websites whose goal it is to damage the reputation of food supplements.

They also influence popular websites such as Wikipedia, Facebook, Twitter and others.

- The American Food And Drug Administration formerly evaluated only the *safety* of food and drug products. This was changed about 40 years ago so that now they also evaluate the effectiveness of products. The problem is that effectiveness is not nearly as easy to check and this agency is corrupt, yet it has total control over product regulation. There is little one can do if the all-powerful FDA decides to ban a product. This is an example of a regulatory agency gone bad. Just a few of the laws and regulations used to ruin the supplement industry are:

- Requiring extensive and costly double-blind studies that few supplement companies can afford. This is necessary for drugs because they are dangerous products. It is incorrect to require them of the much safer supplement products.

- Elaborate and costly labeling rules – and changing the rules often, which costs supplement companies even more money.

- Unnecessary “good manufacturing” regulations.

- Prohibiting supplement companies from making claims for the benefits of their products, even when the benefits that are well-proven in large studies.

To learn more about the worldwide scheme to stifle the supplement industry, look up *Codex Alimentarius* on internet search engines. The foremost group in America that lobbies on behalf of consumers in the thankless task against the drug companies and the socialists is the *National Health Federation*. We strongly suggest that everyone join this superb organization.

PRINCIPLES OF SUPPLEMENTATION IN THE DEVELOPMENT PROGRAM

Development programs use supplements in a unique and unusual way. The principles of supplementation are:

- *Take into account other supplement properties besides their symptomatic effects.* These subtle qualities include such things as being more yin or more yang, animal quality versus vegetable quality, sympathetic versus parasympathetic in their effects, highly dosage-dependent in some cases, and some supplements have a different action when combined in certain ways with other supplements or foods.

Some supplements mainly nourish the body, while others strengthen particular body systems. Others can balance mineral ratios and patterns. Many others simply address symptoms and therefore have a greater tendency to unbalance body chemistry.

- *The need for a clinical and empirical approach.* Most doctors prescribe supplements based upon theoretical and other scientific studies. However, there is also an empirical or clinical aspect as well that is ultimately the most important.
- *The need for testing to assess needs.* Often, food supplements are recommended without much testing. Development programs depend upon hair mineral testing. Other testing methods are not nearly as accurate for this purpose, in our experience. The test must also be done at a lab that does not wash the hair at all, and must be interpreted correctly.
- *Make sure that supplements are used in a way that also balances the oxidation rate and the sodium/potassium ratio on a properly performed hair mineral analysis.* Otherwise, the supplement will often do more harm than good with a development program.
- *The dangers of symptomatic supplementation.* These include:
 - *Failure to raise overall vitality and balance the forces of yin and yang.*
 - *Worsening vitality by unbalancing mineral levels, ratios and patterns.*
 - *Symptomatic remedies often negate each other to some degree.*
 - *Masking or obscuring deeper imbalances in the body.*
 - *Toxicity, especially with some herbs, fulvic acid, bentonite and other products.*
 - *Synthesized, broken up and raw food products tend to be too yin, especially if used in large quantities. **This is a subtle type of problem with all nutritional supplements.*** Among the most yin are supplements of vitamin C, MSM, amino acids, fruit-based drinks, and most powdered products. Somewhat less yin and therefore among the least harmful in this regard are mineral supplements and animal-based glandular products.
 - *Too many supplements can confuse the body, interfere with digestion of food and have other subtle negative effects.*

OTHER RULES OF SUPPLEMENTATION

1. Never give more supplements than are absolutely needed. Extra supplements, even the best of them, are usually not helpful in development science. In fact, extra supplements often diminish the effectiveness of the program. Development practitioners lose a client now and then because the client believes the practitioner “forgot” an important supplement.

2. Megadoses of supplements are not better. Higher dosages of supplements often unbalance body chemistry, are very yin, and have drug-like toxic effects. They may be helpful in rare situations, but this is all.

3. Always take supplements with food, and for adults, take them preferably three times a day. We give supplements twice a day for children. This is optimal to keep the body chemistry balanced during the day. Fewer doses can be used, but this tends to reduce the healing and developmental effects. We do not recommend taking a double dose at one mean and then skipping the next dose.

Rarely, a person requires or tolerates only one dose of supplements per day, or fewer. These are very sensitive individuals or those with unusual imbalances. If the cost of the supplements is an important issue, the program can also be reduced to just once daily, but progress will be slower.

Years ago, Dr. Eck suggested taking a day off the supplements each week. We no longer recommend this method.

4. Supplement program design involves a set of formulas that are often used together. There can be overlap in the sense that the same nutrient, such as vitamin C, can appear in several formulas. This is intentional and not an oversight.

5. Do not take other supplements than those recommended without first checking with your practitioner or Helper. The program is quite delicately balanced for each person. Taking random vitamins, minerals, herbs or other products will usually negate some or all of the benefits of the program.

6. Program updates are critical, and may be needed at any time. This is one of the two main reasons for problems on a development program. (The other problem is not following the diet or other aspects of the program correctly.) A person's metabolic patterns can even shift within a week or less of starting a program. The person must then contact their Helper and request a program review. Otherwise, the program stops working and one often feels worse.

SUPPLEMENTS USED COMMONLY WITH DEVELOPMENT PROGRAMS

1. A METABOLIC PACK. This is a formula designed to balance the oxidation rate. At this time, we use three products from Endomet Labs: *Megapan* speeds up the oxidation rate, *SBF* slows an overly fast oxidation rate when the sodium/potassium ratio is less than 2.5, and *Stress Pak* slows an overly fast oxidation rate when the sodium/potassium ratio is above 2.5.

2. THYROID, ADRENAL AND KIDNEY GLANDULAR PRODUCTS. Those with a slow oxidation rate but not a sympathetic dominant pattern usually receive an adrenal glandular product. Slow oxidizers with a sympathetic dominant pattern receive a combination of thyroid and adrenal glandular in a product called Thyro-complex from Endomet Labs. We also sometimes recommend a kidney glandular product to help remove toxic metals from the kidneys.

3. MINERALS SUCH AS CALCIUM, MAGNESIUM, ZINC AND LIMCOMIN. These are needed to offset deficiencies in the diet. Also, zinc and a formula called *Limcomin* from Endomet Labs are important to either lower or raise the sodium/potassium ratio.

4. TRIMETHYLGLYCINE or TMG. This was added to the program in mid-2013. TMG is a powerful methyl donor. Methylation is one of the most important biochemical processes in the human body. It consists of the addition of a methyl group (CH₃) to many chemical compounds. This converts them to other compounds that are needed in the body. Women take 1000 mg daily. Men usually take 3000 mg daily. Babies and most children do not need TMG. Methyl groups are involved in many biochemical pathways:

- Lowering homocysteine. Homocysteine is a harmful amino acid that has been linked to inflammation of the arteries and cardiovascular disease. TMG and folate tend to lower it.
- Liver detoxification in the P450 detoxification system. This is a very critical activity and one that is sluggish or functions poorly in most people today thanks to nutritional depletion and metal and chemical toxicity.
- Alleviating some types of depression. This occurs because TMG increases the body's production of SAME or S-adenosyl methionine. This can reduce some types of depression.
- Reducing the chances of contracting diabetes. This is because methylation is required for insulin production and release.
- Avoiding genetic problems. Methyl groups are needed for protein biosynthesis. When methyl groups are lacking, more transcription errors occur.
- Balancing the autonomic nervous system. TMG seems to have an overall parasympathetic effect on the body. This is helpful for most people today.
- Energy production at the cellular level.

5. KELP. This is a very important food supplement for several reasons:

- *A superb natural source of 20-30 essential trace minerals.* Kelp is also low in cost and in a food form that is easily assimilated.
- *An excellent source of iodine.* Most people need more iodine today. The reasons are explained fully in Chapter 17 and are mostly about iodine antagonists in the environment such as fluorides, chlorides and bromides.
- *Toxic metal protection.* Sea vegetables, as compared with other iodine supplements, all contain some toxic metals because they come from the ocean. However, kelp, more than other sea vegetables, contains a lot of *alginates*. These chemicals bind and harmlessly remove toxic metals found in the kelp. This is why we recommend kelp, not other seaweeds.
- *Less toxic.* Kelp is a food that is fairly non-toxic. Other iodine products such as Iodoral, Lugol's solution, potassium iodide and others will leave a toxin in the liver.

Most people benefit tremendously by taking about six 600 mg kelp capsules daily. Begin with much less and work up slowly to minimize healing reactions this product can cause. If you use tablets, you must take at least 12 to 15, as most tablets are quite small. Another option is about 1-2 teaspoons of kelp granules daily. These do not taste very good, but can be cooked into many dishes. Children over age six need some kelp, as well. If kelp interferes with sleep, do not take it in the evening. We do not recommend other iodine supplements.

6. VITAMIN D3. According to recent research, vitamin D protects the body against not only osteoporosis and rickets, but against diabetes, cancer, multiple sclerosis, anxiety and many

other conditions. Research also indicates that most people need far greater amounts of vitamin D than they can obtain from sunlight, enriched dairy products and standard vitamin pills.

Adults need about 5000 iu daily, or even more for a short time, for optimal health. All children over the age of about the age of six also need a supplement. We do not recommend fermented cod liver oil for vitamin D. It is somewhat toxic.

7. OMEGA-3 FATTY ACIDS. These perform a number of critical functions:

- *Cell membranes.* Omega-3 fatty acids help keep cell membranes flexible and able to transfer nutrients and waste products in and out of the cells correctly.
- *Skin.* They help keep the skin and mucus membranes moist and assist their functioning. Many rashes and other skin problems today may be due to fatty acid deficiencies.
- *The nervous system.* They help with nerve transmission and vital nervous system activities. Extra amounts are helpful for ADD, autism, delayed development, cancer and other nervous system disorders, particularly in children.
- *Preventing inflammation.* Inflammation is an important cause of many illnesses today.

Most people are deficient in omega-3 fatty acids due to:

- *Widespread use of omega-6 rich vegetables oils.* The omega-6 fatty acids compete with the omega-3 fatty acids for absorption and utilization in the body.
- *Livestock are fed diets of mainly corn.* The grains are much lower in omega-3 fatty acids than the natural diet of these animals, namely grasses, leaves and small insects.
- *Insane laws in most states require dairy products to be pasteurized and homogenized.* This damages the omega-3s left in dairy products today.
- *Vegetarian diets tend to be low in omega-3 fatty acids, unless one uses flaxseed or hempseed oil liberally.* Most omega-3s come from flesh foods, fish and dairy products.
- *Overcooking destroys omega-3 fatty acids in all cases.* Fats such as butter and cream should ideally be eaten in the raw state. Eggs, meats and most vegetables, should be cooked only lightly to preserve their fatty acids.

To obtain more omega-3 fatty acids from the diet, eat 3-4 cans of sardines weekly. Other dietary sources are unreliable because the amount varies depending on where and how the food was raised. The best supplement, in our view, is fish oil, although some doctors prefer other sources. Capsules are usually better because the oil rapidly goes rancid if it is not encapsulated.

Babies and children need omega-3 fatty acid. An omega-3 supplement should be a major part of prenatal care. The fact that it is not is another indicator of the stupidity of current prenatal care. Here are simple rules in this regard:

1. *All pregnant women and mothers-to-be need to supplement with omega-3 fatty acids.*
2. *Fortify all baby food and formula preferably with fish oil, although flaxseed or hempseed oils are okay, too.* Do not trust labels that state that baby foods or formula are enriched sufficiently. The oils could be of poor quality and it is not worth risking a deficiency.
3. *Avoid vegetarian diets for children.* Please do not allow children and young teens to be vegetarians, even if parents must conceal shredded meat such as dark meat chicken in soups, tomato sauce or even smoothies, if necessary. An alternative is to feed children certified raw

(not pasteurized), organic butter, cream, milk, or full-fat organic raw cheese, yogurt or kefir. Lightly cooked eggs with the yolks still runny are also excellent for children who will not eat grass-fed and free-range meats and fish oil.

4. *To have healthy children, keep them away from junk foods and never reward them with sweets or other poor quality foods.* Do not feed them most cold cereals, potato chips (though blue corn chips with sea salt are quite good), French fries, ice cream, most sauces like ketchup, most salad dressings, cookies, cakes and other baked goods, or other sources of refined vegetable oils. Most of these are also overcooked and contain many harmful chemicals.

8. OX BILE AND PANCREATIN. This is a powerful and more yang digestive aid. We find that everyone benefits from a digestive aid today due to stress, nutritional deficiencies and weak digestion.

9. DRIED VEGETABLE CAPSULES. While not a substitute for fresh vegetables, these will help most people overcome certain deficiencies. Almost no one eats enough vegetables today. We prefer the capsules over “green drinks” or “superfoods” that also contain dried vegetables. The reasons are:

- *Freshness.* The capsules keep out most of the air and preserve the vegetables better. Once in a while, green food products are sold frozen and this is better. Kelp, of course, is a dried vegetable. Its high salt content preserves it well, so it does not need to be kept frozen or refrigerated.
- *Too yin.* Powders are often consumed in sweetened smoothies or drinks that are very yin.
- *Adding water or juice to the dried vegetables in smoothies impairs their digestion.*
- *Difficult to digest.* Concoctions with powders and sugars are much less helpful for the digestive tract than eating the vegetables in their natural state as much as possible.

10. OTHER SUPPLEMENTS. These are:

- ***Lecithin.*** Added in March 2019, this is very helpful for anxiety for many people.
- ***Garlic.*** This can help symptoms of chronic yeast, other infections, and high blood pressure.
- ***Tarragon.*** A teaspoon daily on food helps move the body out of four lows. Do not use much tarragon if you do not have a four lows pattern. Tarragon may supply extra rubidium.
- ***Coenzyme Q-10.*** This may help anyone over the age of about 60, or plus those of any age who feel they must take a statin drug, or if very low energy or heart disease are present.
- ***Magnesium.*** Extra magnesium is safe and helpful for some cardiovascular conditions and some cases of constipation.
- ***Red rice yeast.*** *This helps lower an elevated cholesterol and has many fewer side effects than any statin drug,*

USING EXTRA SUPPLEMENTS WITH A DEVELOPMENT PROGRAM

Some people ask if they can add other supplements to a development program. They believe we have forgotten one or more supplements, which other doctors or authorities highly praise. Among the most common ones are anti-oxidants, herbs, homeopathy, green tea, green superfood capsules or powders, protein drinks, isolated amino acids, and a few others.

We have not forgotten about these products. We are aware of them. Dr. Paul Eck, one of our mentors, worked for a highly respected supplement company before he developed his mineral balancing program. We also research supplements because at least once a month clients ask if they can take extra products. We research each request.

If we are not familiar with a product, we check it to see if it would improve the development program. If it turns out to be helpful, we add it to the program. However, we rarely find a product to add to the program. Problems with taking extra food supplements besides those that we recommend are:

- **Yin.** ALL food supplements are yin, especially herbs, vitamin C, MSM and a few others. Taking more of them can make the body more yin and this is the opposite of what is needed for development.

- **Toxicity.** Most herbs, for example, are slightly toxic. This slows development.

- **Unbalancing the body in subtle ways.** For example, vitamin C and E tend to raise the sodium level. Other supplements are somewhat stimulating, while others have still other effects.

GIVING SUPPLEMENTS TO BABIES AND CHILDREN

At times, giving supplements to babies and children can be challenging. The following are suggestions to make it easier:

The basic rule. Explain to your child that he or she needs to take the supplements. They will make your child stronger, smarter, better coordinated, better looking, and better at everything the child does. Therefore, the question of whether or not to take the supplements is not up for discussion.

However, you can give your child a choice of **how** to take the supplements. Some children really appreciate this. An older child may want to swallow them, just like the adults. Some children can learn to swallow pills as early as age 6 or 7. For younger children and for those who are not ready to swallow pills, here are suggestions:

- Powder the supplements using a pill crusher from the supermarket or drug store. Then mix the supplements with a little heavy cream. Cream is a good food and it is somewhat sweet so it will disguise the flavor of the supplement.

- If cream does not work, mix the powder with a little almond butter, roasted sesame tahini or hummus. Another idea is to mix supplements into some thick vegetable soup.

- Some children will take supplements if they are mixed into a little carrot juice.

- In a few cases, one may need to mix supplements with other foods that are not part of the development diet such as a little tomato sauce or apple sauce in order for a child to accept the supplements. Always try the first three suggestions above first, however.

Liquid and chewable supplements. Some people ask if they can use liquid or chewable supplements. In the future, this may be possible. At this time, we do not have good enough sources of liquid or chewable supplements that we can recommend.

SUPPLEMENT DELIVERY SYSTEMS

Controversy rages concerning the best way to package and present supplements to the body. The most common ways are:

- *Liquid* supplements. However, these do not hold their potency well and tend to cost more. They would be helpful for babies, children and pets.
- *Capsules* tend to dissolve more easily, but may be larger in some cases than tablets, so they are harder for some people to swallow. Capsules do not require binders and fillers, but some people react to the capsule material itself.
- *Tablets* tend to be the least costly and the easiest to swallow. However, they must be made carefully so they dissolve quickly. They also require binders and fillers to hold them together properly. Grind or chew tablets if you notice them coming through whole in the stool.
- *Powders*. These can be good. However, to take them one may have to mix them into a drink that is usually a bad food combination and mixes water with food items, which is not desirable because it upsets digestion and the drink is usually too yin.

SUPPLEMENT SAFETY

Some medical authorities believe that food supplements are dangerous and should be regulated the same way as drugs. Regarding the possible danger, the annual report by the American Poison Control Centers reveals that the number of reports of harm due to supplements each year is usually zero, or occasionally one or two incidents per year. In contrast, poison control center reports for drug-related problems, including death, number in the tens of thousands each year, and this does not count most problems that arise in hospitals and clinics. *The truth is that nutritional supplements are extremely safe, among the safest consumer products on the market.*

OTHER SUPPLEMENT TOPICS

Herbs. *Please do not use herbs with a development program.* The reasons are:

- *Toxicity.* Most, if not all herbs are naturally somewhat toxic or they would be eaten as foods. Many are stimulants, depressants and have other drug-like effects.
- *Contamination.* Most herbs today have too much toxic metals to be used on a regular basis. Chinese and East Indian herbs are among the worst in this regard. This includes even the highest quality brands of herbs.
- *Quality.* Herb quality varies greatly and it is difficult to separate the advertising from the reality. The quality of chelated minerals and vitamins is easier to control.
- *Cost.* Excellent quality herbs are often high in cost compared to vitamin products.
- *Yin.* Most herb preparations are very yin, and this is definitely harmful.

Protein drinks, smoothies, shakes, and cleansing products. Reasons we do not allow any of these with development programs are:

- *Horrible food combinations.* Most smoothies and drinks contain a number of ingredients that do not combine well in the stomach. They cause bloating and damage the intestinal lining.
- *Processed and chemicalized.* Many drink powders contain dried milk powder, egg powder, sugar and chemical flavors that are quite toxic, or at least of low quality. They tend to be processed foods that are less nourishing than whole, fresh foods.

- *Extremely yin.* Any food product that is powdered and isolated is much more yin. At the present time, yin means harmful because the bodies are already too yin.
- *Spoiled.* Green superfood powders and other powders can spoil quickly, become rancid and lose their potency.
- *Sugary.* Most smoothies contain honey, sugar, fruit or juice. It is all too much sugar.

Food bars. Most of the objections to protein powders and smoothies apply to food bars, as well. Most are too sweet, contain bad food combinations, and many contain foods that are not recommended such as peanut butter, dried fruits, nuts and seeds.

Food-based vitamins and minerals. These supplements contain or are made mainly from foods. We like some of them and use them. Others are not helpful for these reasons:

- *The premise that isolated nutrients should be combined with foods is incorrect.* Two reasons for this are 1) supplements are designed to be taken with food, so food is already present with it; 2) the foods used in the tablets often compete for absorption with the primary nutrient, making food-based products less effective. For example, one company sells a zinc liver chelate. However, liver contains a lot of copper that interferes with zinc absorption.
- *Low doses.* The nutrient doses are usually too low, which requires more tablets. This increases the cost and makes supplement programs less convenient.
- *Ignorance and false claims.* Food-based product companies too often lie about their products, suggesting their products are better absorbed or work better, when this is not the case at all. For example, a prominent supplement company advertises that their all-natural vitamin C nourishes the body, while standard ascorbic acid made from corn just stimulates the body. This is simply untrue. Isolated ascorbic acid will lower copper, chelate heavy metals, rebuild cartilage, assist the adrenal glands, and more. Another company claims that magnesium stearate found in some vitamin tablets is derived from hydrogenated, pesticide-laden cottonseed oil. We checked with the manufacturer, and learned that magnesium stearate can be made from palm oil that is not sprayed and not hydrogenated because it is a naturally saturated fat at room temperature. One must be on guard against such false claims or accusations.
- *No metabolic packs.* At present, no food-based vitamin companies offer the correct metabolic formulas for fast and slow oxidizers. Instead, one must combine four or five products. This is quite cumbersome, more costly and not as good.
- *Allergic reactions.* Foods in whole food products can cause allergic reactions. Common examples include fungal-based amino acids, and wheat germ and oat flour that contain gluten. As a general principle, the simpler and less complex the product, the better.

Probiotics. We rarely need probiotics with development programs if one eats lots of cooked vegetables. However, they are helpful in a few instances. For example, if one eliminates old antibiotics from the liver, they can kill off the natural intestinal flora. In this case, replacing the flora quickly can be helpful and may stop diarrhea.

Two problems with probiotics. 1) As one heals and develops, the body will go through phases in which it requires different intestinal flora or bacteria. It is very difficult to know which bacteria are needed. We find that just picking out a probiotic at the health store can cause problems for this reason. 2) Many probiotic foods are toxic and actually dangerous, even if they

give you energy. For example, kombucha tea and fermented vegetables often contain **aldehydes**, an important class of liver toxins.

If one needs a probiotic, we suggest miso soup, plain goat yogurt, kefir or sauerkraut. **Do not take other probiotic foods or probiotic pills.**

Anti-oxidant therapy. We do anti-oxidant therapy with cooked vegetables. This method is much more yang than isolated anti-oxidant nutrients. Development programs also remove the deep *causes* of oxidant damage, which are often the “amigos” – oxide forms of iron, manganese and other minerals. Other programs we know about cannot do this.

Enzyme therapy. We recommend that everyone following a development program take a digestive enzyme that contains ox bile and pancreatin. The animal-based products are more yang. Otherwise, we do not use large quantities of enzymes for the following reasons:

- *Very yin.* Plant-based enzymes are fungal in origin, which is extremely yin.
- *Not deep enough correction.* While enzymes can be helpful for inflammation and other conditions, they do not correct body chemistry at deep levels.
- *Costly.* If possible, we like to keep the cost of the program low.

Individual amino acid therapy. Taurine and lysine are used in some development regimens. We rarely recommend the others because they are:

- *Often of fungal origin, which causes reactions in a few people and they are too yin.*
- *Not needed if one takes GB-3 and eats enough of the right kinds of protein foods.*
- *Costly.* If possible, we like to keep the cost of the program low.

Intravenous or IV and intramuscular or IM supplementation. Development programs, so far, do not require IV or IM supplementation. These methods are more invasive. They also often upset body chemistry because they bypass the normal buffering mechanisms of the body that usually regulate how much of a nutrient one absorbs.

Supplements for vegetarians. A few clients refuse to take any supplements that contain animal-derived products. This will interfere with the results of a development program. Here are substitute food supplements we can recommend:

- *Instead of a metabolic pack:* take nutritional yeast or a vegetarian multiple, **but only if it has similar ingredients.** One must match the ingredient list as much as possible.
- *Instead of fish oil:* take flaxseed or hempseed oil. Buy it in capsules to keep it from going rancid.
- *Instead of thyroid and adrenal glandular support:* We don’t know a good substitute. Do not substitute herbal products, which are somewhat toxic and don’t work as well.
- *Instead of an animal-derived digestive aid:* one can take vegetable enzymes, though they are much more yin and therefore not as good.
- *Instead of animal fats:* eat almond butter, olive oil, flaxseed oil, hempseed oil or a little palm oil.
- *Instead of vitamin D3:* use vitamin D2 or ergocalciferol, but it is not good and a little toxic.
- *If no animal protein:* eat nutritional yeast, eggs, goat yogurt, beans, seeds and nut butters.

5. DETOXIFICATION

*Thousands of New York City rescue workers who helped in the cleanup of the World Trade Towers disaster suffered from a constant cough, chronic bronchitis, inability to breathe at times, fatigue, weakness and vision problems. Drugs had been tried with only temporary help. Other methods failed as well. However, over 500 fire fighters who underwent an intense sauna therapy program for a month or more **all** reported significant improvement in their health. (reported in **The Townsend Letter for Doctors & Patients**, April 2006)*

Detoxification is one of the most critical body functions. This chapter concerns how to enhance this natural body function. A special detoxification protocol was not a part of Dr. Eck's program. However, he understood it well and I believe he would be delighted that I encourage a detoxification regimen as part of all development programs. Reasons why special detoxification procedures are very helpful today include:

- *The eliminative organs function poorly in many people, even in children, due to dietary imbalances, stress, poor health and other reasons.*
- *The colon, the most important eliminative organ, is often the one in the poorest condition.*
- *Excessive sympathetic nervous system activity inhibits detoxification in many people.*
- *Most people's skin is very toxic and congested, thanks to bathing in fluoride and chlorine, the use of toxic soaps and skin lotions, and even from wearing heavy or synthetic clothing.*
- *Coffee enemas, and near infrared saunas, in particular, have many subtle and fabulous benefits such as improving liver function, circulation, hydration and oxygenation of the body.*

Less safe detoxification methods to be avoided. These include ionic foot baths, most clay baths due to aluminum toxicity, repeated liver flushes with nothing else, fasting for more than a few days, most juice cleanses and cleansing diets, and long sessions in traditional saunas or sweat lodges unless they are supervised very carefully and medically.

WHAT ARE TOXINS AND WHY DO THEY MATTER?

Toxins refer to anything that does not belong in the body. They may be naturally-occurring or man-made. They may come from outside the body or may be generated within. They include some minerals that are poisonous, millions of chemical compounds, living organisms such as bacteria, and some electromagnetic energies such as those used in cell phones.

Environmental toxins. These include all the familiar poisons such as metals, plastics, solvents, pesticides, ionizing radiation, dental amalgams and others. I will not dwell on them further at this time as they have been mentioned in Chapter 1.

Autointoxication. Many toxins are produced inside the body. They are generally ignored by the medical profession, but are among the most important. For example, indols, skatol, and cadaverine are products of the putrefaction of proteins. Alcohol, acetaldehyde and other toxins are produced by the fermentation of sugars by yeast organisms such as *candida albicans*. Both are common sources of liver toxicity. A foul-smelling stool should make one wonder what toxins are being produced in the intestines. Another critical group of toxins produced inside the body are called *endotoxins* and *exotoxins* made by bacteria, fungi, viruses and parasites living inside the body. These may give few or even no symptoms while they slowly poison the blood stream. Cancers also produce endotoxins that circulate throughout the body, regardless of the primary tumor site. Carbon dioxide, lactic acid and other chemicals are also quite toxic and are produced within the body.

Toxins produced when healing occurs. Deep healing programs often produce some toxins when dead and diseased tissue is broken down by phagocytes, lysozymes and other natural methods of tissue destruction. These toxins must be eliminated quickly or healing reactions occur as the poisons accumulate in the tissues. This is an important reason for doing extra detoxification procedures such as sauna therapy and coffee enemas or colonic irrigation.

Mental and emotional toxins. Harmful beliefs, and negative attitudes and emotions can be as deadly as any virus or bacteria. Harmful beliefs include selfishness, negativity, fixations, hatred for anyone or anything, and even excessive seriousness. Toxic emotions include uncontrolled anger, lust, greed, resentment, anxiety, and severe depression.

The philosophy of detoxification. The concept that toxic substances cause disease is very ancient. It is mentioned in Greek and Roman medical texts, and even older writings as well. Ancient Chinese medical books speak of ‘harmful chi’ and contain other references to toxins that cause illness. Herbal medicine and natural healing methods have emphasized toxin removal for thousands of years. Baths, enemas, poultices, emetics, laxatives, purgatives, skin brushing, cleansing diets, sweating and other methods for eliminating poisons are integral parts of these sciences. Traditional or allopathic medical care emphasizes biological toxins such as viruses as a cause of disease. However, they overlook and often deride the broader concept of toxins and their role in all illness. In fact, many of their remedies and procedures such as most drugs and surgery are toxic themselves, and can easily contribute to ill health for this reason.

What parts of the body are mainly involved in detoxification? The entire body is deeply involved. It is not enough to enhance the so-called eliminative organs such as the large intestine, liver, kidneys, lungs and skin. Each cell must continuously eliminate toxins in order to function properly. This depends on the condition of the cell membrane, the mitochondria and most cell structures. Also, the circulatory and lymphatic systems play indispensable roles to carry away cellular wastes. Glands such as the thyroid, adrenals, testes and ovaries must also function well as regulators of the eliminative organs. The autonomic nervous system also plays a critical role. The parasympathetic nervous system enhances the activity of the eliminative organs. Excessive sympathetic nervous system activity, which is very common today, diminishes the activity of these organs.

DETOXIFICATION WITH DEVELOPMENT SCIENCE

One of the key advantages of development is its ability to safely, comfortably, inexpensively and often quite easily eliminate many toxic metals, toxic chemicals, radioactive particles and biological toxins. In addition, mental and emotional toxins are slowly brought up to the surface of the mind for processing and elimination as well. Over a dozen methods are used in a coordinated fashion at the same time to detoxify the body. These include:

1. Reduce many toxic exposures. This is done via a healthful diet, proper drinking water and a healthful lifestyle. Chapters 2, 3 and 4 discuss basic ways to do this.

2. Increase adaptive energy. This comes from balancing the oxidation rate and the major mineral levels and ratios. It makes far more energy available for detoxification and healing, and is a key difference between development and symptomatic approaches to detoxification.

3. Increase rest and sleep. This is also critical for maximum detoxification.

4. Remove the need for physical and emotional compensations. Many toxins act as compensatory mechanisms. For example, the “three amigos” (iron, manganese and aluminum, all in bioavailable form) appear to boost adrenal and perhaps thyroid activity in most slow oxidizers. Removing the need for these compensations is what appears to allow the toxic metals and some chemicals to be removed so easily and quickly. It also helps prevent them from re-accumulating, which can happen with other methods.

5. Balance the qualities of yin and yang. Balancing these subtle qualities strengthens the body and increases the available adaptive energy. This is discussed later in this chapter.

6. Balance the autonomic nervous system. Detoxification is primarily a parasympathetic activity. It involves the parasympathetic organs such as the liver, kidneys and intestines. Any therapy that promotes parasympathetic activity or inhibits sympathetic activity will assist detoxification greatly. These include:

- *Enemas and colonic irrigation.*
- *Glandular extracts from the pancreas, liver, kidney, thymus and others.*
- *Meditation and relaxation therapies, and psychotherapeutic techniques that promote relaxation.*
- *A healthful diet free of stimulants such as excitotoxins like MSG and aspartame.*
- *Supplemental calcium, magnesium, zinc, choline, inositol, and sulfur-bearing amino acids can help relax the sympathetic nervous system.*
- *Removing toxic material from the body that irritates the central nervous system is very helpful.* For example, iron, manganese, aluminum, copper and other metals, when in oxide forms, appear to act as oxidants and irritants that keep the body in a sympathetic state.
- *Sauna therapy, especially when done upon awakening in the morning or just before bedtime.*
- *Anti-anxiety herbs and other remedies may also be helpful unless they have toxic side effects.*

7. Reduce harmful stress of all kinds. Stress interferes with detoxification for several reasons: 1) The body must use up a lot of energy adapting to stress, 2) stress of any kind activates the sympathetic nervous system, which impairs detoxification and 3) stress depletes many vital nutrients such as zinc and magnesium needed for detoxification, and 4) stress weakens the body greatly, making detoxification much more difficult.

8. Replace less preferred minerals with more preferred minerals. This is an aspect of restoring the body's enzyme systems. In order for detoxification to proceed rapidly and safely, one must replace the less preferred or toxic minerals in millions of enzymes with the more preferred vital nutrient elements such as selenium, chromium, zinc, magnesium and others.

9. Support the eliminative organs. Development makes use of at least a dozen methods to improve their functioning. These range from improving the diet, drinking the right water and resting more to colon cleansing, saunas and other detoxification procedures.

10. Increase the body temperature to help normalize enzyme activity. Many adults have a low body temperature due to fatigue, illness or decreased thyroid or adrenal activity. Increasing the oxidation rate and the sauna's heat and infrared rays help normalize this.

11. Deep cleansing of the liver and large intestine with coffee enemas and/or colon hydrotherapy.

12. The use of antagonists. These are specific nutrients or compounds that oppose or compete with toxic substances. They may compete with toxic metals for absorption, for example. Some antagonists replace the less preferred minerals in enzyme binding sites. Still others grab on and dislodge toxic metals from their storage sites in the body. These are called chelators, a special type of antagonists. Another type somehow are able to escort toxic metals out of the body or in other ways facilitate their removal.

For example, calcium, zinc and selenium are cadmium antagonists. Zinc, manganese, vitamin B6 and sulfur, among others, antagonize copper. Administering extra choline may help reduce the effects of pesticides that are cholinesterase inhibitors. Antibiotics and antitoxins may be considered antagonists for bacteria or other toxins. For infections, however, development uses safer and often more effective agents such as colloidal silver and bee propolis.

13. Clearing emotional and mental toxins. In some patients, emotional blocks will stop detoxification almost as badly as will constipation. Methods that can help release them that are part of development programs include reducing the physical toxin level, enhancing overall vitality, improving memory and cognition and what I call *personality integration*. In addition, counseling, meditation, relaxation methods, biofeedback, hypnotherapy, imagery and other methods may help as well.

14. The right type and amount of drinking water. Distilled water is often called "hungry water". This means it contains very few minerals. As a result, it holds and helps remove from the body many minerals and other toxic substances. This can be used to assist detoxification, though it is not for long-term use as it will eventually remove too many vital minerals as well.

15. Uncovering layers of toxins. Many toxins are buried deeply within body organs. Development slowly brings up the layers to be uncovered over a period of several years or more. I know of no other method that can uncover and remove these deeper layers of toxicity.

The allopathic concept of identifying a single toxic metal as the cause for a symptom is only partially effective, in my experience. In fact, everyone has most toxic metals in their bodies. In addition, they are layered and often the deeper deposits will not be revealed on any tests, even hair tests, until they begin to be uncovered.

16. Eliminate many chronic infections. Infections produce powerful toxins and they use up the body's vitality fighting them. Eliminating infections thus frees up a lot of adaptive energy for detoxification. Methods used to eliminate them include:

- *Heating the body with saunas or hot baths.* This is a simple form of fever therapy.
- *Balancing the body chemistry to enhance adaptive energy.*

- *Removing toxic metals and replenishing missing vital nutrients.*
- *Coffee enemas and colon cleansing are also very helpful to restore liver function.*
- *Improving the sodium/potassium ratio, in particular, along with other mineral imbalances.*
- *Improving circulation, oxygenation and hydration.*
- *Healing emotional traumas and other issues that weaken the immune response.*
- *At times, using specific anti-microbial agents such as colloidal silver, bee propolis, extra vitamin C and A, or rarely others.*

17. Parasite cleansing. Some people have intestinal parasites that can produce toxic substances in the intestines, and they interfere with proper digestion and absorption of nutrients. These are slowly eliminated on development programs. Only rarely is specific therapy for them required. Methods used to eliminate them with development are:

- *GB-3. Pancreatic and liver enzymes in GB-3 digest many of them and weaken them, as well.*
- *Daily use of a near infrared sauna can be very helpful to stimulate circulation and raise the body temperature. This weakens some parasites.*
- *Coffee enemas and other colon cleansing can dislodge many parasites.*
- *Increasing the vitality of the body by balancing the oxidation rate and replenishing many minerals and vitamins helps greatly to make the body less hospitable to all parasitic organisms.*
- *Herbal remedies may be helpful, but usually are not needed and will not work very well if the vitality is low or if there is too much debris for parasites to feed on in the intestines.*

18. Other therapies when needed. Development is not intended as a complete healing system, and I do not know of any such system. All healing arts have their place. Methods such as bodywork, chiropractic, foot reflexology, acupressure, massage, jin shin jyutsu and acupuncture using needles may all assist detoxification at times.

Rarely, a person requires a medical drug for sleep or something else until the body can heal enough that it is not needed. However, the toxicity of drugs, surgery and other medical methods make them unsuitable unless all our other methods are not sufficient.

19. Rare use of natural chelating agents. Chelators are a specific group of antagonist substances. Dr. Eck found that the use of EDTA, DMPS, DMSA and other synthetic chelators tend to reduce the sodium/potassium ratio, a sign of lowered vitality. He advised against the use of these agents for this reason. I have also found this to be true. Other problems with all chelators, both natural and synthetic ones, include:

- *Removal of some vital minerals along with the toxic ones.* This causes mineral deficiencies.
- *Unbalancing body chemistry.* Chelation is not that discriminating, so it tends to upset the delicate balance of the body's minerals. Just "loading" the person afterwards with vital minerals and vitamins will not restore the balance. In fact, replacement of these important elements can be time-consuming and difficult.
- *A symptomatic approach.* Chelation is a shotgun or symptomatic approach to toxic metal removal. This may be helpful in acute poisoning cases, but it is used for far more than this. It is not necessarily bad, but it is not gentle or discriminating.

- *Redepositing metals in vital organs.* Synthetic and natural chelators can dislodge toxic metals from safe storage sites and a few may then redeposit in more vital areas such as the brain. This can cause some clients to become even more ill.
- *Renal toxicity.* Chelation drugs may be hard on the kidneys, which must bear the burden of eliminating the chelated metals and the drugs themselves.
- *Forcing metals out of the body in an unnatural order.* This is a subtle, but important problem with chelation. The body has its own order of detoxification and healing. Development honors that order and sequence. This may be less rapid, but tends to be much safer and allows healing at much deeper levels as well.
- *Reaccumulation problems.* Because the body's natural order is not respected with chelation, toxic metals often reaccumulate. This necessitates repeated chelation therapy and negates some of its benefits.
- *Inability to penetrate to the deepest levels.* Most chelators act mainly at the level of the blood and surrounding tissues. They do not penetrate as well into the brain, in some cases, or into deeper tissue layers. Development uses a different and gentler approach, as described above, that can and does penetrate into the cells at much deeper levels.
- *Yin.* Chelators, both synthetic and natural, are quite yin, which subtly unbalances the body.
- *Cost.* Intravenous chelation is much less costly, much safer and more effective than bypass surgery. However, it is considerably more costly than development, especially considering that the latter does much more than simply remove toxic metals.

Most important, chelation is simply not needed most of the time. The only exceptions Dr. Eck employed are vitamin C up to about 1000 mg daily, sulfur-bearing amino acids found in taurine, garlic and black radish, and molybdenum on fairly rare occasions. I have never recommended cilantro extracts, chlorella, bugleweed, yellow dock, isolated alginates or drugs such as penicillamine, deferoxamine, EDTA, DMPS or DMSA, either orally, IV, topically or through rectal suppositories.

Possible uses of chelating agents in development science. Intravenous or other chelators may have a place with some advanced cases of multiple sclerosis, lupus, amyotrophic lateral sclerosis and possibly other degenerative conditions that often have to do with metal toxicity. As these conditions advance and worsen, a client's vitality may become so low that he cannot respond to a development protocol. By using chelation for a while until a person is in better condition, one might save a life. More research is needed on this topic.

MISCELLANEOUS DETOXIFICATION TOPICS

All toxins can remain stored in the liver and elsewhere for years. This includes all prescription, over-the-counter and recreational drugs, along with toxic metals and toxic chemicals such as anesthesia drugs. Even a parent's cigarette smoke (contains cadmium and other toxic metals) and residues from contaminated work clothing are stored in the body for 20 or more years, especially if a person's health is impaired, as is often the case.

Upon undertaking a development program, medications and other toxins from long ago will be eliminated. One may smell or taste them, or even experience their pharmacologic or toxic effects to a slight degree. This happens, at times, because, when liberated from storage tissues, they circulate in the blood a short while until they are excreted through the urine, bile or other routes. This can give rise to odd symptoms. For example, one may suddenly smell

cigarettes, even though one has not been exposed to nicotine for years. One may experience a caffeine-like rush if a stimulant drug is released, or feel extremely tired if a sedative is released.

YIN AND YANG DETOXIFICATION. All methods of detoxification are either more yin in nature or more yang. This is a vital topic, though a bit esoteric. Before discussing it in depth, here is a brief background on this important healing factor and modality.

What is yin and yang? These refer to specific qualities of life or physical existence on planet earth. Yang is more male, contracted, hot, and centripetal in direction. Yin is more female, expanded, cool and centrifugal in direction. For example, a hot, dry desert climate is very yang, while a cool, damp one is more yin. Similarly, a healthy body should be slender, warm and athletic. This is a more yang condition, for both men and women.

Why is the idea of yin and yang so important? The reasons include:

- *Health is more than just filling the body with nutrients and removing toxins.* Most illness produces a colder, more expanded, much more yin body. Certain infections such as fungal ones are far more yin and cold than others such as bacterial infections that cause high fevers. In fact, yin is a disease in itself that is very common today.
- *A better yin-yang balance greatly increases adaptive energy, restores negative feedback loops, restores some enzyme systems and greatly increases the energy efficiency of the body.*
- *True fast oxidizers, of which there are few today, are much more yang, while stress fast oxidizers and slow oxidizers are more yin.* Very slow oxidizers with low sodium/potassium ratios are extremely yin. This is just one reason why continuously balancing the oxidation rate is vitally important in development.
- *Balancing yin and yang is also essential for mental or spiritual development.*

Most bodies are very yin today. The reasons for this include:

- *Poor overall health and fatigue are the most important factors.*
- *Higher levels of ionizing radiation are another critical factor today.*
- *Toxic metals and most toxic chemicals are very yin and prevalent in our bodies.*
- *Negative attitudes and victim thinking cause a person to be more yin.*
- *Bodies filled with patent medicines and recreational drugs are far more yin in most cases.*
- *Electromagnetic fields from cell phones and computers have a very yin effect.*
- *Diets of refined foods, vegetarian diets, eating fruits and sweets, using alcohol, and taking most medical drugs make people much more yin.*

Healing methods must be adjusted to take into account the yin nature of most bodies today. Many healing methods, including vegetarian regimens, acupuncture, acupressure and others were developed at a time when the bodies were not exposed to as many toxins, refined food diets, medical drugs and radiation as they are today. Development, in contrast, is designed specifically for the challenges of the 21st century.

Yin and yang detoxification. *Yin detoxification methods flush toxins with cool and watery energy.* They work by slowing down an overheated metabolism and include raw food diets, fruit and juice fasts, and vegetarian diets. Other yin detoxification methods are high-dose, and most intravenous and oral supplement therapies, cold baths, some enemas, colonic irrigation, chelation drugs, some cleansing herbs and some acupuncture techniques. Most synthesized supplements and, in fact, all manufactured products such as tablets, powders and liquids are

more yin. Animal-based products tend to be much less yin than synthesized or vegetable-based products, as a general rule.

Yang detoxification methods heat, activate and contract the body to enhance toxin removal. These methods include more rest and sleep within limits, hot saunas, coffee enemas, infrared therapy and hot baths. They also include diets with kelp, sea salt, cooked meats and vegetables, especially root vegetables. For a more yang diet, strictly avoid very yin foods such as all sugars, fruit juices, most fruit and most uncooked fruits and vegetables.

Balancing yin and yang is the reason that I recommend mainly cooked food and more meat. It is also why raw foods, most fruit, all juices except some carrot juice, vegetarian diets, and nightshade and other vegetables that are really fruits are not recommended. It is also why Dr. Eck found that animal-derived glandulars and animal-based digestive products are important. It is also why some products such as calcium, magnesium and zinc are so important, as these are more yang than other elements. Many more details of the program involve the concept as well.

Most doctors use yin detoxification methods without knowing it. These methods work to a degree, but yang methods are much safer and more effective in many cases today because the bodies are so yin. For example, vegetarian diets and raw foods are not as helpful as they were 100 years ago, when many of the wonderful books about them were written. Similarly, most herbs are very yin. This is due in part to their nature, and, in part, due to metal toxicity and other problems with them today. For this reason, herbal methods are not as safe or effective today as they were 100 years ago when brilliant people such as Jethro Kloss, author of *Back To Eden*, wrote about them. Chelation therapy, bio-identical hormone therapy, some oxygen therapies and many others are also more yin as well. It means there will often be side effects from them, even if they are not obvious. More information about the yin-yang balance is in an article at www.drlwilson.com entitled *Yin And Yang Healing*.

DETOXIFICATION FOR GENETIC IMPROVEMENT

The news reports daily that a defective gene is the cause for many health conditions. Much less often reported is that nutrients are required to turn on genes, and that toxic metals and other toxins can block genetic expression. *Epigenetics* is the study of the effect of the environment on genetics. It is the subject of an excellent book by Bruce Lipton, PhD, *The Biology of Belief*. He shows clearly that while genetics affects our bodies, environmental factors such as nutrition and environmental toxins affect the genes powerfully.

Defective genetic expression is often the underlying cause of birth defects and many other genetic problems. These defects are called *polymorphisms* in the field of genetics. This is an important aspect of genetics that is almost totally ignored today. It helps explain why those with a genetic disorder such as Down's syndrome can often be helped dramatically by development and other natural therapies. By improving the nutritional balance and biochemical vitality of the body, it offsets some of the genetic imbalances. Children with this disorder begin to learn faster and their distinct facial features even change back to normal to some degree.

Mothers-to-be need assistance. Epigenetics and polymorphisms also help us understand why all teenagers, especially mothers-to-be, would be very wise to undergo a development program *before becoming pregnant*, or at the very least once they become pregnant. This would help replenish hundreds of nutrient compounds and reduce their body load of toxic metals and

toxic chemicals greatly. This can undoubtedly help prevent birth defects, as well as make childbirth safer and reduce illnesses in their children.

True prenatal care. So far, when a pregnant mother follows a development program carefully, compared to their previous pregnancies, the pregnancies and the births have been easier, and the health of the babies better, in most cases, than previous children. This has not been studied rigorously, however, and it needs to be done. I hope that our prenatal care system will change, as it is one of the worst features of traditional medical care. It is simply not enough to make sure a woman does not have diabetes or some other serious disease and then to hand her a simple diet sheet and a pre-natal vitamin that is often not correct for her body type or her needs. This is an important area that I hope others will research, as it has so much to do with the future of mankind.

Also, prenatal care must begin sooner because it takes several years, at least, to improve the health of young women. Ideally, it should begin at birth. However, at the very least it should begin at puberty by teaching girls, in particular, excellent eating habits, healthful lifestyles and how to care for themselves in every way. Today, in contrast, teenage girls and young women are allowed and often encouraged by the media and even parents and friends to:

- *Eat junk foods day and night, much of which is nutritionally bankrupt and contains toxic chemical additives as well.*
- *Stay up late and indulge in other destructive habits such as smoking and drinking alcohol.*
- *Take dangerous medical drugs such as birth control pills, the patch and others.*
- *Adopt loose morals that cause sexually transmitted diseases in at least 25% of young women between the ages of 16 and 25. Some say that 90% of sexually active adults have STDs.*
- *Ignore nutritional testing before or when they become pregnant. Instead, pregnant women are prescribed a vitamin tablet that is usually of mediocre quality and not based upon their individual needs. All pregnant women can benefit from a development program.*

Born toxic. Most children born today are deficient in zinc and many other micronutrients. They also have excessive levels of many toxic metals. This is obvious from their hair mineral analyses, even when the baby has never touched regular food. The toxic metals and many toxic chemicals pass right through the placenta from mother to child during pregnancy. This is a major, and generally ignored, cause of autism, ADD, birth defects and many cases of delayed development as well.

These are *congenital* imbalances, meaning present at birth but not caused by defective chromosomes or genes. *Congenital mineral deficiencies and congenital metal toxicity* should become household words because they are so important. When vaccinations, refined food diets, commercial formula and stress are added, many children simply cannot overcome the combination of these insults to their growing and fragile bodies. An entire volume could be written about congenital imbalances as revealed on hair mineral analyses.

Detoxification programs during pregnancy and lactation. Initially, I was skeptical about placing pregnant women on development programs. I wondered if the growing fetuses would be adversely affected. However, after almost 30 years of personal experience, as well as checking with other development practitioners, they appear to be very safe.

The safety record with development during pregnancy, to the best of my knowledge, has been 100%, provided the program is followed well. I have helped many pregnant ladies have much healthier pregnancies and healthier babies as well. Another benefit of development for pregnant and lactating mothers is it can improve the quality of their breast milk so that a baby will continue to want the milk for a longer period of time.

Breastfeeding and detoxification. Development programs while breastfeeding are excellent, but require extra care in some cases. Occasionally, an infant will develop colic due to one of the supplements or due to the elimination of a toxin that may find its way into the breast milk. This can usually be avoided or mitigated by taking fewer supplement doses or just fewer products. The client may have to try each product one at a time to discover if one or another of them is causing a reaction in a breastfeeding child. Another idea is to take one's nutritional supplements soon after breastfeeding so the supplements will be thoroughly assimilated before the next breastfeeding. Rarely, a woman must discontinue her supplements while breastfeeding.

Detoxification in infants and children. Children do exceedingly well with development programs. Young babies, for example, may need just one or two products, and few need more than three products. Doses must be adjusted based on a child's age and weight, although children can often take a little more than their weight or height would indicate.

Children are much less toxic than adults. For this reason, most do not require sauna therapy or coffee enemas unless quite ill. However, the number of sick children is growing quickly today. The causes include congenital and genetic problems coupled with the use of vaccines, medical drugs and even random vitamin and natural hormone treatments. Dr. Stephen Edelson, MD, author of *Conquering Autism*, placed children as young as two in saunas with no apparent difficulties. I don't recommend sauna therapy until at least age 5 or so. Younger children require much closer supervision for all detoxification procedures.

Older children and teens benefit greatly from saunas for many reasons. The sauna clears their teen acne, making for a beautiful complexion. It also relaxes them and removes many toxins quickly. It also seems to enhance their emotional maturing process in some cases, especially a near infrared light sauna rather than any other type of infrared or regular sauna.

Cautions with detoxification in young children, in particular, are:

- *Children are growing fast. Never deprive them of protein, plenty of cooked vegetables, extra omega-3 fatty acids, iodine in the form of kelp or other source, and other essential foods.* If they won't eat vegetables alone, cook them in soups, and give them about 2-10 ounces of carrot juice with a little spinach or other greens added. One can also put dressing on them made of plain yogurt, plain cheese, almond butter mixed with a little water, or simply put some butter and a little sea salt on them. They can also be given Veg-Easy or Juice Plus, which are dried vegetables in a capsule. The green "superfood" powders are not quite as good because they must be mixed with something sweet in a smoothie and because, unlike capsules, they may go rancid much faster.
- *Be very careful with all herbal products, as children are much more sensitive to them than most adults.* Too many doctors give babies or children adult doses of vitamins or worse, herbs, many of which contain small amounts of toxic metals. To be safe, avoid the herbs except for those listed as safe in Chapter 4.

- *Development supplement programs from the computer at Analytical Research Labs may need more adjustments for some children.* This is more advanced training and beyond the scope of this volume. Reasons for this are children's variable weight and height, as well as other considerations such as a child's health status and specific mineral patterns.

Detoxification in older or very ill people. This arena also requires extra care. Older people have less ability to remove all toxins due to lower vitality and often due to a more sluggish oxidation rate. Therefore, use extra caution, and go slowly and gently with them. Some older people are much more vital than others, so it must be handled individually. However, few people over the age of about 65 to 70 should be using the sauna more than once daily or doing coffee enemas more than 1 every other day. Many do well on simpler supplement programs. Distilled water is very helpful for them, and Protocol or the Kelley program can help cancers.

DETOXIFICATION CAUTIONS

- *Avoid most fasts, especially any over about 2-3 days.* These are quite unsafe, in my view. I worked as the medical director at a natural hygiene fasting spa for several years. I found that the bodies are so toxic, so yin and so depleted today that books written about fasting 50 years ago, as most were, no longer apply. Clients who consult me after fasting are often more depleted and worse off than before the fast, although some symptoms may have improved.

The only exceptions may be a water or carrot juice fast for up to a week to reduce 1) a very high blood sugar, 2) a very high blood pressure or 3) perhaps at the beginning of a weight loss program for some people. However, this is unnecessary and will upset some people's blood sugar and other aspects of body chemistry.

- *Avoid most herbs and herbal cleanses.* Among products that can be somewhat toxic are cloves, wormwood, black walnut, yellow dock, bugleweed and other commonly used herbs. Even safe herbs may contain small amounts of toxic metals and other impurities that are hard to trace, but cause problems eventually if used continuously for more than a few weeks.
- *Avoid putting salt of any kind into drinking water.* This removes some toxins. However, it also unbalances the macrominerals and causes subtle mineral losses that may take months to notice and are difficult to correct.
- *Cleansing diets and other cleanses.* These are not needed with development and slow a person's progress in almost all cases. Fruit diets and juice fasts, for example, are okay for a few days, but are very incomplete and cause more nutritional deficiencies. They are also too yin, similar to fasting, and they slow the metabolic rate in most cases. If you must do them, limit them to a few days at the most.
- *Clay baths.* Some doctors like these. However, clay is high in aluminum and other toxic metals. Once in a while they are fine and will pull certain toxins from the body. Definitely avoid long-term use and preferably use other methods.
- *Ionic foot baths* such as the Q2, Biocleanse and others are harmful and should be avoided altogether. They may be okay for those who are over 75, but no one else. They definitely remove some toxins, but also appear to cause subtle damage to the body's energy field.
- *Alkaline water.* Avoid all alkaline water. Symptomatic improvement may occur. However, two people have contacted me recently who have slowly developed severe metal poisoning from this type of water. See Chapter 2 for more details on the problems with alkaline water.

- *Swishing oil in the mouth.* This Ayurvedic method was great when the world was not totally polluted, as it is today. It will do little for modern toxic mankind, as it is just not powerful enough.
- *Detox foot pads* from Japan. These are an older herbal detoxification method. They are fine, but not very powerful.
- *Chelation.* This has been discussed earlier. It is not needed and usually harmful in subtle ways. All chelators remove beneficial minerals along with toxic ones. There is never any need for a “metal detox” product or program if one is using development science because all the toxic metals will gently be removed in a natural sequence without the problems these products can cause.

Cautions concerning the detoxification aspect of development include:

- *Retracing and healing reactions will occur.* If they do not, the program is not working correctly or the client is not following it well. However, they can be intense, on occasion. Chapter 45 discusses this very important topic.
- *Be gentle with children and older people, in particular.* Detoxification causes fatigue, emotional upset at times, and other difficult situations, particularly in those with impaired elimination, which is most people. It is like trying to flush poisons down the toilet, but the toilet is mostly clogged to begin with. Try to flush too much, and it will back up and make a mess. Have patience and go slowly when necessary. Once the body is working better, then detoxification becomes much easier.
- *Much more rest is critical.* This is the single most important rule if you wish to derive the most benefit from a development program.
- *Follow directions carefully.* Many doctors and clients try to speed up their cleansing or healing process by altering the program. Preferably ask about this. Simple changes, such as adding “detox products” or skipping procedures can easily ruin the program by unbalancing it in some subtle way.
- *When a challenging healing reaction occurs, consult someone familiar with them.* Most medical doctors do not understand them and may inadvertently make them worse rather than better. Practitioners must be available by telephone, usually, for this purpose.
- *Healing reactions can mimic diseases, and vice versa.* Most symptoms that arise during development programs are due to healing. In my experience, this is not the case with some other healing methods. At one time, I believed I was healing with a vegetarian regimen, until I realized that symptoms I was told were healing were, in fact, degeneration. Not only did I waste years on the program, but recovery took me over 10 years as well.

This can be very confusing even for the most seasoned practitioner. Most reactions pass quickly. However, a few will be vigorous and occasionally may take several weeks or longer to resolve. For example, an old ear infection recently left me dizzy and nauseous for several weeks. A retest hair analysis may assist a practitioner to decide if a change in the regimen is needed, or if the symptoms are benign and nothing to worry about. This critical topic is discussed in depth in Chapter 45.

6. MENTAL AND SPIRITUAL DEVELOPMENT

Dorothy, age 35, ate well and wanted to take good care of herself. However, she felt guilty and ashamed because her child has a birth defect. As a result, she races around from doctor to doctor with her 2-year-old. She is always tired, often anxious and has muscle cramps and back aches. Dorothy's hair analysis revealed a sympathetic dominance pattern, indicating a person who worries or is 'trying too hard' in some way. She also had a four lows pattern, another lifestyle pattern that is like a car spinning its wheels in the ice and getting nowhere. On a first hair analysis, it is often associated with someone who is very hard on herself to the point that she harms her health.

Dorothy began a development program and within a few weeks noticed she was much calmer, less anxious, and her muscle cramps subsided. Rebuilding her body chemistry is also allowing her to process her extreme feelings of guilt and shame for the first time since her disabled daughter was born.

Development includes and, in fact, emphasizes the balancing of the nervous system and the total development of the brain and mind. This goes far beyond symptom removal and also beyond focusing on physical and even mental health. It is about developing areas of the brain that most people do not normally use. In part, this is because they are not nourished well enough. It is also because as the nervous system becomes more balanced and more yang in Chinese medical terms, a person begins to change and mature in special ways.

Dr. Eck loved to speak about “enhancing your personality” with development science. He had many clients who functioned much better mentally, thanks to his development program. Just a few of the reasons this occurs include:

- *Restoring hundreds of nutrient minerals, vitamins and other substances to the body.*
- *Eliminating toxic metals and other chemical imbalances that damage the brain.*
- *Increasing vitality or adaptive energy.*
- *Relaxing and balancing the nervous system is also most helpful to control emotions and to think clearly and make better decisions.* Chapters 36 to 43 explain how this happens in much more detail.

OTHER ASPECTS OF MENTAL OR SPIRITUAL DEVELOPMENT

As wonderful as these healing changes are, I have since learned that there are other ways to facilitate mental and spiritual development, as well. Dr. Eck practiced some of these, but did

not write about them and include them as part of development programs. They are so important today that I want to discuss them in this short chapter on development.

Grounding and centering. Walking, gardening and working with one's hands help to keep a person's energy centered low in the body and within the body. Many people's attention is mainly "up in the head". Women often have this problem even more than men today because men tend to work with their hands more than women. Also, women tend to have higher copper levels that can make them more excitable and emotional. This also tends to keep them "up in the head". Meditation, relaxation, bodywork such as Rolfing or structural integration, working with one's hands and living in a quiet, rural setting are helpful to improve centering and grounding.

Meditation. Practicing the proper type of observation and concentration exercise is a time-honored way to calm the mind and the emotions, relax the body, increase the ability to concentrate and learn detachment or objectivity. However, most meditations I am aware of do not accomplish all these things and can even make a person worse in some ways. For this reason, I only recommend one particular type of exercise. It is discussed in Chapter 44.

Writing. The discipline of making oneself sit still and write articles and papers on various subjects helps hone and focus the mind, and assists in learning to organize ideas and to weigh the relative importance and truth of various ideas. It also helps one learn to express and communicate ideas in ways that others can follow and enjoy. It also helps a person to realize how well he really understands a subject, since it is difficult to write about something that is not clearly known.

Writing does more than this, however. It is a healthy way to express oneself creatively that also produces a product to be proud of that is uniquely one's own. It is an art, like painting or music, only writing is harder for most people, and a much more useful skill because of the need to communicate in modern society.

Study. Mental development also requires reading about and learning specific information, in my view. Dr. Eck, for example, was knowledgeable in many areas such as science, sociology, psychology, history, business and many others. Today, unfortunately, students in high school and college usually do not learn the correct material. The smart ones take courses in advanced calculus that they will never use, while subjects such as basic nutrition, basic physiology, psychology and political science are not required. Below I have listed some of the simple truths that I have tested and used over and over, and continue to question and refine as I learn more each day:

- **Very basic physics.** *Everything in this universe is a form of energy. Solid matter vibrates at a relatively low frequency, while sound, light and electricity just vibrate at a higher rate.* For this reason, every phenomenon is related to everything else and it is all a matter of vibratory rate or frequency.
- **Basic chemistry.** *Everything physical is just an arrangement of the 93 chemical elements.* The most important elements in our bodies are discussed in detail in Chapters 14-18.
- **Basic biology or the science of life.** *Systems theory is the basis of human and animal life.* In other words, life is a specific form of organization composed of various systems such as energy production, movement, elimination, reproduction and others. These work together

and communicate with each other to do all the things that living creatures do. Diseases are just malfunction in the system and are often caused by nutritional imbalances, even though this is not the conventional medical way of looking at it.

- **Basic physiology.** *An interplay of opposing forces is the basis for most or perhaps all of our body's functioning. These forces may be called hot and cold, expansion and contraction of the lungs, contraction and relaxation of muscles, etc.* Basic physiology is discussed in some depth in this book.
- **Basic nutrition.** *The human body absolutely requires hundreds of chemical substances found in foods and drinking water.* This is a basic truth of health and healing.
- **Basic psychology or personality studies.** *The mind is the crowning achievement of mankind.* It is somewhat like an advanced computer, but even better in many ways. *Thinking is the crowning achievement of the mind.* It is something that computers do not do very well compared to mature human beings.

The mind rules the body. However, biochemical and nutritional imbalances can give rise to all types of mental and emotional illness. This is so because the brain is a biochemical organ as well as a mental and spiritual one. The relationship between nutrition and the mind is the subject of Chapters 37-43.

- **Basic sociology or moral values.** *Human beings must adhere to certain rules to live happily with others.* This needs to be the most important area of study today for most people. This is why the Jewish and Christian religions, along with good parenting, help many people succeed in life. Chapter 2 of this book discusses this briefly.
- **Basic economics.** *Economics is the study of human behavior in society, particularly as it relates to work, money and the way people assign value to all goods and services in society.* What is called Austrian economics needs to be taught much more widely. Instead, what is taught in colleges and elsewhere is often a totally confusing mathematical science of macro and microeconomics that bears little resemblance to reality. To learn this important subject, I suggest subscribing to *The Freeman*, a publication of the *Foundation of Economic Education* or FEE (www.fee.org). This organization also offers online education, seminars and more. Authors like John Locke, Ludwig Von Mises, Frederich Hayek and Robert Higgs are also excellent to read.
- **Basic law and government.** *That government is best that governs the least.* This must be clearly understood to mean that laws should apply equally to everyone, meaning everyone must be treated exactly the same regardless of class, race or status. It also means that government must not micromanage people's lives. The main function of law and government is to protect the people's individual rights to live as they so choose. Another way to express this is that *government is force and is never benign or "good". It is necessary, but never good.* This is unfortunately not taught nearly enough today. Another related principle is that *power corrupts and absolute power corrupts absolutely.* This is why the American founders tried to limit government power in a hundred ways or more.
Another key principle is the American legal idea of *natural rights, or rights derived from the Creator of all life.* Behind this is the idea that we are all basically gods in the making. Thus, no one has the right to lord it over others for this reason, even if that person is more "educated", licensed, certified or otherwise feels superior.
- **Basic healing.** *This includes nutrition, retracing, the value of rest and sleep and much more that is the subject of this book. I hope one day the basics will be taught to every high school student.* An important aspect of healing that is rarely discussed but relates to mental

development is the correction of the brain architecture. In many people, the brain is slightly off-center or contorted. This can be due to falls, injuries or other reasons. The brain is actually a “tuning organ”, somewhat like a radio antenna. This is explained in Chapter 39. As a result, structural problems can affect one’s thinking and actions. Reflexology, cranio-sacral work, bodywork, chiropractic or other therapies can all help correct the brain architecture.

- **Basic spirituality.** *Human beings are not mainly physical, but instead are energetic or metaphysical creatures, for the most part.* The physical aspects of us actually derive from the metaphysical or energetic aspects. In other words, the visible world derives from a finer and invisible world. This is the essence of spirituality. It is not about a particular religion, though religions always talk about it. This means that everyone is “spiritual” whether or not they acknowledge it in daily life and behavior. Another way to say the same thing is that we are all souls who inhabit bodies for a period of time and then move on. This can be proven, but it does not serve certain interests for the people to know this, so it is ignored and even ridiculed in the general society.
- **The subtle bodies.** Human beings have a number of subtle or energy bodies that one can develop during one’s lifetime. Developing the subtle bodies leads to deeper healing and a much longer and usually happier life. Deeply removing toxic metals with development science appears to help the development of the subtle human bodies, something that I did not realize when I first learned this science.

Wisdom or maturity. These are the ultimate goals of development science, and the final destiny of all human beings. Western societies tend to value material success above wisdom. Many ancient cultures knew that life is much more than one’s material success. The materialistic focus of the modern world has built a technically advanced society. However, people are so exhausted and ill that it is time for all to slow down and look for deeper values.

Modern school systems do not teach much about wisdom, nor do they teach enough of the subjects listed above. This failing makes them much less useful for the person who wants to develop himself fully and become wise. Young people need to know this and not feel ashamed if they decide not to attend college, for example. It is not necessary, and may even be quite harmful because too many wrong ideas are taught. Also, the moral climate is horrible at most colleges and universities today in America, in particular.

The long road of development. Mental and spiritual development occurs automatically as deep healing takes place in the nervous system, particularly if one also works on and practices grounding, centering, the Roy Masters observation exercise, writing and study as outlined above. It is a slow and gentle process that takes a number of years.

As a result of the time and commitment required, many people don’t stay with it long enough, and many look for shortcuts. These include various religious and yoga practices, special meditations and others. These might help, but many actually slow the process by teaching methods and doctrines that are false or simply ones that applied years ago, but are not as important in today’s world. Chapters 10 and 40 discuss mental development in more detail.

7.

A VERY BRIEF HISTORY OF DEVELOPMENT SCIENCE

Joan, age 20, had almost complete alopecia or hair loss. Her first hair analysis revealed a four lows pattern, a sodium/potassium ratio of 0.8 (normal is 2.5) and a mercury level of 0.3 mg% (normal is about 0.02 mg%). She began a program and followed the diet and lifestyle suggestions well. She took her supplements only twice daily, and after two and a half months on this regimen her hair started regrowing all over her scalp. Hair loss is common today among young women, a very disturbing symptom. Copper imbalance, fatigue and, in this case, mercury toxicity may all be involved.

This chapter introduces the history and theory of development science. One can still use development science without understanding its theory. However, the theory is fascinating and is what separates this science from other healing methods. Without the intricate theory behind it, one may think it is just another way to suggest diets and nutritional products, which it is certainly not. It is a separate science, developed over a number of years with painstaking research on hundreds of thousands of people.

The founder of this science was Dr. Paul C. Eck, a very talented doctor and brilliant researcher who lived from 1925 until 1996. Dr. Eck entered a pre-medical program in his teens, but soon left to support his family. He eventually graduated from the National College of Naprapathic Medicine in Chicago, Illinois, USA. This is an eclectic medical college that teaches a variety of healing methods including nutrition and manipulation. Dr. Eck worked in various positions after graduation, including as a researcher for several pharmaceutical companies. He also worked for Sivad Bioresearch, then a leading producer of quality nutritional supplements.

In the early 1970s, he stumbled onto the new assessment method of hair tissue mineral analysis. His vast knowledge of biochemistry and physiology enabled him to help physicians to interpret the new test accurately. He soon developed quite a following among these physicians. Over the next several years he carefully researched minerals in the body and their interrelationships. He painstakingly correlated medical diagnoses with the readings on over 200,000 hair mineral analyses. His work was continually evolving as he began to understand the importance of not just the levels, but also the ratios and patterns on a hair mineral test. Dr. Eck drew on the research of at least a two dozen scientists in developing development science, which he sometimes called 'mineral balancing' and 'the new nutrition'. He also had a deep appreciation of quite esoteric concepts of health such as *teleology*, the study of healing intent, and *cybernetics*, the science of communication and control. Three of his most important mentors were George Watson, PhD, Hans Selye, MD and Melvin Page, DDS.

DR. WATSON AND THE OXIDATION TYPES

George Watson, PhD (1912-) worked as a researcher at the University of California at Los Angeles in the mid-twentieth century. He was researching odor responses when he noticed that one group of volunteers favored certain odors, while another group had an entirely different set of likes and dislikes. He wondered why there were two main groups of responders and began running blood and other tests on what he first called Group I and Group II individuals. Later, he discovered slight differences in serum CO₂ and serum pH levels of the two groups. He believed that one of the groups burned fats more efficiently, while the other group burned carbohydrates more efficiently. He renamed the groups *fast and slow oxidizers*. Dr. Watson also identified a third group he called *sub-oxidizers*. These were people who did not quite fit into the first two groups. They seemed to have more health problems and did not respond as reliably as the other two groups to his corrective measures. He used the word *oxidation* because it refers to the burning of calories in the body.

Dietary correction and supplementation. Dr. Watson's most important work, however, was not theoretical. It was his brilliant way of correcting the oxidation rate using dietary modifications and simple supplement formulas. He found that a high-fat diet slowed the oxidation rate. In contrast, a diet higher in protein and lower in fats and oils enhanced or sped up the oxidation rate.

Dr. Watson also found that nutritional supplements including calcium, magnesium, copper and vitamins A and D in certain dosages tended to slow the oxidation rate. Other supplements such as vitamins B-complex, C and E, and zinc and manganese had an opposite effect of increasing the oxidation rate. It is not clear to me how Dr. Watson came up with his formulas, but they evidently worked well because he has a number of spectacular case histories in his two books. When the oxidation rate was balanced, the person's energy level improved greatly and a wide variety of symptoms, both physical and emotional, vanished. If, however, the person stayed on one formula and one diet too long, the oxidation rate would overcorrect, in some cases, and other symptoms would occur. He then had to change both the diet and supplements to the other set to bring the oxidation rate back to ideal. Dr. Eck was thrilled to learn of Dr. Watson's work in the mid-1970s. The main insights were:

- *Just two simple diets and two basic nutrient formulas could correct a large number of symptoms when they were administered carefully and precisely.* This offered the idea of simplifying dietary and supplement recommendations, which can be very complex and confusing.
- *The work implied that there were two basic metabolic types.* This idea resonated with Dr. Eck, who was familiar with the ideas of yin and yang, and other systems of metabolic typing.
- *The same condition may have different causes depending on one's oxidation type.* For example, there exists a fast oxidizer cause for arthritis and a slow oxidizer cause of arthritis.
- *Energy levels rose dramatically when the oxidation rate was balanced.*
- *Many widely diverse physical, emotional and mental symptoms responded to balancing the oxidation rate.*

Dr. Watson wrote two popular books that are a quick, easy read and quite enjoyable. They are *Nutrition and Your Mind* (1972) and *Personality Strength and Psychochemical Energy* (1979). Both are out of print, but are often available from used book sellers.

DR. PAGE AND THE AUTONOMIC NERVOUS SYSTEM

Melvin Page, DDS (1884-1983) was a rather colorful, eccentric and very brilliant physician. Over 100 years ago, he figured out how to use tiny doses of natural hormones to correct many illnesses in the body. At the time, hormone therapy was used very little. Dr. Page used body proportions, which he carefully measured, to decide which hormones and how much of a micro-dose of each to give a patient. He was decades ahead of his colleagues. Dr. Page was one of the first doctors to elaborate how the balance of the sympathetic and parasympathetic nervous systems affects health. For instance, he researched the effect of eating even small amounts of refined sugar on the autonomic nervous system. He discussed how it damages the body through its effect on the nervous system. This was pioneering work.

Dr. Page's work caused Dr. Eck to pay much more attention to the autonomic balance of the body and its correction by natural methods. This is very central to development science. Few methods exist that can measure the activity of the autonomic nervous system as well as Dr. Eck's hair analysis patterns. Some doctors use heart rate variability testing for autonomic assessment, which I have found often agrees with hair analysis assessment. However, it does not, to my knowledge, detect causes for autonomic imbalances the way a hair analysis often can. Also, I do not believe it detects some subtle autonomic patterns such as *sympathetic dominance*, *four highs* and *four lows* patterns.

Dr. Page wrote ***Degeneration, Regeneration*** and co-authored ***Your body Is Your Best Doctor*** with Leon Abrams. In his books, he describes his many insights about micro-hormone therapy, balancing body chemistry and the autonomic nervous system.

DR. SELYE AND THE STRESS THEORY OF DISEASE

Hans Selye, MD (1907-1983) was one of the most brilliant researchers of the twentieth century. Dr. Selye was from Vienna and moved to Montreal, Quebec, where he did amazing animal research on stress, as applied to biological systems. He borrowed many concepts from engineering and from *general systems theory*, described in the next chapter. His work is still not appreciated today, nor is his work used much by anyone today except practitioners of development science. His most important breakthroughs include:

- *Formulating a unified theory of health and disease called the **stress theory of disease**.*
- *Realizing that animals and human beings respond to attack or the threat of attack in precise, mathematical ways that he termed **The General Adaptation Syndrome or G.A.S.***
- *Applying systems theory and cybernetics principles to human health.* He helped popularize words such as *feedback loops*, *homeostasis* and of course, the word *stress* as it applies to biological systems.
- *Recognizing the great importance of the adrenal glands for the stress hormone response.*
- *Discovering how the stress response is mediated through the central nervous system, particularly the sympathetic branch of the autonomic nervous system.* This is the main aspect of Dr. Selye's work that has entered mainstream physiology textbooks. However, it is only one of his many brilliant discoveries.
- *His monumental discovery of the stress theory of disease renders untrue the concept that humans and animals are plagued by thousands of diseases.* Instead, he showed that most of them can be classified as variants of one of his three stages of stress. This effectively unifies

medicine in a completely new way and makes obsolete much of the allopathic theory of ‘disease entities’.

THE GENERAL ADAPTATION SYNDROME

The *general adaptation syndrome* states that all living organisms respond to most attacks in similar ways, regardless of the kind of attack. For example, the stressor could be a chemical toxin that one inhales, a viral infection in the body, a physical stressor such as extreme cold or heat, or a loud noise or electric shock. The type of attack matters little in most cases. Also, the species of animal or human does not matter. In fact, since then it has been discovered that even some plants seem to have a similar type of stress response, though they lack a central nervous system. All seem affected in similar ways. This was groundbreaking science, to say the least.

The only reasons Dr. Selye is not honored as one of the most brilliant scientists of modern times are 1) inertia of the medical profession, 2) the complex nature of his work, and 3) some deliberate efforts to ignore his concepts because they threaten the allopathic medical model. To his credit, Dr. Eck saw the brilliance of Hans Selye and spoke of him often with great admiration. Dr. Selye’s achievements were nothing less than incredible. He authored over 1500 scientific papers and wrote 32 books on stress and the general adaptation syndrome. Among the most interesting is *Calciphylaxis*, an entire book on what Dr. Eck called the ‘calcium shell’ and its development. He wrote two popular books, *The Stress of Life* and *Stress Without Distress*.

THE NUTRITIONISTS

In addition to the above influences, Dr. Eck was a prolific reader and was heavily influenced by the pioneers of scientific nutrition who lived in the twentieth century. Among the most important were Adelle Davis, Dr. Roger Williams, Henry Schroeder, MD, Roman Kutsky, PhD, Carl Pfeiffer, MD, Robert Atkins, MD, T.L. Cleave, Bernard Jensen, DC, ND, Max Gerson, MD, Linus Pauling, PhD, Abram Hoffer, MD, Ross Hume Hall and others. He also was influenced by the older traditional naturopaths, hydropaths and herbalists such as Jethro Kloss and many others. Dr. Eck became convinced they were onto something, although mainstream medicine ridicules them terribly and still gives them little credit for their stupendous discoveries about the importance of vitamins, minerals, herbs and lifestyle to achieve and maintain optimum health.

THE GRAND SYNTHESIS OF DR. ECK

Dr. Eck realized that in some way Drs. Watson, Page and Selye were talking about the same thing. He combined their ideas, changed some of their esoteric language, though not much, and added much more to it that he discovered from hair mineral analysis research. He then synthesized and integrated it into a practical science of health that anyone can learn. I call this the grand synthesis of Dr. Paul Eck. It includes:

- *Nutrition is the answer.* Dr. Eck recognized the importance of diet and nutritional supplements as keys to overcoming the effects of stress and balancing body chemistry.
- *Hair analysis.* Dr. Eck took the work of Drs. Watson, Page and Selye a step further by figuring out a method to assess the stage of stress, the balance of the autonomic nervous

system, the oxidation rate and much more using the inexpensive, non-invasive hair mineral test. This was quite a task that required a number of years of research. Hair mineral analysis was quite new at the time and poorly understood. He worked out ideal mineral levels and ratios, identified many mineral patterns and put this all together with little assistance.

- *Empirical correction with patients.* Dr. Eck was a superb clinician and never let theory override actual results. He constantly updated his computer programs and recommendations based on patient feedback.
- *Extending Dr. Selye's work and making it practical.* Dr. Eck realized he could move people from a less healthful stage of stress to a more healthful one using Watson's dietary method and his supplementary nutrient formulas. He modified these to make them even better.
- *Minerals and their vital place in nutrition.* Simple, non-patentable chelated minerals are often much less glamorous than other nutrients such as vitamins, herbs and amino acids. However, Dr. Eck placed them first, a concept that is just now finally catching on among some nutritional authorities. Minerals, he said, are the *stepchildren of nutrition*. He meant they are too often ignored when they need and deserve much more attention. Mineral deficiencies, biounavailability and excesses lead to most of our health problems, he found. Minerals cannot be made in the body and must come from outside, unlike hormones, many vitamins and some amino acids.
- *Supplement program design.* Dr. Eck's supplement programs are amazing in their simplicity. I am continuously impressed how well they work with fewer and far simpler products than what most doctors are using today.
- *The critical role of toxic metals in human health.* This was a great focus of Dr. Eck's, and is still not well accepted by most doctors or nutritionists. He understood how they replace vital or *preferred minerals* in enzyme binding sites, a concept he learned from the late Henry Schroeder, MD. He also saw from hair analysis research how they interact with the sympathetic nervous system and the overall mineral balance of the body. This is far beyond just viewing them as poisons to be chelated out, which is the way most doctors view them.
- *Copper imbalance.* Much of what is known clinically about copper imbalance is due to Dr. Eck's research. He found it fascinating how one mineral could affect people in such varied and profound ways from causing birth defects to aggravating cancers.
- *Adrenal burnout syndrome.* The causes, symptoms and correction of this common health condition today were elaborated by Dr. Eck almost forty years ago.
- *Understanding emotions and behavior from a hair analysis.* Dr. Eck found startling connections between mental health and specific minerals, the stages of stress, the oxidation types and the levels, ratios and patterns on a hair analysis. This is a separate subject worthy of several volumes all its own. It has far reaching applications in the fields of mental health, education, child development, criminal justice, child protection and other areas of social as well as medical sciences. Eight chapters of this book are dedicated to this enormous subject that he researched and helped to popularize.
- *Measuring parameters of the stress response.* He realized that hair analysis patterns were stress patterns of the body, rather than diagnosable conditions. This may sound unimportant, but it is quite a breakthrough that unifies medicine and the stress theory of disease.
- *Trends or research associations versus diagnoses.* Dr. Eck made use of trends or tendencies on hair mineral analyses. This is very different from diagnosing disease, and often far more useful in clinical practice. These trends can often predict future illnesses with amazing accuracy, and can do so years before problems are revealed on other medical tests.

- *The importance of cell permeability and the ability to measure it quickly, though roughly, from a hair analysis.* This is another breakthrough gleaned from hair mineral analysis that will be appreciated as scientists and doctors begin to realize its importance.
- *Natural medicine principles.* Dr. Eck's work incorporates principles from most of the healing arts, both traditional allopathic medicine and many others. The ability to unify health care in this way is extremely unique and helpful for healing.
- *Importance of congenital, rather than inherited genetic reasons for disease.* Dr. Eck warned about the dangers of passing toxic metals and nutrient deficiencies from mother to child many years before this was formally recognized. He could read the evidence clearly on mothers' and childrens' hair tests. Medicine still confuses genetic and congenital causes of disease because so far they refuse to employ the hair mineral test to detect congenital toxic metals and many other congenital imbalances that can easily mimic genetic disorders.
- *Ideal or optimum values, not reference ranges.* Dr. Eck pioneered the newer, non-allopathic concept of using optimum or ideal test values. Almost all doctors still work with reference ranges, an older allopathic concept for evaluating tests. The idea of optimums or ideals is still very foreign to medical care, including holistic care in most cases. This is a far more important concept than most people realize.
- *Design of a very easy-to-read and calibrated hair analysis chart.* This innovation is not appreciated by most doctors and clients until they attempt to read the hair charts from other laboratories. Dr. Eck, unlike most laboratory owners, was a true teacher in this regard.
- *The benefit of a very wide knowledge base.* Dr. Eck trained in structural manipulation and bodywork, and had met Ida Rolf, the founder of Rolfing. He had a deep appreciation for the way that many therapies from chiropractic and electro-diagnostic and treatment machines work, and how many natural and drug therapies could benefit health. He used all of his background to help him in his research and in the design of his corrective programs.
- *Exercise dangers.* Dr. Eck was among the first to warn against too much exercise for most people. Exercise may feel good and is socially acceptable, but is stressful for the body. Recommending vigorous exercise can be like sending a car onto a fast highway when the steering and brakes hardly work at all. Traditional doctors use costly and sometimes invasive "stress tests" to assess exercise capacity. However, even these are usually not as helpful as a much less costly hair analysis to assess a person's capacity for activity. Dr. Eck was also one of the first to speak and write about "exercise addiction", years before it became a well-known phenomenon.
- *Bioavailability of minerals.* Dr. Eck remains one of the very few scientists who understood and taught about the problem of mineral bioavailability. This concept is so basic to development that it cannot be overlooked. Without it, the hair test and the corrective measures make little sense. Dr. Eck elaborated the reasons for calcium, magnesium, copper and other mineral bioavailability, some of his most advanced work.
- *Blending East and West.* Dr. Eck knew about acupuncture principles such as yin and yang, as well as others. He incorporated some of these ideas, but without sacrificing Western scientific methods such as the use of modern spectrographic methods for measuring minerals. His blending of theory and practice, allopathic and natural healing, and Eastern and Western healing philosophies is an incredible legacy.
- *A quality businessman.* I was impressed that Dr. Eck, unlike many in the medical field, maintained very high standards of integrity, and his lab continues this way today.

- *Shared freely.* I have studied with many doctors in my career. Many kept the best part of their work secret for various reasons. Dr. Eck shared freely. Most of the doctors whom he taught still give him little or no credit for the brilliant insights they claim as their own.
- *A fine person.* From humble beginnings, Dr. Paul Eck was a true friend to me and to thousands of others. He only regretted that he did not have more time for teaching and for his four children who survive him.

IDEAS DR. ECK RESPECTED, BUT DECLINED TO USE IN HIS WORK

As important as the insights of Dr. Eck were the ideas he rejected or at least felt did not fit into development science. These include:

- *Most pharmaceuticals.* While he knew that drugs may be needed, at times, he also saw the harm they do in many cases. Using development, very few drugs are ever needed. When they are, it is mainly for emergencies, surgery or very short-term therapy.
- *Bio-identical and other hormone replacement therapy.* Dr. Eck was extremely wary of this popular method of healing. It is almost never needed if a person will follow a development program. Exceptions are the use of insulin, thyroid hormones and others in a few cases if the organs are irreparably damaged or have been surgically removed.
- *Chelation therapy.* Dr. Eck found that chelating drugs adversely affect the sodium/potassium ratio on a hair analysis. This lost him a lot of support among the chelating doctors. Synthetic chelators are very rarely needed or helpful at all if one understands development science methodology for the release of all the toxic metals. Development is much safer, less costly, gentler and more effective in most cases.
- *Most natural chelators.* He did not like natural chelators such as chlorella, cilantro, zeolite, high-dose vitamin C, bugleweed, yellow dock and others. These, he found, were not needed and somewhat toxic in all cases. He used molybdenum in small doses as a copper chelator. However, it was reserved as an additional product and used only for difficult cases. Many doctors, he said, are anxious to chelate toxic metals without realizing the harm this can cause.
- *Vegetarianism and raw foods.* Dr. Eck understood deeply the problems with vegetarian diets and did not fall for the popular arguments in favor of them, as do some holistic doctors today. He called anyone who eats meat less than three times weekly a vegetarian, and learned how to identify some of these people from a hair analysis. He also advised against the all raw food diet, the Fit For Life diet, and similar popular ones.
- *Most exercise regimens.* Dr. Eck found that most people are in the exhaustion stage of stress. Heavy exercise may feel good, but it can be dangerous. At best, it slows one's progress toward health. Even for weight loss, we find that exercise should only be gentle and mild.
- *Mineral replacement therapy.* This is the use of hair analysis or other tests only to assess mineral levels. Then one supplements the minerals that are deficient and avoids the minerals that are elevated. This is still the main way that hair analysis is used today. Dr. Eck experimented with it and found it only marginally effective. The reasons have to do with the bioavailability of minerals and other complex factors having to do with body chemistry.
- *Symptomatic nutritional therapy.* Dr. Eck discovered that if one corrects the oxidation rate and the major ratios on a hair mineral test, most symptoms go away on their own. He avoided most symptomatic therapy, though it is an extremely tempting way to use nutrients

and other remedies. Problems with all symptomatic approaches is they mask deeper problems and rarely correct the causes of imbalances at the deepest levels.

- *Extreme caution with herbs.* He advised great caution with herbs, although a few of them are used in development programs. Most herbs have drug-like effects or they would be classified as foods. Also, most herbs work symptomatically and at much more superficial levels than development requires. Herb quality is also quite variable today. All Indian and Chinese herbs may be contaminated with toxic metals, in my experience.
- *Megavitamin or orthomolecular therapies.* Development is an orthomolecular approach that is not based on symptom correction. Dr. Eck deeply appreciated the work of Dr. Hoffer and others, but questioned the continuous use of high-dose vitamin therapy. It is hardly ever needed if one correctly recommends nutrients based on the hair test.
- *Washing hair samples at the laboratory.* Dr. Eck rejected the still-popular idea that human hair samples must be washed at the laboratory before analyzing them. Studies conducted by Dr. Raymond Leroy and others show clearly that washing the hair at the lab ruins the accuracy of the hair test, especially for the more water-soluble minerals.
- *The use of reference ranges in hair analysis.* This is the industry standard, but it is an allopathic concept that does not work as well as ideal or optimum hair mineral values.
- *Caution comparing hair tests with blood, urine, saliva and other testing methods.* Dr. Eck was careful to explain to practitioners that blood tests often do not match hair tests because they measure different body compartments and often measure very different parameters of health. Practitioners often become confused when trying to compare various types of tests.
- *Single-element therapies.* Dr. Eck realized that health is due to a combination of factors. For this reason, he endorsed the idea of combining a healthful diet, an excellent lifestyle, nutritional supplements and perhaps other natural therapies to obtain the best results. He knew that single-element therapies always tend to be less effective for deep correction.
- *Nutrient pills as substitutes for real food and a healthful lifestyle.* Many doctors load the patient with supplements instead of insisting on a healthful diet and lifestyle. This was not Dr. Eck's approach.
- *The need for intravenous and intramuscular supplements.* Dr. Eck did not use these therapies, though they can be helpful for a short time. However, they tend to unbalance the minerals in the body in subtle ways, slowing or stopping deeper healing.
- *Food-based products.* Dr. Eck rejected the notion that all supplements must be food-based. I have tested this extensively and found that Dr. Eck's simple formulas, which include many, but not all food-based products, work far better than purely food-based supplements.
- *False or misleading nutritional promotion.* Dr. Eck was a man of great integrity. He hated the snake oil salesmen and health product peddlers who lie or bend the truth to promote their wares. He never did this, and his lab continues today to promote in a very ethical manner.

8. THE SCIENTIFIC BASIS FOR DEVELOPMENT SCIENCE

Mrs. Gray, age 51, was doing well on a development program. One day she called quite frantic, however with a severe sinus infection. She worked as a school teacher and refused to take time off from work. Antibiotics from her medical doctor had little effect, and the same was true of some colloidal silver she had tried. I suggested shining a single, red, 250-watt heat lamp of the type used in a near infrared sauna on her sinuses five or more times daily. She was to use it for only 5 minutes each time, shining it as close as she could to her sinuses, without burning herself, of course. Longer than 5 minutes is not healthful on the head area. The lamp and a portable clamp-on socket cost about \$20.00 at many hardware stores. She called back in two days to say she was feeling much better. In a week, the infection was completely gone.

This chapter and the next six discuss the scientific and theoretical basis for development. The material is not necessary just to use the science. However, it is what distinguishes this work from most other healing approaches. The chapters are organized as follows:

- **Chapter 8 (this chapter) contains:**
 - a) Basic science principles: teleology, general systems theory, cybernetics, holography and fractals.
 - b) Preferred minerals and the concept of enzyme activity.
 - c) Eastern principles of yin/yang balance (from traditional acupuncture), Ayurveda (the three doshas, for example) and dietary concepts of yin and yang from macrobiotics.
- **Chapter 9: Other basic principles of development science**, including Western medical sciences, vitality or adaptive energy, metabolic typing, retracing, biochemical individuality, wellness, orthomolecular medicine, predictive medicine, and restorative or functional medicine.
- **Chapter 10. More advanced development principles:**
 - The mineral balancing system
 - Biological transmutation of the elements
 - The homeopathic principle of pleomorphism
 - Mental and spiritual development
 - The chakra system and development
- **Chapter 11. Understanding stress and the autonomic nervous system.**

- *Chapter 12. The Oxidation Types - Theoretical Considerations*
- *Chapter 13. The Oxidation Types – Specifics of Balanced, Flexible, Fast, Slow, Mixed and Sub-oxidation.*

TELEOLOGY

Teleology means healing intent. It is the idea of an intelligent design that is responsible for much of the healing and regeneration of the body. All healing arts use it, without exception.

The major thrust of development is to get out of the way of this healing intelligence or life force. The practitioner seeks to discover all that is blocking healing, rather than substitute his own inferior wisdom for that of the body. One also seeks to avoid unbalancing or diminishing the teleological force at work in the body. Drug therapy, in contrast, may produce wondrous symptomatic effects. However, it also often upsets the life force or healing intent of the body, negating some or all of the longer-term benefits.

GENERAL SYSTEMS THEORY

A system is a group of items, all of which affect each other. This rough definition will suffice to introduce the most important difference between development and most other healing methods. In the late 20th century, great minds realized the importance of viewing many complex phenomena as *systems*. Among the pioneers was Ludwig Von Bertalanffy, author of *General System Theory, Foundations, Development and Applications* (1968). Another pioneer in a more practical way was Richard Buckminster Fuller.

While we take the word *system* for granted, it is actually a newer word in common usage. Traditional doctors speak of body systems, but their understanding is still very limited. If they really thought in systems terms, many fewer drugs would be used due to “adverse effects”. These are simply other *whole systems effects* that are harmful. Nutrients would be used instead, as they have many fewer ‘side’ effects. Knowing the basics of systems theory is a key to understanding development science.

Open and closed systems. *Open systems are those in which the boundaries and all the parts are not known.* A prime example is our universe. We don’t know its extent because we don’t know its boundaries. Also, we don’t know much about many of its features or parts. Open systems are exciting on a theoretical level, but very difficult to work with.

Closed systems are those in which all or most of the parts are known, and often facts are clear about the boundaries of the system. Living organisms are generally considered closed systems. This type of system is much easier to study and analyze, which is fortunate for us.

In fact, human beings are open systems to a degree. The more spiritually developed a person is, the more he or she is not ruled by the whims of the body. This is the open nature of human beings. However, for the most part, humans are considered closed systems.

Complex, self-regulating systems. *Complex systems* have millions of parts that interact in extremely complex ways. *Self-regulating systems* are those that have so much feedback in them that they self-correct to maintain equilibrium or homeostasis. Human beings are best described as *closed, complex, self-regulating systems*.

Local and systemic events within systems. Systems always experience two general types of events, local and systemic. To understand systems well, one must distinguish between them. *Local events* within a system are those that have little effect on the whole system. In a human body, a local event might be a broken finger, perhaps. While the pain may affect the whole person, the damage and disability are limited.

Systemic events are those that affect the entire system, or at least most of it. Systemic events include fatigue, what a person eats, one's lifestyle, exercise habits or generalized infections.

Traditional medical care often confuses the two types of events. For example, they treat most cancers as primarily local events, when this is never the case. They also often treat minor or more local events such as a sore throat as major systemic events requiring toxic, whole body interventions such as antibiotics. These can cause significant system-wide side effects. Even high blood pressure can be mainly a local event, for example, due to cadmium toxicity in the kidneys. If one knows this, there is no reason to give systemic drugs such as beta blockers or calcium channel blockers that can have system-wide adverse effects.

LAWS OF SYSTEMS. Basic laws of all systems that are related to healing include:

#1. The behavior of the whole system is greater than the sum of the behaviors of all the parts. This is the most difficult principle to comprehend and appreciate. Our education system, including medical schools, rarely teach it. It applies when human beings think they understand a system such as our physical environment or our bodies, but in reality they only understand a fraction of it. They are shocked when the system reacts in an unpredictable way. The Soviet Union and Nazi Germany are examples on a governmental level. These societies decided they could control everyone's behavior by force and create a smooth-running society. Instead, their actions led to horrific wars and the nations ended up in ruins. They lost out to another systems principle, the one that follows.

#2. One cannot predict the behavior of the whole system just from knowing the parts. This can mean that any focus on parts, whether they be organs, minerals, vitamins, diseases or others will not tell us too much about the total body system. For example, the body's response to an intervention such as a drug therapy or a diet is unpredictable, especially if one does not remain focused on the *whole systems aspect* of the body.

This is actually a great spiritual truth found in the bible and other spiritual teachings. It may be stated that God (the whole system) is in charge, not the parts (human beings or anything else). The ancients figured out this principle thousands of years ago.

#3. If one knows some of the behaviors of the whole system and most of the parts, one can infer or figure out the behaviors of the rest of the system. This principle is critical for development. When dealing with a complex, self-regulating system such as the body, the best we can do is to identify some behaviors of the whole system. Then we can use these, along with partial knowledge of the parts, to predict other system behaviors and modify them.

As a simple example, a whole system behavior is the need for enough rest. If one knows that human beings need at least eight or nine hours of sleep nightly, and if the body does not get the rest it needs, the brain will not function correctly, digestion will be weaker the next day, and

so forth. The point is that by focusing on whole system behaviors, we can learn a lot about the behavior of the parts of the human system.

What are whole human system behaviors? Simple ones are *diet* and *lifestyle*. Others are *patterns of thinking and attitudes*. By knowing these, we can predict a lot about the behaviors of various parts of the human system. I am continually amazed that most medical doctors and even some naturopathic doctors don't ask about these simple whole system behaviors. They could learn so much, so fast about a person and his likely health conditions.

More subtle whole system behaviors on a hair mineral analysis are the *oxidation rate*, the *stage of stress* and the *sodium/potassium ratio*. Dr. Eck understood that these are far more important than individual minerals or toxic metal levels, for example. One can measure hundreds of other health parameters such as blood sugar, blood pressure and others. However, these are much more local than the oxidation rate or the balance of the sodium/potassium ratio in the hair.

Implications of systems theory for healing include:

- *A client's entire life needs to be viewed as a system.* This means that one's diet, job, relationships, health program, lifestyle, attitudes, emotional control and spiritual outlook all fit together and are never to be viewed only as isolated parts or events.
- *The body must be approached as a system.* This means that all its organs affect the others and none are merely local parts.
- *Symptoms such as fatigue or low blood sugar have important systemic aspects and therefore must be viewed as systemic events rather than local ones.* In other words, fatigue is not just a simple symptom to be "fixed" with a drug for narcolepsy or a cup of coffee.
- *Therapies and procedures of all kinds must be viewed systemically as well.* This means asking what are the overall effects, also called "unintended consequences" of a vitamin, an operation or a drug. Also, what is the effect on the mind, the emotions and even the spirit?

For example, antibiotics are very effective against certain bacteria. However, they often have negative consequences for the intestinal flora, and, at times, for the liver and other organs. Since they negatively affect these important organs, they also negatively affect the whole system in almost all cases. Alternatives to antibiotics, such as colloidal silver, bee propolis, Echinacea, vitamin A or others, are often far superior for this reason.

Systems principles explain seeming paradoxes in development, including:

- *Minerals whose levels are elevated on a hair test may be supplemented, while minerals whose levels are low are left alone.*
- *A client is made to feel worse for a while on the road to recovery.* For example, a person with a four lows pattern may be given supplements that cause more fatigue.
- *Supplements that give a sense of well-being are to be avoided in some situations.*
- *A mineral level or ratio that appears at first glance to be alarmingly abnormal may be evidence of excellent progress.*
- *Normal-appearing levels or ratios may indicate serious imbalances.*
- *Seemingly severe organ problems or symptoms, such as a toxic liver or an elevated blood sugar, may not be addressed while other, seemingly minor symptoms such as constipation or insomnia are deemed more important to address first.*

CYBERNETICS

Cybernetics is the study of complex, self-regulating systems. It is also defined as the science of communication and control in complex, self-regulating systems. It is the brilliant work of Dr. Norbert Wiener, who worked at the Massachusetts Institute of Technology, and his colleagues. Dr. Wiener wrote about it in two popular books, *Cybernetics, or Control and Communication in the Animal and the Machine* (1948) and *The Human Use of Human Beings* (1950). He and others also wrote innumerable technical papers about it. Cybernetics began as a way to program automatic tracking systems for machine guns on warships during the Second World War. However, it applies to all self-regulating systems including human beings.

The main idea of cybernetics is that complex, self-regulating systems consist of thousands of unstable parts that can only function together thanks to complex *feedback loops*. These are ways the parts communicate with each other. In fact, at times, the parts are less important than the relationships and feedback loops between the parts. Thus the science of cybernetics focuses less on 'parts' and more on the complex relationships and the communication links between the parts. For example, a ratio between two mineral levels is such a relationship. From cybernetics have come several important words and concepts used in development science and in other fields as well:

1. Homeostasis is the process of maintaining internal system equilibrium or balance in the face of constantly changing conditions. In our bodies, the changing conditions might include the ambient temperature, one's energy level, the presence of pathogens, and even one's mood, for example. The body must keep itself balanced, heated properly, digesting food and doing much more in the face of a constantly shifting internal and external environment.

The way a complex, self-regulating system does this is with fairly stable *homeostatic states* or states of balance. *Fast and slow oxidation* are such states of our bodies, along with *four lows pattern*. The major hair mineral ratios also represent somewhat stable homeostatic states. Some of these homeostatic states are more healthful than others. ***The goal of development is to move the body from a lower energy homeostatic state to a higher energy and healthier homeostatic state.***

2. Feedback loops are the special communication links that maintain states of homeostasis. They can be of two major types:

Negative feedback loops stabilize the body by causing a return toward an ideal or balanced state. They tend to return the body to the way things were before a particular part of the system was disturbed or changed. For example, if one does not sleep enough on a given night, the body will signal this with fatigue in order to cause one to sleep more the next night. This tends to return the body to a rested state of balance. Fatigue acts as a feedback mechanism, in other words, that helps us return to stability, balance and health.

Positive feedback loops cause a movement further away from balance. They are also called *vicious cycles* and, at times, *self-fulfilling prophecies*. They always lead to death of the body if they persist for too long. A positive feedback loop causes an element in a complex system that is disturbed to become even more so. ***Positive loops destabilize the body, while negative loops stabilize and balance.*** Common examples of positive feedback loops include:

- *Lifestyle* – Lack of rest worsens fatigue, which can lead to sleep difficulties from being overtired. This leads to poorer sleep. The cycle may continue until illness occurs.
- *Diet* – Eating sweets, even too much fruit, worsens blood sugar imbalances that increase the cravings for sweets. This, in turn, leads to greater consumption of sugars until hypoglycemia, diabetes and other serious illnesses occur.
- *Mineral balance* – Low tissue calcium in a child increases the stress level, which, in turn, can further increase the oxidation rate. This tends to worsen the calcium deficiency. This, in turn, increases the stress further, which causes an even faster oxidation rate.
- *Overtired children* – Fatigue causes a faster oxidation rate in most babies. This uses up a lot of energy, worsening the fatigue, which in turn increase the oxidation rate further. Soon the child is irritable and may cry or scream for no apparent reason.
- *Emotional illness* – A simple event may cause anxiety that, in turn, adds stress to the body. This, in turn, increases anxiety, which further worsens the person's stress level. If this continues for more than a few seconds or a minute, at most, a panic attack may occur.
- *Addictions* – All addictions are vicious cycles, which is why they are so dangerous. For example, cocaine, or even caffeine or sugar, may cause a 'high', but they also stress the body and deplete nutrients. For this reason, when the substance wears off, the 'high' is replaced by a 'low' that results in an even greater craving for the item than before one used it.
- *Spiritual* – Feeling like a victim disempowers a person, which makes one feel even more like a victim. This further disempowers one in a vicious cycle that can last a lifetime.

All serious diseases are vicious cycles. Anaphylactic shock is an obvious example. The throat may swell and close up, which causes panic and impaired respiration. This, in turn, worsens the shock reaction until death occurs unless the process is stopped somehow. Cancer, diabetes, heart disease and others are also deadly because they involve positive feedback loops.

Implications of cybernetics:

- *The goal of development, in a broad sense, is to assist the body to break out of positive feedback loops and to restore stabilizing negative feedback loops.*
- *The life of the body can be viewed as a series of homeostatic states our bodies pass through as they respond and adapt to stress.*
- *Toxic metals and nutrient deficiencies often contribute to vicious cycles in the body.*
- *As one ages or sickens, homeostasis is harder to maintain and more vicious cycles occur.*
- *Modern societies also depend on negative feedback loops to keep society in balance. Among the important ones are free speech, free markets and open competition in the business world.*

HOLOGRAPHY

The holographic principle is that the whole is found within each of the parts, or each part of a system contains a blueprint of the whole system. This is a subtle, but very important principle of development. I will give a simple example:

The sodium/potassium ratio. This simple ratio indicates the balance between:

- *Pro-inflammatory and anti-inflammatory adrenal hormones (aldosterone and cortisol).*

- *Estrogen and progesterone.*
- *Zinc and copper.*
- *Yang and yin forces.*
- *Alarm and exhaustion stages of stress.*
- *Anabolism and catabolism.*
- *The Ayurvedic qualities of pitta-vatta and kapha.*

In other words, a part of the body system – in this case, the hair sodium/potassium ratio – is a microcosm of the whole and contains the whole, though in an incomplete form. This idea applies to many aspects of development such as the mineral levels, other ratios, the oxidation type and rate, and other mineral patterns.

FRACTALS

A fractal is a numbered pattern that is repeated over and over to form a complex, self-regulating system. Fractal science is a type of design science in which simple numbered patterns are repeated over and over to permit very complex functioning. For example, human beings have two arms, two legs, two eyes, two kidneys and two ears. This is a simplistic example of a fractal using the number two.

In a fractal, the whole pattern is repeated in the parts and the parts express the blueprint of the whole. Holography is a subset or derivative of fractal geometry in which the whole is represented in the parts, but the parts do not contain the entire whole. In a fractal, by contrast, the parts do contain the whole system to a greater degree or even completely. Fractals are very important in development science for the following reasons:

- *In development, there are patterns of ones that repeat, twos that repeat, and so on.*
- *Fractals are the reason why a single, simplistic ratio such as the sodium/potassium ratio or the calcium/potassium ratio gives us so much information all at once.* This cannot be understood by any other means.
- *Fractals also help us understand the mineral balance in the body because fractal science is used by nature to build the plant and the animal bodies.* This is clear from the fractal nature of some flowers and tree trunks, for example, that display mathematically-proportioned patterns that, in turn, produce all of nature's beauty and functionality.
- *Fractals are needed to understand Dr. Eck's supplement recommendations.* He learned that certain supplements mysteriously balance the body, while others do not. While he did not know theoretically why this is so, fractal chemistry can help explain it.

For example, *mercury, cadmium* and *zinc* exist in a fractal arrangement that is represented on the periodic table of the elements as one of the columns on the table. There are many such arrangements in physics, biology, chemistry and even psychology.

- *Dr. Eck was aware of what he called couples, triplets and quadruplets among the minerals, for example.* This, however is just a small part of the way fractal geometry is used in the body and its biochemistry. The principle goes far beyond and applies to all natural creations.

HEALTH IS DEPENDENT ON ENZYME STRENGTH

The health of the body is the health of its enzyme systems. This concept is from modern molecular biology and biochemistry. It sounds simple enough, and it is at one level. At another level, it is the most complex of all the principles.

Each of the body's enzymes depends upon the presence of specific components, including many minerals, vitamins and other substances. Some of these are parts of the enzyme. Others are needed as *catalysts or facilitators*. This means they are not components of the enzyme itself, but they must be present for the enzyme to work properly. Others may function as *inhibitory factors* that are also needed in the right amount for the enzyme to function properly.

In addition, every enzyme requires certain environmental conditions such as the correct temperature, pH and others in order for it to function properly. Dozens of vitamins, minerals and other chemicals may be required for a single enzyme. Bringing all these parts and conditions together is quite a feat, yet our bodies manufacture and activate millions upon millions of enzymes every second. If the process were to slow or stop for even a minute, death would quickly follow. Development focuses on restoring these enzyme systems. Aging and illness occur when even one aspect of a crucial enzyme is missing or defective in some way.

Measuring enzyme strength. One can roughly assess the level of enzyme activity using the oxidation rate. However, this is only general. Of the body's trillions of enzyme systems, only a few have been studied in detail. A general assessment is too non-specific to be usable. Also, a malfunction in even one key enzyme system can cause serious illness or even death. The best idea is to just get to work on the slow and arduous task of restoring all the enzyme systems.

This discussion, by the way, has little to do with taking enzymes or those found in foods. This discussion is purely about the enzymes made by our bodies every moment of every day.

PREFERRED MINERALS

Most enzymes in our bodies can function with several minerals in a given enzyme binding site. However, one, or rarely two minerals, are always the *preferred minerals in the binding site that permit the enzyme to function optimally*. Healing with development involves replacing the *less preferred* minerals with the *more preferred* minerals to restore enzyme strength. This principle is at the heart of development science. Here is its essence:

- *Enzymes require specific minerals to function optimally.*
- *If the ideal or preferred minerals are not available from the diet, many enzymes can function to some degree using other minerals. I call these less preferred minerals.*
- *This is an adaptive mechanism to keep one alive in the face of nutritional deficiencies.*
- *When a less preferred mineral is used in an enzyme system, the enzyme functions at a lower rate of efficiency and effectiveness. This causes health problems of every kind.*
- *The goal of development and every other truly deep healing system may be viewed as replacing thousands of less preferred minerals in the body's enzyme systems with the ideal or more preferred minerals. This is the only way on a physical or biochemical level to restore the body's enzyme systems to full functioning capacity, and thus restore health and vitality to the most optimal levels.*

An analogy. Imagine a fan belt on your automobile breaks while you are driving through a desert, miles from civilization. You might try wrapping a leather belt or a rope around the pulleys of the engine in order to continue driving. The proper fan belt is like the preferred

mineral in the body. The leather belt or rope is like a less-preferred mineral. It won't work nearly as well, but it might allow you to keep going at a slow speed, and it might save your life. Development is like taking the car to the repair shop and having the mechanic replace all the less-preferred parts with the factory original parts. Soon the car starts to run much better!

Why it works. The reason minerals can substitute one for another is they “look” similar at the sub-atomic level. Therefore, certain toxic metals can “fit” into the metallo-enzyme binding sites rather well. Exactly how this happens is explained in the well-known periodic table of the elements. Dr. Eck respected the work of the late Henry Schroeder, MD, who wrote:

“Look at the table vertically. Each element down from the top row is like the one above it, only heavier (and somewhat larger). Its outer electron ring is exactly like that of the one above.... Therefore, it has the same chemical and physical properties, only a bit different because of size. Its reactions are the same.” (*The Trace Elements And Man*, p. 3).

“When tissues have an affinity for a certain element or are structured by it, they have an affinity for all other elements of the group (in the periodic table of the elements).” (Ibid. p 6.)

“The correct key fits the keyhole and unlocks. (A similar key) will fit the keyhole but it won't unlock. A different make of key will not even fit the keyhole.” (Ibid., p. 7)

Here are some common examples of mineral replacement:

- *Zinc is needed in the pancreas to help produce a high quality insulin.* If iron replaces zinc, the amount and quality of the insulin will decrease.
- *Magnesium is needed in over 500 enzymes.* If it can be replaced, the replacement mineral causes the enzyme to function at 10% or less of normal capacity. This causes fatigue, heart problems and many other symptoms.
- *Lead can replace calcium in the bones if calcium is not available.* This prevents a total breakdown of the bone. However, it produces a less intact bone structure that causes osteoporosis later in life.
- *Zinc is needed in the arteries to give them flexibility.* If it becomes replaced with cadmium, the arteries become hard and inflamed.

Implications of the concept of preferred minerals:

- *Toxic metals do not just deposit idly in the body.* Most are incorporated into specific enzymes, tissues and organ structures. Removing them somewhat forcefully and randomly with chelators can cause problems for this reason.
- *The body has a definite order and time sequence to replace less preferred minerals.* Removing toxic metals and replacing vital minerals is not a matter of dumping out the bad ones and pouring in the good ones. Done haphazardly, the process tends to stall.
- *Specific toxic metals replace specific trace elements.* This is the rationale for the use of specific targeted *antagonists* for toxic metals.
- *Aging is due, in part, to having too few preferred minerals in one's enzyme binding sites.*
- *Birth defects are often due to the replacement of preferred minerals with less preferred minerals.* In this sense, our DNA is more like a template than it is a total prescription for enzyme and protein synthesis.

- **Healing reactions** are often the result of a more preferred mineral replacing a less preferred one. To use our automobile analogy, at times the engine is accustomed to using a poorer-quality substitute part. When this is replaced with the factory part, the engine must be tuned again or calibrated to run correctly. Until this occurs, it runs roughly or poorly. This is not a bad analogy for the cause of many healing reactions.
- **Good vitality** is another word for having preferred minerals in your trillions of enzyme binding sites.

HOMEOPATHY

Homeopathy is the use of potentized remedies for healing made from plants, animals, minerals, viruses and, in fact, almost anything. It was discovered by Samuel Hahnemann, MD, in the mid-1800s in Europe, where it remains more popular than in the United States. The AMA managed to outlaw homeopathy in America in the early 20th century. The queen of England uses a homeopathic physician. Principles from homeopathy that are part of development science include *pleomorphism, the principle of layers of adaptation and aggravations or healing reactions*. The next few chapters discuss these ideas.

TRADITIONAL NATUROPATHY

Traditional naturopathy is the use of natural elements from the earth, air, water, food, herbs and the sun for healing. Many principles from this excellent healing tradition used in development include:

- *An emphasis on a healthful diet, lifestyle, clean water for drinking and nutritional supplements to strengthen and balance the body.*
- *The use of herbs.* This large topic is discussed in more detail in Chapter 4.
- *The importance of toxicity in disease, and how to remove toxins safely from the body.*
- *The use of hydrotherapy such as enemas, baths and colonic irrigation.*
- *The use of physical therapies such as sauna therapy, massage and bodywork.*

In America, the AMA managed to outlaw most naturopathy in the early 20th century. Today, unfortunately, most naturopathy, especially that taught in the licensed naturopathic colleges, focuses far too much on symptomatic correction. Also, too many naturopaths want to prescribe drugs and natural hormones, which are also toxic drugs. This is a total departure from their glorious tradition of avoiding all toxic substances.

EASTERN OR ORIENTAL SCIENCES AND DEVELOPMENT – THE BALANCE OF YIN AND YANG

All physical life and health depend on making the correct balance between opposing and complementary forces that are traditionally called yin and yang. Dr Eck once told me that the science that was closest to development is acupuncture. At the time, I did not understand why he believed this. However, I have since come to appreciate just how important the idea of *balance* is in development. Examples of balancing yang and yin in the body chemistry include balancing:

- *Fast (more yang) and slow (more yin) oxidation.*
- *Sodium (more yang) and potassium (more yin).*
- *Zinc (more yang) and copper (more yin).*
- *Calcium (more yang) and magnesium (more yin).*
- *High Na/K (more yang) and low Na/K (more yin).*
- *Sauna therapy and coffee enemas (more yang) and distilled water (more yin).*

Today, most of the bodies are yin. Thus, more yang energy is needed by most people.

Macrobiotics. This very ancient science assigns a place between the extremes of yin and yang for all types of foods, and one balances the diet this way for optimum health. Macrobiotic ideas were not part of Dr. Eck's original work. I have added it, however, because it works beautifully. However, as with Chinese medical concepts, only certain aspects of macrobiotics are part of development science. Other aspects of all these ancient sciences appear less helpful today, so they are not part of development science. The topic of yin and yang is discussed more in Chapter 5.

CHINESE FIVE-ELEMENT THEORY AND ACUPUNCTURE

The Chinese five-element theory is related to development as well. In development, however, about seven elements are important, and they are not integrated in the same way as in Chinese medicine. However, the concept of basic elements applies very much in development theory. Below, I have listed the element at the left with a chemical element next to it and the Chinese equivalent, roughly, on the right:

Development Element	Chemical Element	Chinese Element
Food and diet	carbon	Wood
Lifestyle	oxygen	Air
Sauna therapy	phosphorus	Fire
Distilled or spring water	oxygen/hydrogen	Water
Mineral supplements	many minerals	Metal
The Roy Masters exercise		Earth or grounding
The God connection	zinc and selenium	Heaven

ACUPUNCTURE PATTERNS CORRELATE EXACTLY

Many acupuncture patterns are identical to the hair analysis patterns. An article at www.drlwilson.com describes them. Here are a few examples:

Yang rising = three highs/four highs pattern

Damp heat = copper toxicity

Yin deficiency/blood deficiency = bowl pattern

THE THREE DOSHAS OF AYURVEDIC MEDICINE

Ayurveda is an ancient East Indian healing science built around balancing three types of imbalances or ‘blemishes’ called doshas. The correlation with the metabolic types in development is striking for anyone who has studied both systems. Very briefly, the three doshas are:

- *Vatta*. This means air, ether or perhaps mind and emotions. This is the source of the other two imbalances. Western science is just beginning to appreciate the power of the mind and emotions on health.
- *Pitta*. This means fiery energy, will and a more yang approach to life. This correlates perfectly with *fast oxidation* in development science. However, pitta and the others are qualities of bodies, not metabolic types. Metabolic typing is a Western idea that is far simpler to understand.
- *Kapha*. This means earth or watery energy. It corresponds more to *slow oxidation* in development. However, once again, kapha is a quality, not a metabolic type.

THE THREE QUALITIES (GUNAS IN SANSKRIT) OF AYURVEDIC MEDICINE

Ayurveda teaches that nature is comprised of three basic qualities or substances called gunas in Sanskrit:

- *Sattva or balance* is associated with balanced and flexible oxidation.
- *Rajas or hot or burning* is more yang and more associated with an alarm stage of stress and fast oxidation.
- *Tamas or passive* is more yin and most associated with an exhaustion stage of stress and slow oxidation.

Ayurveda also discusses toxins or *ama* in Sanskrit. Unfortunately, I have repeatedly found that some Ayurvedic herbs contain too many toxic metals to be healthful today for long-term use, even those of the best quality. The same is true of many Chinese herbs. Please beware of this and do not use these herbs on a continuous basis. Even products such as Sunrider and other herbal food systems are too toxic for continuous use.

OLDER SCIENCES LESS EFFECTIVE TODAY

Some will disagree with this perspective, but in my 30 years of experience, the older Eastern and Western medical sciences are not as effective today as they once were. This is precisely due to the changes in our food supply, drinking water, air quality, ionizing radiation from atom bomb tests and other factors such as electromagnetic stress. For example, even the best quality organic food today has far lower levels of vitamins and minerals than most food grown 100 years ago. While some practitioners are excellent, in general the older sciences are missing too many elements needed for today’s toxic bodies. For this reason, development science takes some ideas from many of the older sciences, and integrates and updates them to deal with the health disasters and special needs of the 21st century.

9. OTHER BASIC PRINCIPLES OF DEVELOPMENT SCIENCE

Don, age 35, was a local dentist and a brittle, insulin-dependent diabetic for over 10 years. He took 10-13 units of regular insulin before each meal, and an additional 17 units of NPH insulin at bedtime. He flew 500 miles every few months to visit a prominent diabetes specialist at Scripps Hospital in California. Yet he was feeling worse, with more fatigue, sweet cravings, irritability and mood swings. His prescribed "diabetic diet" was high in fruit and whole grain bread with snacks of fruit between meals. His first hair test revealed:

- **Calcium was 195 mg%.** *This is a calcium shell pattern associated with psychological withdrawal, lowered energy production and usually an acidic pH and reduced cell permeability. All of these interfere with blood sugar regulation.*
- **Potassium was very low at 2 mg%.** *This is associated with adrenal exhaustion and often impaired blood sugar due to imbalanced cortisone secretion. A hair potassium level of 4 mg% or less also indicated he was in sympathetic dominance. This is a tendency to overuse the fight-or-flight nervous system, which also slows healing in many ways.*
- **The calcium/potassium ratio was 92.5:1.** *This usually indicates diminished thyroid activity, another link in the hypoglycemic-diabetic saga.*
- **Zinc, manganese, chromium, selenium and phosphorus levels were also low.**
- **Lead, mercury, cadmium and aluminum were elevated.** *The copper and nickel levels were borderline high.*

I advised Don to reduce dietary carbohydrates and eat protein every few hours and with each meal. I suggested only a basic development supplement regimen because he told me he was not good at remembering to take pills. He did not want to do coffee enemas, and I was not recommending sauna therapy at that time. Within a few days, however, Don reported reduced sugar cravings, more energy, less hunger in the evenings and fewer mood swings. His wife called me and said he was much easier to live with.

Don came for a retest hair analysis after several months. He was eliminating more lead, mercury, copper and nickel. Cadmium and aluminum decreased somewhat. This indicates that less of these were being eliminated during the first three months on the development program. Calcium decreased from 195 to 114, indicating a much faster oxidation rate. It means Don's ability to utilize energy was much improved.

Don's program remained similar, and he had another hair analysis seven months later. The calcium/magnesium ratio finally came into the normal range. Also, zinc improved significantly from 11 mg% to 14 mg%. Phosphorus improved from 11 mg% to 13 mg%. This

might have been due to more protein in the diet, although more tissue zinc is important for protein synthesis and may have been the reason for the improved phosphorus level. A better phosphorus reading often indicates improved vitality, a key to healing all illness. Don's toxic metal levels remained high, and cadmium was even higher at 0.06 mg%, over six times the ideal level. Cadmium and iron toxicity are common in diabetes. The following imbalances also remained the same: a slow oxidation rate, sympathetic dominance pattern and an elevated sodium/potassium ratio indicating acute stress.

After about a year on a development program, Don felt much better and was very happy with the program. However, he began to slack off his program. Even though his wife packed up his vitamins for him each day, he started forgetting to take them. He told me he was tired of following the regimen. Soon Don started to feel worse, and he stopped checking in every few months. The sad part is that if he had continued just another year or two, Don might not have required the strict diet and nutritional supplements as much, as his body would have been significantly restored.

This chapter introduces another set of important principles that are part of development science. They include *vitality or adaptive energy, Western medical sciences, biochemical individuality, metabolic typing, retracing, wellness, orthomolecular nutrition, predictive medicine and restorative or functional medicine.*

VITALITY, LIFE FORCE OR ADAPTIVE ENERGY

Vitality, life force or adaptive energy is the most basic measure of health. This is why Dr. Eck called development “the science of human energy”. Adaptive energy was defined by Hans Selye, MD as the energy an organism uses to adapt or respond to its environment. It is much more than just the energy a person uses to move around or even to digest his food. It is more fundamental than that.

Post-modern medical care pretty much ignores the entire concept, much to their detriment. If they paid attention to it, they would have to abandon most of their drugs and procedures because they would find that these deplete the vital force significantly in a lot of cases. A phrase in medical care that most closely describe good vitality is “high resistance to disease”. A phrase that describes poor vitality is “run down”, though this is admittedly crude.

Other cultures gave it names such as chi, qi, prana, orgone energy, vital force and others. However, their definitions are often vague. For example, even with acupuncture techniques, it is hard to measure exactly. Hair mineral analysis can measure it, but only to a degree. At least the hair test is precise and mathematical, and easily duplicated. It can be measured in the brightness of the auric field around a person's body, but this is only possible with sensitive electronic measuring instruments, and even then it is not precise. The brightness is a measure of the high-frequency etheric or life energy in a body.

Each person is born with a certain amount of this vital force or vitality. As one ages, the amount always declines. However, one can maintain and even increase it by certain well-known means. Methods to help *maintain vitality* include:

- *Eating high quality food that nourishes the body.*
- *Drinking pure, uncontaminated distilled or spring water only.* The correct water may even enhance the vital force or etheric energy.

- *Following healthy lifestyle habits such as adequate rest and sleep, engaging in light and regular exercise such as slow walking, and breathing deeply and fully.*
- *A healthful occupation, fun hobbies, quality personal relationships, happy thoughts and emotional control help maintain a positive attitude and intent to live a long life.*
- *Development science recommends all these, plus targeted nutrient supplements and detoxification procedures to further help maintain one's vitality by nourishing and balancing the body in many ways.*

Methods that can actually enhance one's vitality or life force include:

- *The Roy Masters observation technique, and not most others.* This is the main reason this exercise is recommended in development. It can actually regenerate the body if done correctly over a period of years.
- *Eating certain foods and herbs that have high etheric energy can enhance vitality.* These include quality meats, eggs, cooked vegetables and some whole grains, but not wheat anymore, and not most fruits, beans, seeds and nuts, which have less etheric energy.
- *Cooking food lightly and properly enhances its vital energy.* This principle is used in many Oriental sciences such as macrobiotics.
- *Close contact with a person who has a higher vitality level also helps.* This is one reason some people benefit from intimate relationships, and even why some people visit gurus, although most are not as enlightened as they say they are.
- *Some locations radiate more etheric energy than others.* For example, higher altitudes and drier climates tend to be a little better.
- *Certain rock formations give off more of an etheric energy, as do certain crystals and gemstones.*

Implications of the vitality concept are:

- *Every ailment or symptom begins with fatigue or lowered vitality.* This helps explain why some people catch cold faster than others, for example, even if they have similar lifestyles. We say they are "run down", which can describe their level of vitality.
- *All adaptation to stress uses up adaptive energy.* This means that adapting to cold, heat, noise, infection, lack of rest, improper food or other stress of any kind is not helpful for one's health because these use up adaptive energy. This is why I advise people to sleep a lot, stay warm at all times and avoid vigorous exercise. Some temporary stress due to exercise or activity is good for building the bones and muscles, but this should be its only function. A certain amount of certain other stressors are also beneficial because they are analogous to exercise. That is, they develop other parts of the human body or mind. These are discussed in Chapter 11 on stress.
- *Any activity that depletes energy or vitality is not helpful.* Even too much thinking is not helpful for health, although some reasoned thinking is essential.
- *Building vitality is central in development.* This is done with diet, lifestyle modification, supplements and detoxification, along with the mental and emotional training offered by the Roy Masters meditation exercise.

Measuring vitality. This is not easy. The following are principles regarding this topic:

- *Vitality and Age.* Age is always an important factor in determining vitality. For example, all young children are generally more vital than even a healthy person who is 85 years old. This applies even if the child is “sick” and the 85-year-old is “well”. Of course, there are a few exceptions, as one may die in childhood.
- *Vitality is not the same as being “energetic” or “high energy”.* Many people race around all day and even part of the night. However, based on their hair mineral tests and symptoms, most of them do not have a high vitality level. Some live on stimulants, for example, such as coffee, sugar, chocolate and others. Stimulants may also include stress, anger, fear, sexual drive, loud music, medications and other stimulant substances, habits or activities.
- *Vitality roughly corresponds to the stage of stress.* The alarm stage of stress, the earliest stage, has the highest adaptive energy or vitality. The exhaustion stage has lower vitality, in general. This idea may need to be modified, however, by other mineral ratios and levels.
- *Vitality may also be indicated by a more balanced oxidation rate.* Drs. Watson and Eck found that the greatest cellular energy production occurs with a balanced oxidation rate. This can be tricky, however, as many cancer patients have a fairly balanced oxidation rate, at least on their initial hair tests. So other factors can obviously influence the oxidation rate and one must not just consider this one factor to evaluate vitality.

Hair analysis criteria for vitality. Vitality criteria on a hair mineral analysis include:

- *The lower the phosphorus level, below about 13 mg%, the lower the vitality.*
- *Those with a normal or elevated sodium/potassium ratio are generally more vital than those with a low sodium/potassium ratio, provided the ratio is not above about 15:1.*
- *Fast oxidizers are generally more vital than slow oxidizers.* Also, fast-mixed oxidizers tend to be more vital than most slow-mixed oxidizers. However, a very low sodium/potassium ratio in a fast or fast-mixed oxidizer is not a good sign of vitality.
- *High toxic metal levels, especially in slow oxidizers, often indicate a lower level of vitality.*

More specific ways to assess high, medium and low vitality with hair analysis include:

1. High vitality indicators. The more of these that are present the better:

- *A mild or fairly balanced oxidation rate, either fast, slow or mixed.*
- *A sodium/potassium ratio between about 2.5 and 15.*
- *A calcium/magnesium ratio between 4 and 10.*
- *A phosphorus level between 15 and 20 mg%.*
- *Low toxic metal levels.*
- *Good trace element levels.*
- *A calcium level between 35 and 90 mg%.*
- *A potassium level between 4 and about 50 mg%.*
- *A zinc level between 13 and 22 mg%.*
- *An aluminum level less than 0.2 mg%.*
- *No four lows pattern present.*

2. Medium vitality indicators:

- *Somewhat elevated level of one or two toxic metals.*
- *A mild oxidation rate, either slow, fast or mixed.*
- *A sodium/potassium ratio between 1.5 and 15:1.*
- *A calcium/magnesium ratio between about 3 and 11.*
- *A phosphorus level between 12 and 20 mg%.*
- *Somewhat reduced levels of zinc, chromium, selenium or mild elevation of iron or manganese.*
- *No four lows pattern present.*

3. Lower vitality indicators:

- *A high level of one toxic metal or somewhat elevated levels of several toxic metals.*
- *A more extreme oxidation rate, especially slow.*
- *A sodium/potassium ratio less than 1.5 or above about 15.*
- *A calcium/magnesium ratio less than 3 or greater than 11.*
- *A phosphorus level less than 12 mg%.*
- *Reduced trace elements such as zinc, or elevated copper, manganese, iron, chromium or selenium, except if one is using a selenium-based shampoo.*
- *The presence of a four lows pattern.*

Chapter 25 discusses vitality in more depth.

WESTERN PHYSIOLOGY, BIOCHEMISTRY, MICROBIOLOGY, HISTOLOGY AND OTHER STANDARD MEDICAL SCIENCES

Development uses Western medical sciences in an unusual way by relating their concepts and facts to:

- *Specific stages of stress and metabolic types.*
- *Specific nutrient deficiencies or toxic metal excesses that alter particular enzyme systems.*
- *Specific mineral levels, ratios and patterns on a hair mineral analysis.*

BIOCHEMICAL INDIVIDUALITY

Each person has somewhat individualized nutritional needs. People's nutritional needs vary depending upon heredity, age, lifestyle, temperament, occupation, stress levels, and illnesses. They also depend on the metabolic type, mineral ratios, the presence of toxic metals and other subtle factors such as the level of mental development. The idea that everyone has the same nutritional needs is simply incorrect.

Implications of biochemical individuality:

- *The RDAs (recommended daily allowances), MDRs (minimum daily requirements) or similar standards are of lesser importance for optimal health.*

- *Testing for nutritional needs and tailoring nutrition programs must be done for best results.*
- *Even with hair testing, at times healing programs must be further altered to fit a person's individual needs.* Experienced practitioners understand this well.
- *Government efforts to "standardize medical care" will likely continue to fail badly.* A committee in the capitol cannot simply arrive at the best way to treat everyone.

ORTHOMOLECULAR MEDICINE

Isolated nutrients can be used to heal many health conditions, when given in the right amounts. This idea was originally put forth by the late Dr. Linus Pauling, PhD, winner of two Nobel prizes. Development is a type of orthomolecular approach. However, it differs from most others in several important respects:

- *The goal of development is not to relieve symptoms, although this occurs quickly and easily in almost all cases.* Instead, it focuses on whole system responses to stress, improving overall vitality and restoring homeostasis to the entire organism.
- *With most orthomolecular approaches, the patient must often remain on a vitamin regimen indefinitely.* Otherwise, symptoms tend to return because underlying imbalances have not been addressed. With development, once the stress response is corrected, one need not remain on doses of vitamins forever.
- *The high doses of common vitamins and minerals used by most orthomolecular physicians are rarely needed with development.* Dr. Eck knew that higher, unnatural doses of anything tend to be more toxic, though they are still much safer than most drugs.

METABOLIC TYPING

Metabolic typing is a method of easing the difficulty of working with complex human bodies by classifying them in some simple way. As used in development, metabolic typing is a physics principle. In other words, it is concerned with qualities of bodies such as heat and cold, expanded and contracted, more tense or more relaxed. These are not strictly medical ideas, yet they apply to the human frame. In this sense, fast and slow oxidation are, in fact, *basic states of matter*, of which our bodies are made. These are discussed in detail in Chapters 12 and 13.

For example, matter can be more on the hot side or more on the cold side. Matter can be more contracted or yang, or more expanded or yin. Matter can be more reddish or yang or more pale or yin. These qualities are the basis for fast and slow oxidation types, as well as for yang and yin in the ancient Chinese healing arts. Other systems of metabolic typing, such as that found in Ayurveda, or that of Hippocrates and others, are often variants on the same theme.

Although it can be very helpful, cautions with metabolic typing include:

- *Metabolic typing systems are never perfect, as they are always generalizations.*
- *One must not draw conclusions with little understanding.* For example, all slow oxidizers are not the same. One must still learn each person's symptoms, health conditions and so forth.
- *One must not label people and create demeaning stereotypes.* People are not "fast oxidizers", technically. They are souls whose bodies happen to be in a fast oxidizer state.

- *One should not confuse different systems of metabolic typing.* For example, this book is based on typing people using hair mineral analysis. Other systems of typing use blood tests, urine tests or other methods. These are not the same, and will yield different results.
- *Older typing systems, such as Chinese pulse diagnosis, may not work quite as well today due to very different physical health conditions of many people today.* Several doctors have objected to the metabolic typing system in this book. They tell me I have bastardized yin and yang, and that I am not an expert in Chinese medicine or Ayurveda. I understand their perspective, but I also know that development works excellently.

RETRACING

Retracing is a fascinating process that occurs only with deep healing methods. One literally ‘returns to the scene of the crime’ and re-experiences an old infection, physical trauma or perhaps another ailment. One may also re-experience an emotional or mental event, memory or even an emotional trauma. The goal is to rework the illness or trauma, hopefully in such a way that it is cleared on every level of one’s being.

While not always pleasant, the process is the only method for fully reversing many symptoms and conditions to remove their every trace from the body and mind.

Other names for retracing. Chiropractic uses the word *retracing*. Homeopathy calls them *aggravations*. Psychology, particularly psychoanalysis, uses the word *catharsis*. Other sciences use words such as *the reversal process*, *healing reactions*, *flare-ups* or *purification reactions*. Chapter 45 is devoted entirely to this important concept.

THE WELLNESS MODEL OF HEALTH

Wellness is a lifestyle approach to avoid illness and reach one’s highest potential. It is related to high vitality. It is the idea that one can achieve a higher level of health beyond just avoidance of major illnesses. It is a key concept in development science.

Unfortunately, measuring wellness is not easy. Medical methods such as checking one’s blood pressure, height, weight, age, and degrees of artery blockages are factors in determining wellness, but are inconclusive, as are hair analysis assessments. As a result, wellness is a fabulous theoretical idea, but not that useful in clinical practice. Health authorities are now beginning to speak of wellness. They often mean a better diet and lifestyle to help prevent disease. This is an excellent first step, but high vitality or wellness is more than this.

PREDICTIVE AND PREVENTIVE MEDICINE

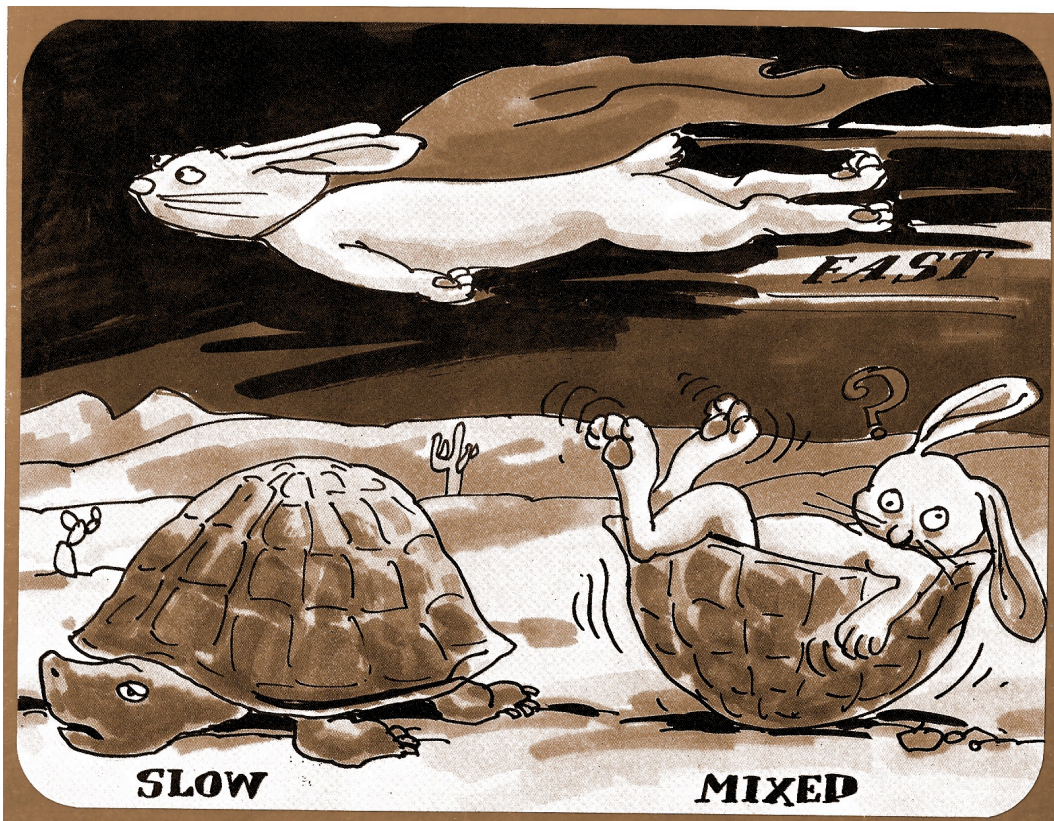
Real prevention and prediction are engineering concepts that can be of great benefit for medical care as well. One can easily predict in about how many miles a person will need new tires on an automobile based on the depth of the tire treads. In a somewhat similar fashion, one can often easily predict and therefore prevent health disasters using hair mineral analysis and development science.

By correlating over 200,000 hair mineral tests with the client’s symptoms and diagnoses, Dr. Eck identified at least 50 *trends or research associations* between mineral patterns, and physical and mental health conditions. A trend may appear on the hair test years before symptoms manifest. This is the best form of disease prevention I am aware of.

Post-modern medicine talks about prevention, but their methods such as vaccines, water fluoridation, many x-rays and “preventive drug use” are costly, unsafe and often far from ideal.

RESTORATIVE OR FUNCTIONAL MEDICINE

One can seek to restore normal functioning of the body, rather than just suppress symptoms. These are popular words in the holistic healing field. Development is a functional and restorative approach to healing. Most doctors, however, do not take the concept far enough. For example, many doctors believe that if one’s testosterone level is low, the functional medicine approach is to replace the hormone to normalize its serum level. While this can help symptoms, development goes much further by rebuilding the enzyme systems in the testis to produce more testosterone, rather than use hormone replacements.



10. MORE ADVANCED DEVELOPMENT PRINCIPLES

Mary consulted me for feelings of fatigue. Our conversation revealed that she was unhappy with her job, felt stuck in a poor quality relationship, and did not like where she was living. When asked why she didn't do something about the situation, she shrugged her shoulders. Mary had a healthful diet and got enough rest. However, her mineral analysis revealed glucose intolerance and very sluggish adrenal glandular activity. This combination can certainly cause fatigue and impair both mental and physical functioning.

After several months on a development program, Mary returned for a follow up visit. She reported that she found a new job and a new apartment, and had a new boyfriend. This is not uncommon with development. Many people feel stuck in their job, location or relationship simply due to low energy and difficulty in thinking clearly. A development program can help a person to function much better mentally and to have the adaptive energy to move on in their lives, even when that involves taking risks and leaving one's comfort zone. This process may be called personality integration, maturity or self-actualization.

CHAPTER ORGANIZATION

This chapter briefly discusses more advanced topics that are integral to development science. They include:

- *Personality integration.*
- *The mineral balancing system (specific relationships between all the minerals).*
- *Biological transmutation of the elements.*
- *Pleomorphism.*
- *Spiritual development.*
- *The chakra system as it relates to development.*

PERSONALITY INTEGRATION

This may be defined as the ability to use all of one's mental faculties in a fully coordinated and integrated manner. Development can help with this in many ways by removing blockages to normal brain functioning, improving the energy level and much more. Personality integration includes such intangibles as the willingness and ability to take risks, face challenges, and have the energy and courage to live up to one's highest potential. Some may call this self-actualization or self-empowerment. This is an aspect of life that receives little attention,

as it goes beyond the usual definition of mental and emotional health. However, it is what people want, just as they really want “natural health” or wellness on a physical level. A key to personality integration is enhancing one’s energy level greatly. Reasons for this are:

- *Self-esteem is aided by high energy.*
- *Adaptive energy is needed to take risks and make changes in one’s life.*
- *People with higher energy levels think more positively and often feel more capable of carrying out their plans.*
- *Business courses teach that "people buy vitality". This means that higher energy levels have an attractive quality that others sense and admire.*
- *Having abundant adaptive energy helps with all decision-making.*
- *Energy or vitality is often required to stand up for what you believe, especially in the face of pressure to do otherwise.*
- *Building and maintaining quality relationships can take a lot of adaptive energy.*
- *Adaptive energy in abundance helps one to feel feelings deeply, to release old traumas, and to help get in touch with real needs and desires.*

A few simple cases can help illustrate the type of changes that people report on development programs.

Case #1. The Emotional Catharsis. *Barbara went through a painful divorce two years ago. When asked about it, she assured me she had worked through her trauma with several therapists. However, she still did not feel well. Her hair mineral test showed a very low energy level with a slow oxidizer pattern, a calcium shell and a low sodium/potassium ratio. She began a slow oxidizer diet and an appropriate supplement program to rebalance her body chemistry and improve her energy. About a month into the program, Barbara experienced an emotional catharsis. She would cry at times for hours on end and could not stop rehashing the events of the divorce. After several weeks, the episodes ended as suddenly as they had begun.*

When the catharsis began, Barbara initially became angry with me. She blamed something in the healing program for making her so depressed and weepy. I explained that far from making her depressed, the program had increased her available energy and perhaps her ability to process the past to the point where unresolved conflicts were brought to the surface and automatically resolved and released. She began to realize that, in some way, the development program had allowed her to fully experience the pain associated with her divorce and she was now finally free and happy once again. It was as though the program provided a type of emotional support that she needed in order to completely process and release her divorce.

Case #2. The Wife-To-Be. *A prominent psychotherapist called one day. He asked me to set up a development program for his fiancé, who lived in another state. She sent me a hair sample. The test results revealed a low energy pattern and a few common imbalances. The young woman did not have any health complaints.*

I mailed her the dietary instructions and several nutritional supplements, and did not expect to hear back from her anytime soon. However, several weeks later she called, somewhat embarrassed. She explained that the healing program had "lifted a cloud from her mind" and she was beginning to view the world differently. Among other things, she said she could not go

through with her marriage to the therapist. In this case, a simple change of diet and lifestyle, along with several targeted nutritional supplements, had somehow shifted her entire view of herself and what she wanted in her life.

Case #3. The outburst. *A kind, mild-mannered, 30-year-old man consulted me with no specific health complaints. He said he just wanted to be "checked out" with a hair mineral analysis. I noticed, however, that he was quite agitated. His nervousness was so pronounced it was difficult to be in his presence. His hair analysis revealed a common slow oxidizer pattern and a low energy pattern.*

After several weeks on a development program, the man went through an interesting personality change. He explained to me that he had been sharing his home with a roommate for a year who did not treat him or his property with respect. On one occasion, this friend had put his fist through a wall, for example. However, since they were friends, he had not spoken up about the problem. One evening, however, the client "went berserk", expressed his anger and told the roommate to leave at once. He shocked himself in the way he was able to express his need so clearly and forcefully and resolve the problem so easily. I noticed the young man was now much calmer.

Note that in each of the instances above, improving the balance of the body chemistry enabled each one to have a better level of awareness and an improved ability to process his or her life experiences. This also somehow enabled each of them to move ahead in a positive direction. This is the process of personality integration or self-actualization.

THE BODY'S MINERAL SYSTEM

Each mineral in our bodies affects the levels of all the other minerals in extremely specific and sometimes surprising ways. They are maintained in a delicate balance, regardless of the stresses on the body. The scientist who categorized these relationships in the soil was the late William Albrecht, PhD, who worked at the University of Missouri in the early twentieth century. He designed the "mineral wheel" that is on the cover of this book, illustrating the complex interactions of the minerals. His papers, some of which are quite technical, are collected in *The Albrecht Papers*, published by *Acres USA*.

Other scientists also noticed these interesting relationships between minerals. In 1998, Dr. Robert Becker and Gary Seldon authored *The Body Electric: Electromagnetism and the Foundations of Life*. They noted that copper is needed to fix calcium in the bones. Carl Pfeiffer, MD, PhD also noted some of the interactions that occur between minerals in the body.

Development science incorporates these complex interactions in the supplement recommendations. Dr. Eck, for example, found that if one wants to raise calcium, giving calcium will not help and will often lower the hair calcium level. However, giving copper causes the hair calcium to rise easily, without even supplementing calcium. To raise sodium one gives manganese, and to lower sodium one gives zinc. To raise magnesium, one can often give calcium, while giving magnesium will not work. To raise potassium, zinc will often work well, but potassium usually will not work.

These are just a few examples of this complex, but very essential aspect of development science. Dr. Eck made use of this subtle concept in designing his formulas and his corrective programs. This is the reason they are often simple, yet very effective for correcting the oxidation

rate and other mineral imbalances. This is also why *symptomatic* nutritional programs, and *replacement therapy* to restore nutrient minerals, are much less effective, in our experience. The mineral system of the body is extremely complex and utilizes physics principles that are far beyond the scope of this book.

BIOLOGICAL TRANSMUTATION OF THE ELEMENTS

This theory states that living organisms are capable of changing one element into another at body temperature and at normal atmospheric pressure. It is a very controversial idea. Mainstream scientists largely avoid the topic, as its implications threaten the very basis of physical and biological chemistry. However, its truth has been proven over and over again. A major author and proponent of the theory is Dr. Louis Kervan, a brilliant French scientist. He wrote, among other works, *Biological Transmutations* (1966, 1972 and 1998). Dr. Kervan offers numerous simple experiments to prove the theory that anyone can duplicate.

For example, a chicken will lay eggs that contain more calcium than the amount of calcium in the chicken's diet. This has long been a mystery, since chickens do not tend to feed on high calcium foods. Biological transmutation provides a simple and elegant alternative explanation. Dr. Kervan worked out the chemical reactions that would need to take place and offers proof of how the transmutation works.

Chapters of Dr. Kervan's book sound remarkably like Dr. Eck's discoveries made through the use of hair mineral testing. For example, Dr. Kervan devotes an entire chapter of his book to the sodium/potassium ratio and how the body transmutes sodium into potassium. He notes that the ratio seems to depend upon aldosterone and cortisol. This bears great resemblance to some of Dr. Eck's work as well.

Dr. Kervan also devotes a chapter to the calcium/potassium ratio. He found evidence suggesting that the activity of the thyroid hormones regulates this ratio. This is extremely similar to Dr. Eck's conclusion that the calcium/potassium ratio is related to thyroid activity. Dr. Kervan also discusses why it is foolish and even dangerous to supplement certain minerals that may appear low in blood or hair. He explains the problem is they will be transmuted, and could cause a more severe imbalance. This is similar to Dr. Eck's clinical observations concerning replacement therapy.

Hair analysis may indeed be giving us insight into much more esoteric mechanisms the body uses to maintain homeostasis. Many anomalies and odd uses of nutrients that Dr. Eck and others discovered by trial and error may be explained by this esoteric and advanced molecular biology concept.

PLEOMORPHISM

Animal and human cells can change form and function, depending on the terrain or medium in which they live. This is an older medical concept dating back several hundred years, and also a controversial one. It is currently out of fashion, however. The word pleomorphism means many phases, many forms or many states of matter. The concept is that physical matter, especially living organisms, can take a variety of forms and change back and forth from one to another depending upon the terrain or the environment in which they find themselves. For example, bacteria might change into fungal organisms in a different environment.

The terrain includes nutrient levels, the oxygen level, the acidity, and the amount of toxic metals and other toxins that are present. These, of course, change in the human body depending on one's state of health, oxidation type, stage of stress, mineral ratios and other factors. The concept is used in dark field microscopy and in some European homeopathy texts. This theory actually predates the germ theory. While Louis Pasteur is credited with the germ theory, his nemesis, Dr. Antoine Beauchamp, championed the pleomorphic view of body cells.

Pleomorphism emphasizes the terrain, while the germ theory places much less emphasis on the environment of the cells and focuses on categorizing and killing thousands of bacteria, viruses, fungi and other forms of pathogenic microorganisms that may inhabit a human body. The two men disagreed on whose theory was best. According to written records, on his deathbed Pasteur admitted he was wrong and that Beauchamp was correct. Post-modern medicine, however, is entirely built on the germ theory and mainly ignores the terrain or overall health of the host organism. In fact, they often poke fun at "health nuts" and at most detoxification regimens designed to enhance the cellular milieu of the body.

Well-known proponents of pleomorphism include an impressive list of European, American and Canadian scientists such as Guenther Enderlein, Royal Rife and Gaston Naessens. Dr. Naessens calls it the somatid theory. He wrote:

"I have been able to establish a life cycle of forms in the blood that add up to no less than a brand new understanding of the basis of life. What we are talking about is an entirely new biology, one out of which has fortunately sprung practical applications of benefit to sick people, even before all of its many theoretical aspects have been sorted out."

According to the pleomorphic theory, all cells are capable of moving through 15 or 16 stages or forms. Only the first three or so are normal. The rest are pathological, ending with bacterial, fungal and perhaps viral forms. Dr. Eck was not aware of the connection between his research and pleomorphism, to my knowledge. However, it is possible that he identified some of the basic biochemical characteristics that cause the pleomorphic forms or changes in body cells. This is why I include the concept in this book. Below are listed the basic hair analysis patterns that I believe are associated with each of the main pleomorphic states. This needs to be researched more, however:

1. Fast oxidation, Na/K between 3-8, and Ca/Mg between 5-10.
2. Fast oxidation, Na/K less than 3 or more than 8 or so, and Ca/Mg between 5-10.
3. Slow oxidation, Na/K more than 3 and Ca/Mg between 5-10.
4. Slow oxidation, Na/K between 1-3, and Ca/Mg between 5-10.
5. Slow oxidation, Na/K between 1-3, and Ca/Mg between 2.5-5 or greater than 10.
6. Slow oxidation, Na/K between 1-3, and Ca/Mg between 1.5-2.5 or greater than 10.
7. Slow oxidation, Na/K between 1-3, and Ca/Mg less than about 1.5 or greater than 10.
8. Slow oxidation, Na/K between 0.5-1, and Ca/Mg between 5-10.
9. Slow oxidation, Na/K between 0.5-1, and Ca/Mg between 2.5-5 or greater than 10.
10. Slow oxidation, Na/K between 0.5-1, and Ca/Mg between 1.5-2.5 or greater than 10.
11. Slow oxidation, Na/K between 0.5-1, and Ca/Mg less than 1.5 or greater than 10.
12. Slow oxidation, Na/K less than 0.5, and Ca/Mg between 5-10.
13. Slow oxidation, Na/K less than 0.5, Ca/Mg between 2.5-5 or greater than about 10.
14. Slow oxidation, Na/K less than 0.5, and Ca/Mg between 1.5-2.5 or greater than 10.
15. Slow oxidation, Na/K less than 0.5, and Ca/Mg less than 1.5.

I will also list these as pure patterns. This is for research purposes in the future, and can basically be ignored unless one is particularly interested in this subject. The patterns and ratios below are those that would show up if one can eliminate all or most of the toxic metals and toxic chemicals from the body. They all are four lows macromineral patterns, but this is not the same as the four lows patterns written about elsewhere in this textbook. The pure patterns are as follows:

1. Four lows with fast oxidation, Na/K between 2.5-5, and Ca/Mg between 5-9.
2. Four lows with fast oxidation, Na/K less than 2.5 or more than about 5 & Ca/Mg between 5-9.
3. Four lows with slow oxidation, Na/K more than 2 and Ca/Mg between 5-9.
4. Four lows with slow oxidation, Na/K between 1-2, and Ca/Mg between 5-9.
5. Four lows with slow oxidation, Na/K between 1-2, and Ca/Mg between 2.5-5.
6. Four lows with slow oxidation, Na/K between 1-2, and Ca/Mg between 1.5-2.5.
7. Four lows with slow oxidation, Na/K between 1-2, and Ca/Mg less than about 1.5.
8. Four lows with slow oxidation, Na/K between 0.5-1, and Ca/Mg between 5-9.
9. Four lows with slow oxidation, Na/K between 0.5-1, and Ca/Mg between 2.5-5.
10. Four lows with slow oxidation, Na/K between 0.5-1, and Ca/Mg between 1.5-2.5.
11. Four lows with slow oxidation, Na/K between 0.5-1, and Ca/Mg less than 1.5.
12. Four lows with slow oxidation, Na/K less than 0.5, and Ca/Mg between 5-9.
13. Four lows with slow oxidation, Na/K less than 0.5, Ca/Mg between 2.5-5.
14. Four lows with slow oxidation, Na/K less than 0.5, and Ca/Mg between 1.5-2.5.
15. Four lows with slow oxidation, Na/K less than 0.5, and Ca/Mg less than 1.5.

This is quite advanced research. The implications are enormous, including the following:

- *If the terrain is all important, then diet, lifestyle, rest, sleep, thoughts and emotions should be the focus of our health care system, not drugs, surgery, fluoridation and other toxic methods.*
- *If terrain is important, detoxification of the body is critical, as development asserts.*
- *If terrain is critical, then keeping the body pure in all ways should be the goal. Morals, character development and careful education of the young are therefore of the greatest importance. The move today away from values such as total honesty and integrity in favor of political correctness and moral relativism is just plain stupid for the well-being of the society.*

MENTAL AND SPIRITUAL DEVELOPMENT

Development, as used in this book, refers to the growth or unfoldment of the subtle human bodies, sometimes called the etheric, mental, causal and other bodies. According to some, this is the ultimate goal of human existence. This type of development of a human being may be denied by many who only believe in the physical life. Others believe in mental and spiritual development, but do not think that simple items such as a diet, nutritional supplements or a healthful lifestyle with plenty of rest are needed or too helpful for this type of development. This topic is discussed in more detail in Chapters 6 and 40.

THE CHAKRA SYSTEM AND DEVELOPMENT

Development science helps develop the seven major chakras or energetic centers

of the body. This is quite wonderful, although the benefits usually cannot be seen or felt directly. Specific ways in which development helps this energetic system of the body are:

- *Enhancing vitality is necessary for the process.*
- *Replenishing vital nutrients and removing toxic metals are most necessary and helpful.*
- *An emphasis on yang foods is most helpful.*
- *Use of animal glandulars (more yang) and avoiding yin supplements and herbs are helpful.*
- *The near infrared sauna, and, in fact, any sauna can help the chakras somewhat.*
- *The Roy Masters exercise, when done regularly, is extremely helpful.*

Below are a few brief notes on each of the seven lower chakras as they relate to health and development:

The first chakra = grounding. The energy in this part of the body helps in keeping one's feet on the ground and in feeling safe as you go through life. Everyone today needs help in this area. City dwellers, in particular, are often out of touch with the earth due to living in high rise apartments surrounded by electromagnetic pollution, poor air quality, noise, toxic chemicals in the building materials and elsewhere, and not enough vegetation for optimum wellness.

The glands most associated with this chakra are mainly the adrenals. Nutrients that appear most important for the development of this chakra include zinc, selenium, chromium, manganese and others that have to do with vegetative functions such as blood sugar regulation.

Development of this chakra is very critical for *women* today. They used to be more grounded thanks to rural lifestyles. Today, starting at an early age, girls are encouraged to excel in school and to enter the business world. This takes them away from a grounded and centered lifestyle. As they grow up, women often focus on their appearance, which is totally superficial and ungrounding. Sitting in front of computers for hours, and wearing high heels and sexy clothing continues to detract from the grounded nature that women love and need. They become insecure and overachieving, which damages their health tremendously. Some women turn to homemaking, and this is helpful to a degree.

Men today are often far more grounded than their women. Their greater sexual desires tend to be quite grounding. In addition, their upbringing actually tends to cause them to be more grounded than in previous decades and centuries. They are trained today to sit quietly in offices, repair machinery and do other "dirty" jobs that tend to be quite grounded in many cases. This is not traditionally the way societies trained their men, as in earlier times they needed to be fierce warriors to defend the tribe.

The effects of modern society in these ways has been to cause a type of role reversal that is good for the men, but not for the women. The women suffer more "burnout" and sympathetic dominance, while the men are having somewhat fewer problems in these areas. This is particularly important for child-bearing, which requires healthy women.

Development helps the first chakra the most of all. Sugar-eating is very yin and ungrounding, and that must stop. Instead, the emphasis must be on more rest, a more yang or grounding diet with quality drinking water, and several nutritional supplements. The near infrared sauna therapy is particularly helpful for it as well. Coffee enemas and the Roy Masters exercise also focus energy on this area of the body.

The first chakra is the most important today. In most people, it is poorly developed, often spins backwards, and does not provide the firm connection to the earth that is so important for

proper development of the upper chakras. If this chakra is improved, all the others improve. This is an interesting and exciting reason why sauna therapy, especially with the light sauna, and coffee enemas as well, are helpful in a spiritual sense. This is a new way of understanding certain physical therapies, and not one that is discussed in many books that I have read.

The second chakra = development. This chakra is the beginning of spiritual development for human beings. It has to do with one-on-one relationships, usually of a sexual nature. The glands most associated with this energy center are the testes and ovaries. Nutrients that appear particularly critical for the development of this chakra include zinc, copper, manganese and other transition metals. These are metals in the middle of the periodic table of the elements. The name transition metals is appropriate, as these actually help transition a person from one state of matter to the next.

This chakra tends to be more important for those with a fast oxidation rate and a low sodium/potassium ratio. These people are in a difficult transition, which this chakra can represent and assist with. The fact that transition elements help people make the transition from fast to slow oxidation may help the reader appreciate that development science is about vital transitions that Dr. Selye called *stages of stress*. In fact, they are stages of development of a human being. Development programs help people move easily from fast into slow oxidation if that is the direction they need to be going.

The second chakra is most critical today, especially for fast oxidizers, as it is a transition to the third chakra. This means that it controls and enables a person to think clearly. When the second chakra is deranged, as it is in most men, in particular, their thinking is not clear. Men's problem in this area of the body is their higher sex hormone levels. Sadly, many women like it this way, as it gives them a certain edge or power over the men. As a result, these mothers and fathers do not encourage their male children to stop thinking about sex and start thinking more deeply. Such lower chakra thinking, however, just harms us all because without clear thinking the boys harm the girls and the cycle of misery that is called "love" just continues on planet earth. Fortunate are the young boys whose mothers and fathers teach them that sex is fine, but it is of very minor importance, relatively speaking. One's energy is best spent learning the truth about life, and not on convincing the opposite sex to engage with you in some way.

The third Chakra = beliefs. This chakra is the most common one to be deranged in modern humanity. It has to do with judgments, power, control over others and other types of information that one "feels in the gut". Most important, it has to do with the principles that one lives by. Organs such as the stomach, intestines, liver and pancreas are located in this area and have to do with this chakra. However, the sex glands are also very associated with this chakra as well. Particular nutrients involved with this chakra are those needed for the organs above. These include chromium, manganese, zinc, iron for the liver and phosphorus in protein foods.

This chakra needs balancing in almost everyone today. It is much worse, particularly in Americans, than it was say 50 years ago. The most important reason for this that I can think of was the removal of prayer and teaching religion from the schools. This was not healthy from this perspective, although it had other benefits, most likely. The third chakra, more than any other, is like a compass. It helps one to know right from wrong. Today, the principles taught in the middle schools and high schools include such insane ideas as diversity in race, sex, sexual orientation and color. I say insane because these are superficial. What is missing are the deeper principles of spiritual development that used to be taught instead. America was founded on the

idea that skin color, race, creed and religion simply do not matter and to pay no attention to them. This is much closer to the truth. The new emphasis on diversity is simply socialism in disguised form and a way to “level the playing field” that denies individual rights, another basic concept that America was founded upon that is a far more spiritually-oriented concept.

When one learns the wrong principles about life, the third chakra is deranged, often for life. It spins in chaotic ways and loses power. As a result, the person becomes weak-willed and easily influenced and swayed by politicians and others who have “charisma”. This is very damaging for society and for each person. Correcting the third chakra by reading books such as the bible, learning about Austrian economics, and listening to conservative talk radio, for example, is extremely helpful, even if seems odd at first, which it will.

The fourth Chakra = give and take in relationships. This center is a more advanced energy center having to do with partnerships and friendships, but not sexual ones and usually not just those of a close intimate type such as in a family. It needs balancing in most everyone. It is located at the level of the heart, lungs and bronchial tubes. Difficulty with this chakra can cause symptoms in these organs and tissues.

Nutrients concerned with this chakra include vitamin C, copper, zinc and many, many others because social interaction, in fact, is a higher human faculty that requires excellent nutrition. One reason for social decay in a society such as America is the decline in the overall quality of the people’s nutrition. As a result, people simply do not relate as well to each other. Prisoners often improve dramatically with better nutrition, and would do even better with a sophisticated program such as development for the same reason. Most criminals are anti-social and “getting back at society” in some way. It is so sad that the criminal justice profession does not embrace nutrition more.

This center has more to do with partnerships, real friends and other levels of give-and-take in society that occurs in business and social organizations, for example. Development may assist greatly with the development of this chakra by helping a person to be strong and clear enough to reach out to others in social relationships in a balanced and sane manner.

The fifth, sixth and seventh chakras = spirituality. These are the upper, more spiritually-oriented chakras that have to do with the nervous system, in general, and the brain, in particular. The fifth has to do with creative expression in the world. The sixth has to do with a broadening of mental understanding or wisdom. The seventh has to do with connecting with higher levels of awareness or “God”, development of the subtle bodies, and what may be called expansion of consciousness.

The gland most associated with the fifth energy center is the thyroid gland. Many women, for example, have learned to “hold their tongue”, so it is no surprise that many women also have thyroid troubles, in part for this reason. Other reasons for their thyroid problems are copper imbalance, mercury toxicity, neck tension and iodine antagonists in the environment. Nutrients important for the fifth chakra include zinc, iodine, and selenium. Men, in particular, need these nutrients badly today. Otherwise they tend to remain caught in the lower chakras and do not develop the qualities we associate with male character development such as honesty, integrity, intuitiveness and the ability to hold one’s beliefs even when challenged by authorities and peers. These are exactly the qualities needed today in politics, for example. Instead, too many politicians are weaklings, influenced by money, very corrupt and worse.

The sixth and seventh chakras are controlled by the pituitary and pineal glands to a large

extent. The sixth is located between the eyes, roughly, and extends out in front and out in back of the head. The seventh, called the crown chakra, begins in the pineal gland located roughly in the middle of the brain. It extends in only one direction, as with the first chakra. The crown chakra extends upward and usually a little backward and emerges from the head around the area of the crown of the head, which is slightly toward the back of the head.

These chakras are rarely open or active in anyone under the age of 30, and most people never develop them well. Development can greatly assist their development by helping a person set up a strong foundation upon which to build a spiritually-oriented future. Also helpful are supplementing zinc and selenium, in particular, along with a balanced mental exercise such as the meditation process taught by Roy Masters. The development of the higher centers also depends on removing at least some toxic metals. This is accomplished better with development than with any other method I am aware of.

Other aspects of development science that assist with these chakras are the use of a near infrared sauna, in particular, although any sauna may help with toxin removal. The near infrared lamps seem to have specific frequencies that also help remove certain emotional blocks to higher energy center development.

Hair analysis may provide insights regarding the condition of the first two chakras. Medical intuitives and others who can see the chakras have commented to me the following:

The first chakra. *Sympathetic dominant women*, in particular, are in need of grounding. This has to do with developing the first chakra, primarily. Activities that may help include gardening, meditating-but only with the Roy Masters exercise, wearing flat or low heeled shoes and dressing more traditionally so as not to attract the wrong kind of attention. Other helpful hints are to limit computer and cell phone use. If one must use computers and cell phones, limit the time, sit as far away as possible from computers and ground yourself, if possible. Also, limit shopping and unnecessary travel. These activities tend to be very ungrounding.

The second chakra. *Fast oxidizing men, especially those with a low sodium/potassium ratio*, often need attention in this chakra. It is usually spinning backwards due to sexual activity and other reasons. They need direction to know that life is not just about physical activity and sex. Life is also about slowing down, getting to know your sexual partner in areas other than the physical relationship, and moving on to higher aspirations and goals.

This is often most deranged in fast oxidizers as well. However, everyone needs work in this area. This is why the correct study of authors who have the deeper principles correct is almost essential, and sadly lacking in the colleges, for example. Meanwhile, reading the work of Karl Marx, Lenin, Mao Tse Tung and Hitler is sure to derange the third chakra in most gullible people. Sadly, this is what is taught today on many college campuses. This situation will change, I believe, soon because the ideas of the “great dictators” are totally incorrect and eventually the young students will rebel when they realize their professors are wrong.

11. STRESS, THE STRESS RESPONSE AND THE AUTONOMIC NERVOUS SYSTEM

Marie, age 28, suffered from severe panic attacks, premenstrual syndrome, a stubborn case of eczema, severe anxiety, very extreme insomnia, fat and sweet cravings, allergies, dry skin, cold in winter, a low body temperature, acne, recurrent kidney and respiratory infections, irritable bowel syndrome, menstrual cramps and thoracic outlet syndrome due to an extra rib. She was fearful and prone to depression. She also experienced episodes where her body would just shake uncontrollably. She ended up in the emergency room every few months due to panic episodes that left her exhausted and even more frightened.

Her first hair mineral analysis revealed a slightly slow oxidation rate and a sodium/potassium ratio of 1.22. This indicates hidden copper toxicity, quite severe chronic stress and often chronic infections, tissue catabolism, extreme adrenal weakness and intense feelings of frustration, resentment and hostility. Arsenic was slightly high. Aluminum was elevated, which usually indicates the presence of hidden iron and manganese as well.

Marie ate decently and tried to care for herself well. However, she ate a lot of wheat, fruit, jellies, crackers and not enough cooked vegetables. With an improved diet and very few supplements, since she was sensitive to them, her sleep improved within a month from 2 or 3 hours nightly to 8 or 9 hours. This ended most of her panic attacks and episodes of shaking, and at least gave her some hope. She also began to use a sauna and do coffee enemas.

Within only a few months, her energy improved dramatically and she reported feeling happy for the first time in years. Within a year, a chronic respiratory infection flared up and then went away. Her racing thoughts also stopped for the most part. She discovered that eating garlic, which is high in selenium, makes her feel better. She still needs 10 or 11 hours of sleep to feel her best, but she functions excellently most of the time if she gets plenty of rest and sleep. She remains extremely sensitive, so much so that she said a simple massage made her depressed for hours. She is much too hard on herself, she says, and this may be reflected on hair mineral retests because she often dips into a four lows pattern. This is associated with individuals who are somewhat compulsive and very rough on themselves.

Development focuses on understanding and modifying the stress response. While all healing methods reduce stress in different ways, development is centered upon the somewhat complex principles of both engineering stress theory and Dr. Selye's stress theory of disease. Knowing this will help practitioners to understand, for example, why many healing methods are not suggested in this book, while a few come highly recommended. This chapter discusses many important concepts related to the stress response.

DEFINITIONS

The words below are critical to be able to describe and appreciate development:

NOURISHMENT. This is any factor or event that living organisms need, either continuously or at times, in order to survive and thrive. Obvious ones are food, water, air and perhaps warmth. However, they also include many less obvious items and events such as rest, friendship or love.

STIMULI. As used in this book, stimuli are events or substances that may seem essential, but really are not needed. Physical stimuli include cold, loud noises, excessive heat, wounds, food items that mainly irritate the body, and drugs of many kinds. Mental and emotional ones include anything that provokes fear, anger, guilt or other negative emotions or thoughts. Spiritual stimuli are usually called temptations and include bad habits, stealing, lying, cheating and so on. Stimuli of any kind cause the process that is called *stress* or the *stress response*. This phenomenon involves the sympathetic nervous system, the glands, and every aspect of the body, as it responds or attempts to adapt to stimuli.

STRESSORS. As used in this book, stressors are the same as stimuli. In other words, a stressor is anything or any event that causes stress and the stress response. Nourishment, by this definition, does not cause the stress response to any significant degree. That is the true difference between nourishment and stimuli. Even nourishment, such as eating a healthful meal, causes a slight stress response, but relatively little compared to stimuli or stressors.

ADAPTATION. This is the process organisms go through as they change and compensate in response to stimuli or stressors of all kinds. Organisms adapt to stress, in other words, by changing themselves to accommodate it as best they can, while maintaining their physical and biochemical integrity as much as possible.

ADAPTATIONS. These are the changes our bodies make in thousands of parameters such as blood sugar, blood pressure, and mineral levels and ratios, as they adapt or change themselves in response to their ever-changing environment. These changes and behaviors may be *adaptive*, which means *helpful or valuable* for the survival of the organism. They may also be *maladaptive*, which means the changes that are made are *not helpful or not valuable* for the survival of the animal or person.

Life presents us with a constant barrage of stimuli and some nourishment. We must learn to distinguish between the two and to choose the nourishment and reject the stimuli. When ill, this is even more important. This includes a nourishing diet and lifestyle, for example. Nutritional supplements also either nourish or stimulate to some degree. The hair mineral analysis can help distinguish which are needed at a given time. Mental and emotional nourishment, rather than stimuli, are also important for all of us.

All symptoms are adaptations. Development views all illnesses, even serious ones such as diabetes and cancer, as adaptations. This is quite different from post-modern medicine that tends to view most symptoms as harmful and just to be eliminated. For example, depression can be adaptive if it forces a person to slow down and rest more. It is maladaptive if it causes a person to abandon all his friends or commit suicide. However, in both cases, it is more than just a symptom or disease, as medicine views it. In this manner, the language of the stress theory of disease allows us to have a much deeper understanding of the body and its ailments. Other Implications of these definitions include:

- *Everyone confronts constant needs for nourishment and must also avoid stressors and stimuli.* No one escapes this process for more than a few minutes, in fact.
- *Nourishment always tends to reduce stress. Stimuli tend to increase stress.*
- *Learning which items, events and behaviors are nourishment and which are stimuli is a key to survival, health and long life.*
- *The time factor can be confusing in this effort.* For example, that which seems pleasant now may later cause stress. A shot of whiskey can feel great, but later damages the liver and kills brain cells. Conversely, that which is painful or unpleasant now may be nourishing in the future. Eating a nutritious meal can make one want to just sleep. However, the next day one may feel much better.
- *Even location can confuse us.* A stressful item or event in one place may actually be nourishing or even life-saving when one goes elsewhere. Packing a bulky winter coat for a trip to Alaska may seem stressful at home, but is life-saving when one arrives in Alaska.
- *False or conflicting perceptions often confuse one's judgment regarding nourishment and stimulation.* A friend may tell you to wear high heels because you "look great". The friend does not realize they cause pain in your feet and your back. Confusion may thus arise as to whether high heels are really nourishing for you or not.
- *If there is no response to a stimuli, there is no stress response.* For example, loud noise is only stressful if you must listen to it. If you wear earplugs and cannot hear the noise, it will not provoke a stress response, although the noise is present in the environment. This applies to all stimuli, both internal and external to an organism.

TYPES OF STRESS-PRODUCING STIMULI

Stimuli can be of many kinds. There is some overlap in the categories below:

- *Primarily physical.* These might include heat, cold, breaking an arm or leg, toxins of all kinds, infections, nutrient deficiencies and others.
- *Primarily emotional.* These include feelings of fear, anger, hatred or other emotions.
- *Primarily mental.* These include fixations, imbalanced thinking, errors of judgment, cloudy or foggy thinking, hallucinations, delusions and other mental phenomena.
- *Internal or external.* Internal stimuli come from within the body and include fatigue, effects of an infection or the presence of a toxic metal. External stressors might include financial or family stress, social problems, excessive heat or cold, accidents and others.
- *Acute or chronic.* Acute might be a loud explosion or a bright light suddenly shined in the eyes. Chronic means longer-term such as living in polluted air or eating junk food for years.
- *Conscious or hidden.* Conscious includes anything you are aware of such as freezing cold temperatures, or a fear of cancer that you know about. Hidden stressors include radiation exposure you are unaware of, subconscious attitudes and thoughts, or the effects of childhood traumas you have forgotten or suppressed.
- *Systemic or local.* Some stressors affect the entire body and mind, such as fatigue and some nutritional deficiencies or toxic metals. Others are local, meaning they mainly affect just a part of the body. Some only affect the muscles, such as lifting weights. Noise affects mainly the nervous system. Others might affect the spirit nature of mankind, such as watching too many disasters or negative messages on television.

- *Very targeted for an individual or of a general nature.* Some stressors are very individualized, such as having to be around a cat if you are allergic to cats. Other people can be in the same situation without a problem. However, other types of stressors, such as being caught in a flood or a fire, affect everyone.
- *Spiritual stressors.* These are stressors that essentially tempt one to say, think or do something that is not in one's best interest. They may include temptations to use illegal drugs, steal from a department store, tell lies to get ahead, compromise your values and principles to make money or get a job, and so forth. In each case, one is tempted to depart from principles of honesty, integrity and wholesomeness. Many succumb to such stressors, and resisting can also be stressful. However, resisting temptation sets up a type of corrective stress or positive stress that builds character, wisdom and inner strength.

Implications of understanding all the types of stressors or stimuli:

- *One's total exposure to stress is a combination of all these types of stressors.*
- *It is important not to omit any of them when considering a person's total stress load.*
- *It is usually far easier to control internal stressors than it is to control the world outside.*
- *Stressors one is unaware of are often the most harmful, as they act without your even attempting to counter them.*

STRESS AND ADAPTIVE ENERGY

Adapting and responding to any stimuli or stressor uses up adaptive energy of the body. Therefore, the less the body must adapt, the more energy it will have. This principle is discussed elsewhere in connection with the principle of vitality. I mention it here because it is also an essential stress principle. For example, a balanced and flexible oxidation rate requires the least amount of adapting to stimuli derived from the oxidation states, and therefore it is the highest energy metabolic state. Very slow oxidation involves far more adaptation, so the energy level of the person is lower. Restoring health and adaptive energy involves reducing the amount of adaptation the body must engage in. This, in turn, means reducing and eliminating as many stimuli as possible.

Stress and death. Too much stress, especially if it causes intense physical or emotional pain, causes most people to want to die. This is a major cause of death that is not considered in medical thinking often enough. This is also the reason this chapter is very important and not just a theoretical concept.

THE STRESS WAVE

The body's response to stress is in the form of a wave. This is a critical concept, though it may seem esoteric. It begins with a *resting* situation. There follows a phase of *excitation*, followed by a phase of *relaxation*, and then a return to the resting phase. This is somewhat like an ocean wave with an up phase, followed by a down phase, and then a return to a baseline level. It can be seen clearly, for example, on an electrocardiogram, which is the way the heart responds to stress. The stress wave can be momentary, daily, monthly in the case of the menstrual cycle,

seasonal or it can span a lifetime. However, the idea is the same regardless of the time frame. The following story may be helpful to illustrate the principle of the wave:

The “up” phase of the wave. While walking to work, a pedestrian must cross a busy street. Having looked both ways, he strolls out into the street. Halfway across, a car approaches suddenly at high speed. In an instant, the body secretes more adrenaline, noradrenaline and other stress hormones, and the stress response begins. Blood rushes to the brain and to the muscles to prepare to fight or run. The pulse and blood pressure increase to pump even more blood to the brain and muscles. Glucose and insulin also pour into the bloodstream to prepare the pedestrian to run away. The pupils dilate and the hearing and sight become sharper. In short, the entire body goes on high alert or “code red”. This is like the upward movement of the wave.

A catabolic and destructive state. At the same time that blood rushes to the muscles and brain, it flows away from all the glands and organs that are not essential for defense. These include the stomach, intestines, pancreas, liver, thymus, kidneys and others. As a result, for example, the orderly digestion of the pedestrian’s breakfast comes to an abrupt halt. Elimination may occur in an uncontrolled way or it stops altogether. The body’s ability to fight infection also diminishes, since healing an infection is not at all important at this time. In this fashion, the stress response stops or inhibits many vital body functions.

This is like taking most factory workers away from their jobs so they can fight a war. It is occasionally fine, providing it is a real emergency and only extends for a short time. However, if it continues, the nation begins to starve for workers and the production of goods slows down. In fact, all militaristic nations such as North Korea and the former Soviet Union suffer and are often destroyed for this reason.

The “down” or recovery phase. Let us assume the pedestrian runs out of the way of the car and reaches the side of the road. He finds he must sit or lean against a railing for a few minutes to catch his breath and calm down. The body slowly clears the blood of the excess hormones, sugar, cholesterol and many other chemicals, and the blood circulation and respiration slowly return to normal levels. This is the recovery phase of the stress response, and corresponds to the trough of an ocean wave. After a few minutes, the pedestrian resumes his walk to work.

The cause of disease. Life can be viewed as a process of responding to millions of these stress waves all day long, year after year. The waves are needed to cope with emergencies or threats of emergencies. Sooner or later, however, the system gets knocked out of kilter and the body becomes mired or stuck in a permanent stress response. *Fast oxidation* is the first of these permanent stress responses and is a more or less continuous fight-or-flight response.

After a few years of fast oxidation, in most cases the body cannot maintain this permanent state of alertness or alarm. It then sinks into an even worse condition called *slow oxidation*. Here the stress response system is so deranged and out of kilter that even when a threat develops, the body cannot mount a full stress response. Since this is like a nation without proper defenses, disease is common and death often occurs. Slow oxidation is like wearing out the military so that when a real threat arises it cannot respond properly.

Sub-oxidation or four lows. An even more deranged stress response may also occur. A body in a four lows mineral pattern is trying to respond like a fast oxidizer but it is ineffectual, meaning the body does not respond properly at all. Instead, it just wears itself down more, like a car stuck in a ditch spinning the wheels. This is where most people succumb to death. In summary, the stress wave:

- *Begins with a resting level that corresponds to a calm ocean.*

- *Goes into a state of heightened metabolic activity or an alarm reaction when a stimulus triggers a stress response.* This corresponds to the peak of the wave.
- *When the emergency is over, and assuming one survives, a recovery phase follows.* This corresponds to the trough of the wave.
- *After a recovery phase, the system returns to the baseline state, like a calm ocean.*
- *Since the waves keep coming day after day, the stress response mechanism becomes damaged in most people at a very young age.* This is the basic cause of the oxidation types and of most human illness, from a stress perspective.
- *We cannot entirely stop the waves from crashing into us, but it is rather easy to reduce the waves in most cases.* Also, much can be done to strengthen the body in order to enhance its ability to respond properly and vigorously to the stress waves.

STRESS ASSESSMENT USING HAIR MINERAL ANALYSIS

A hair mineral analysis, when interpreted properly, allows one to do a rather thorough *stress analysis* on the human body quickly and inexpensively. Repeat hair mineral analyses during a development program can provide even more information. The large subject of hair analysis interpretation is discussed in Chapters 20-24. This short section just focuses on some of the principles, which include:

- *Any and all imbalances on a hair test most likely represent stress on the body.* These would include mineral deficiencies or excesses, bioavailability indicators, the presence of toxic metals, and any imbalanced ratios or other patterns that are present.
- *The more imbalances that are on a test, the more stress is likely present.* For instance, a slow oxidation pattern, by itself, indicates less stress than slow oxidation with a low sodium/potassium ratio and a potassium level of 2 mg%.
- *The more severe the imbalances, as a general rule, the more stress is present.*
- *A hair mineral analysis can often help determine what kind of stress is present.* For example, it may indicate stress caused by a lifestyle factor or an attitude. It might also reveal stress caused by pushing oneself hard. It may indicate stress due to excessive toxic metals or nutrient deficiencies. It may show stress due to overeating on carbohydrates or perhaps stress due to a vegetarian or low-protein diet. It might indicate stress due to particular mineral imbalances such as fast oxidation, four highs or a four lows pattern, each of which are different in their qualities and their effects.
- *The meaning of a level, ratio or pattern may be different depending on whether it is an initial hair test or a retest.*
- *Some hair mineral patterns indicate the effectiveness of the body's fight-or-flight mechanism.* The order of effectiveness of the stress response is roughly as follows:

1. *Fast oxidation with a normal sodium/potassium ratio.* This is the most effective.
2. *Fast oxidation with a low sodium/potassium ratio.* It is less effective, but still potent.
3. *A four highs pattern.* This is much less effective, but still somewhat powerful.
4. *Secondary hyperthyroidism or Grave's disease.* This interesting condition may represent a very ineffective or partial stress response that is dangerous for health.
5. *A four lows pattern.* This is least effective and most dangerous way to respond to stress in the long term.

- *The imbalances revealed on a single hair mineral test only indicate the top layer of stress patterns.* Deeper layers that will be uncovered on retests will reveal other stress patterns, usually from the past, as they are uncovered and retraced or unwound as a result of following a development program.
- *The later the stage of stress, according to the stress theory of disease, the more chronic and deeper or layered is a person's stress.* For example, in comparison with a fast oxidation pattern, a slow oxidation pattern usually indicates more chronic stress and many more layers that are underneath it. A four lows pattern on an initial hair test generally indicates even more chronic and deeper patterns of stress.

THE IDEAL STRESS RESPONSE

The ideal stress response is no response at all! This does not mean that one just sits around if, for example, a car is hurtling toward oneself. However, it means that the body would respond without too much fanfare or exaggerated response. Books describe Eastern yogis, for example, that manage to stay calm when the temperature is very cold, or if they eat a toxic morsel of food. Their bodies do not overreact and they handle situations with calmness and clarity.

On a hair analysis, this would mean that one maintains a fairly balanced oxidation rate. To do this one must be able to absorb or "digest" every experience without reacting excessively to it. To do this perfectly is impossible in a physical world. It could only occur if one is not attached at all to any physical or emotional state or condition. Since one is located in a particular place in space, this is a type of attachment and if someone pushes you out of your place, you will react. However, on an emotional level, detachment or non-attachment is much more possible. In the New Testament of the bible, Jesus referred to this as being "in the world, but not of it". This is a key to long life, health and happiness precisely because you will react less to events and people around you.

Strengthening the body also helps one to be less attached physically and emotionally. A healthy physical body handles all stimuli or stressors better. This is one rationale for eating well, resting sufficiently and taking other steps to improve physical health. This will not stop one from reacting, but often the reactions will be more mild, easier to control and perhaps easier to avoid. Improving physical health can help one cope with everything from invading bacteria or viruses to negative thoughts, fearful emotions and physical, social or financial hardship. *An important principle of nutritional therapy is that reducing **internal biochemical stress** on the body so it becomes healthier will enable one to better handle far more **external stress**.* This brings us to a general discussion of how to work with stress in one's life.

WORKING WITH STRESS

Options for handling stress from people or events include:

- *Eliminate it.* This is usually done by fighting it or running away. One might destroy the source of stress, such as killing germs or defeating an enemy of another sort. Running away may include divorcing a person or quitting a stressful job.

- *Reduce its potency or effect.* This can be done in many ways, depending on the source of the stress. One might need to wear more clothing to reduce the effect of the cold of the winter, for example. One might wear earplugs to protect against noise, or work to resolve hidden traumas to reduce one's emotional triggers and other problems that traumas can cause.
- *Learn new coping skills.* This can be something of a physical nature, such as taking karate lessons to physically defend yourself. It might be learning a new coping skill on an emotional or mental level. For example, one might adopt new attitudes or beliefs that empower you or help render a source of stress much less irritating or harmful.
- *Detach mentally and emotionally.* This is a particular type of coping skill. In a very general sense, it might be described as "dying to the world". It is an ancient approach discussed in the bible and elsewhere. One must realize that life is not primarily about physical existence in this world. One must learn that many of the wants and needs of the physical brain and body are false, and simply the result of false conditioning. This helps one let them go and can reduce stress immensely. This does not mean becoming a martyr or a hermit. It merely means releasing old attachments to people, places and things so that changes in these affect one much less.
- *Learn about identity exchange, vampirism and soul retrieval.* These are more advanced stress topics that are very important. An article at www.drlwilson.com discusses these topics.

POSITIVE ASPECTS OF STRESS

Most therapies, including development, add some temporary stress. This is needed to cause a correction. In fact, any type of change, even speeding up a very slow oxidation rate, adds some stress to the body. Just following a diet or even just using a sauna adds a little stress. This occurs because almost any intervention tends to interrupt or break the patterns a person is accustomed to. The very act of breaking an old pattern is stressful to a degree. For success with development, a person must be willing to go through a little stress that occurs when changing one's diet or lifestyle, and due to changes in body chemistry.

Developmental stressors. An intriguing positive aspect of stress is that it can act as a force to move people ahead in their physical, mental, emotional and spiritual development. This may be called the *evolutionary impact of stress*. Essentially, applying the right kind of stressor at the right time causes a reaction or effort by the body or mind to overcome the stressor. The effort brings into play more life force energy, which, in turn, causes an evolutionary or developmental change. A simple example is body-building. If one wishes to have stronger arm muscles, then one works or stresses those muscles. This actually causes a little more life force or vitality to be applied in the nerves leading to the arms and in the muscles themselves. This results in the development of larger arm muscles.

A more subtle example is teaching discipline or emotional control to a child. One must force the child to obey a few rules, such as finishing a project or cleaning up the bedroom. This stressor forces the child to apply more life force energy or vitality to the task at hand. The added stress sends more adaptive energy through the nervous system and this actually develops a part of the brain to a greater degree. MRIs and other brain scans have actually shown that people who use their minds more will develop certain areas of the brain to a greater degree.

This is a wonderful type of positive stress principle. It explains why people who had a difficult childhood, for example, often excel if they can overcome the negativity of their early

life situation. It is also the reason why coddling children or adults, as is done in welfare states and socialist nations, is not a wise idea. Of course, this is not an argument for starving people or working them to death. However, it is an argument for allowing people to make their own way as much as possible, and for encouraging hard work for the maximum human development.

THE AUTONOMIC NERVOUS SYSTEM

Definition. The autonomic nervous system is a set of nerve centers in the brain and elsewhere that controls the body's response to stress, among other functions. Its purpose is to protect the individual from the ravages of the internal and external environment.

Shifting the gears. One function of the autonomic nervous system is to switch the body, in a second or less, between 1) a state of rest, relaxation and regeneration, also called the *parasympathetic state*, and 2) a fighting response called the *sympathetic state*. In almost everyone, the autonomic nervous system is overworked and quite out of balance. Reasons for autonomic nervous system imbalances include:

- *Stress from any source, especially of long duration.* This forces the body into a sympathetic or fight-or-flight mode of operation too much of the time.
- *Improper nutrition.* The nervous system requires dozens of nutrients that are low in the food supply. Improper eating habits only make the problem worse.
- *Fatigue.* This is an extra stress factor that also activates the sympathetic nervous system.
- *Chronic infections anywhere in the body.* These often spew toxins into the bloodstream that act as intense irritants to the nervous system.
- *Unconscious emotions and traumas.* These can often trigger fight-or-flight reactions.
- *Consciously holding on to traumas.* Adults tend to recall traumas that retrigger their sympathetic nervous system. This is extremely common. People regularly relive their car accidents, floods, fires, robberies, rapes and other scary events instead of learning how to let them go. Proper counseling and the Roy Masters meditation-observation exercise, with other methods including nutritional correction, can be helpful for this problem.
- *Toxic metals and toxic chemicals.* These can irritate, stimulate, disrupt and otherwise alter the stress response. The exact action depends on which metals or chemicals are involved, and where they are lodged in the body. Toxic metals can also increase emotional responses. For example, iron is associated with rage, and copper toxicity is associated with emotionality. The toxic metals also interfere with proper digestion and absorption of nutrients.
- *Poor decisions.* These create tremendous extra stress for many people. Examples range from using drugs or alcohol to spending too much money. The Roy Masters exercise is excellent for this group of people, along with an improved lifestyle and emotional control.
- *Inability to cope with stress.* This refers to the ability to “roll with the punches”. An important reason for this is poor health, though at times one must learn new coping skills.
- *Incorrect ideas, attitudes or beliefs.* Attitudes such as paranoia, victim thinking or aggressiveness tend to enhance stress responses. In contrast, a belief that God is good and is in charge of our world can help tremendously to reduce some types of stress.
- *Lack of emotional control.* This also sends many people into a fight-or-flight reaction.
- *A cringing posture and general body tension.* An unusual stress factor is a cringing posture. This common posturing tightens the muscles of the upper back and neck, and often tightens the pelvis as well. A quick look at an anatomy book reveals that these are precisely the

spinal nerve areas that activate the sympathetic nervous system. In other words, by tightening the muscles in these areas, one can slightly compress the nerves and stimulate the sympathetic ganglia located here. Poor posture eventually leads to a chronic tension on these nerves and more permanent derangement of the autonomic nervous system. This may help explain some of the benefits of chiropractic, Rolfing, deep massage, yoga, tai ch'i, deep breathing and other methods that correct the posture and release muscle tension in the body.

ASSESSING THE AUTONOMIC SYSTEM USING HAIR MINERAL ANALYSIS

Hair analysis patterns related to various states of the autonomic nervous system include:

- **High sodium/potassium ratio** = a more acute stress and inflammation indicator.
- **Low sodium/potassium ratio** = a more chronic stress indicator. It may also indicate weakness of both branches of the autonomic nervous system, especially with slow oxidation or if the phosphorus level is less than 11 mg%. Symptoms include fatigue and often negative emotional states.
- **True fast oxidation (with a normal Na/k ratio)** = stuck in a sympathetic state. Mild fast oxidation is normal in babies and young children. Many, however, are in “overdrive”, which causes irritability, ADHD, infections and other problems.
- **Fast oxidation with a low sodium/potassium ratio in a young child** = a more chronic stress pattern, but still a relatively early pattern of stress in the stress theory of disease.
- **Slow oxidation** = stuck in an unhealthy parasympathetic state due to “burnout” of the sympathetic nervous system in almost all cases. This is the situation of most adults and many older children, as well.
- **Sympathetic dominance** (potassium below 5 mg%) = a person acts as though he is still in fast oxidation, even though the body has moved into slow oxidation. This places a lot of stress on the body and usually leads to serious illness if it continues. Many with this pattern take on too much work, or worry excessively. Toxic metals may contribute to the tendency to feel like one is being chased by a tiger all the time. Such people may be tense, “uptight”, stress-seekers or anxious. They enjoy or are used to *powering through* their fatigue, their problems and their entire lives, at times. This is done by activating the sympathetic or fight-or-flight system to give them the energy to keep on going when they are exhausted. A person in this condition may also talk, think, eat or work at a rapid pace, faster than the optimum.
- **Three highs or four highs** = a secondary acute stress response or “second wind”.
- **Toxic metals** = this causes irritation of the nervous system.
- **A calcium/magnesium ratio between about 9.5 and 13.5** = eating too many carbohydrates may cause this type of blood sugar stress.
- **Spiritual defensiveness** (calcium/magnesium ratio above 13.5) = lifestyle stress. Something in the lifestyle or perhaps an attitude is causing stress and needs to change.
- **Three lows, also called the *overwhelming stress pattern*** = the stress level is not sustainable and a person is close to moving into a four lows pattern.
- **Four lows pattern** = an end stage stress pattern characterized by low levels of all the macrominerals, and usually great fatigue. Malnutrition may play a role in some rare cases, especially when the pattern occurs in young children or babies.

RESTORING THE AUTONOMIC NERVOUS SYSTEM

Restoring the autonomic nervous system is a gigantic task that may involve many or even all of the factors below.

- *Rest.* This is the most important of all. There is no substitute for at least 9-10 hours of sleep every single night. Most people also need a morning or afternoon nap as well. This allows the nervous system the time to rest and rebuild. The hours before midnight are much better for sleeping, so one should go to bed early, by 9 PM at the latest, whenever possible.
- *Activity.* Exercise is a powerful sympathetic stimulant. Avoid excessive activity of any kind. Reduce even gentle exercise to no more than a half to one hour several times a week. Also avoid becoming exhausted while exercising or while doing anything else.
- *Diet.* Animal protein is particularly helpful for the brain and nervous system, as it contains fats and proteins essential for the nerves. These include the omega-3 and omega-6 fatty acids and many others. Excellent foods for the nervous system are eggs, meats, nuts, root vegetables and a little oily fish such as sardines and salmon.
- *Nutritional supplements.* Supplements must be appropriate for one's oxidation type and rate, and for the other mineral ratios as well. In addition, calming symptomatic nutrients include calcium, magnesium, selenium, manganese, zinc and chromium. Other calming nutrients include GABA, L-aurine and a product called ICMN from Endomet Laboratories in Phoenix, Arizona that contains inositol, choline, methionine and niacinamide. Mild herbs that help the nervous system include valerian, chamomile, passionflower, skullcap and hops.
- *Reduce all harmful stress.* Stress activates the sympathetic nervous system and can arise from within the body or from outside. Both are equally harmful to the nervous system. Reducing stress includes correcting a cringing posture and relaxing the entire spine with chiropractic, osteopathic work and other methods.
- *Correct thinking and beliefs.* Improper thinking or out-of-control emotions are major sources of stress for millions of people worldwide. Chapter 2 discusses correct thinking in more detail. The Roy Masters meditation exercise and other modalities such as counseling, biofeedback, attending worship services and support groups may also help. Other hints are to surround yourself with uplifting books, CDs, films and other spiritually-oriented materials. Also, pick your friends and relationships carefully. Work, school and all your activities either contribute to your contentment or detract from it. A wonderful and simple spiritual practice to release resentment is to practice forgiveness and gratitude each day. Catch yourself whenever you do not forgive everyone in the world for all that you believe they have done to you or failed to do for you. This also helps undo the very damaging idea of feeling like a victim.
- *Cultivate contentment.* Contentment is different from feeling happy or excited. Happiness, as most people know it, is often short-lived. It is often an attempt to overcome feelings of unhappiness. Contentment or joy, in contrast, is a state in which you are at peace with yourself and the world, even if the world around you is not to your liking. It is possible to choose joy and contentment, rather than anger and hatred for those who disagree with you.
- *Avoid comparing yourself with others.* Comparisons often lead to fear and anger. The world is never fair from our limited perspectives. However, much is hidden from our view. If you knew more about others' lives, you might be less hasty to compare yourself with them.

- *Breathe deeply, slowly and consciously.* Breathing is an ancient method of controlling the autonomic nervous system. Breathing is one of the few bodily functions that is under the control of both the conscious and the autonomic nervous systems. By controlling breathing, one can indirectly control the autonomic nervous system. This is one reason breathing exercises are so important in yoga and other ancient healing systems. Regular, slow, deep breathing, by itself, turns off the sympathetic nervous system. Most people will need to practice this every day to obtain lasting results.
- *Detoxification.* This is extremely important to restore the autonomic nervous system. Toxic metals and toxic chemicals irritate and stimulate the nervous system in everyone today. Sauna therapy, coffee enemas, colonic irrigation and development programs will slowly eliminate this cause of nervous system toxicity.
- *Other natural therapies.* Chiropractic, bodywork, hand and foot reflexology, the chi machine, perhaps using a backswing or inversion table, and other methods such as cranial osteopathy can help relax the nervous system and may be essential for some people.
- *Therapies such as soul retrieval are interesting as concerns reducing certain types of stress.*

Chart of the Sympathetic and Parasympathetic Nervous Systems

	<i>Sympathetic System</i>	<i>Parasympathetic System</i>
<i>Function</i>	To defend the body against attack	Healing, regeneration and nourishing the body
<i>Overall Effect</i>	Catabolic (breaks down the body)	Anabolic (builds up the body)
<i>Organs and Glands It Activates</i>	The brain, muscles, thyroid gland and the adrenal glands	The liver, kidneys, enzyme pancreas, spleen, stomach, small intestines and colon
<i>Hormones and Substances It Increases</i>	Adrenalin, noradrenalin, cortisol, cortisone, insulin and thyroid hormones	Parathyroid hormone, pancreatic enzymes, bile and other digestive enzymes
<i>Body Functions It Activates</i>	Raises blood pressure and blood sugar, and increases heat production	Activates digestion, elimination and the immune system
<i>Psychological Qualities</i>	Fear, guilt, anger, willfulness, and aggressiveness	Calmness, contentment and relaxation
<i>Factors That Activate This System</i>	Stress, fears, anger, worry, excess thinking, vigorous or too much exercise, sugar, caffeine, other stimulants of all types	Rest, sleep, meditation, relaxation therapies, feelings loved, feelings of gratitude, peace and contentment

12.

THE OXIDATION TYPES AND THEORETICAL CONSIDERATIONS

Mary Ann, age 58, had been to many holistic doctors over the past 10 years. Her symptoms included chronic Lyme disease, uterine cancer 8 years ago (treated with surgery and radiation), constipation, impaired memory, brain fog, osteoporosis, post-nasal drip and chest congestion. Her first hair mineral analysis revealed a very sluggish oxidation rate with a calcium shell pattern. This is associated with a delicate or sensitive constitution in most cases and often with the development of cancer due to a calcium imbalance. Her calcium level was 205 mg% (ideal is about 40 mg%), indicating biounavailable calcium buildup in her tissues and probably her brain as well. This can cause memory problems and brain fog. She also had slightly elevated levels of mercury, arsenic and aluminum, and hidden copper toxicity.

On her healing program, Mary Ann began to feel stronger with more energy within a few weeks. She used a sauna daily for half an hour. Her second hair analysis revealed high lead of 0.190 mg% (ideal is about 0.08 mg%). Her aluminum level rose to 0.94 mg%. High aluminum always tends to indicate hidden iron and manganese toxicity as well. Mary Ann's calcium shell improved, with the calcium level falling from 205 to 169 mg%. She reported less brain fog and better elimination, but she was still often cranky and could not seem to organize things well.

Mary Ann's next hair test a year later was unusual, with a four highs pattern. Also, iron shot up to 6.5 mg% (ideal is about 1.9 mg%). Manganese was slightly elevated at 0.05 mg% and chromium was 0.592 mg%. Her next test, a year later, was even more dramatic with a manganese level of 0.214 mg% and a slightly higher mercury and aluminum level. She reported feeling better and better, though there were plenty of ups and downs as these metals kept being eliminated one by one.

Mary Ann's most recent mineral analysis, about two years later, indicates a much more balanced oxidation rate, with normal iron and manganese levels. Mary Ann reports feeling quite well, with no symptoms of Lyme disease and no recurrence of cancer.

The concept of the oxidation types is one of the most important ideas in development science. It offers a way to:

- *Enhance adaptive energy and balance body chemistry.*
- *Understand and balance the autonomic nervous system.*
- *Understand many thyroid and adrenal imbalances, and often improve them easily.*
- *Understand and correct hundreds of common physical symptoms and conditions.*
- *Understand and correct many mental and emotional symptoms and disorders.*
- *Even gain insights about current social and political trends in the nation and in the world.*

WHAT ARE THE OXIDATION TYPES?

The oxidation types represent many things, including:

- *Yang (fast oxidation) and yin (slow oxidation) expressions of the life force.*
- *Homeostatic states of the body and mind. This means they are fairly stable states of the whole human system that allow the body to cope successfully with its environment.*
- *The stages of stress in Dr. Selye's stress theory of disease.*
- *In Ayurvedic philosophy, pitta (fast oxidation) and kapha (slow oxidation).*
- *Stages of breakdown of the body from optimum health to near death.*

THE BASIC SEQUENCE OF THE STRESS RESPONSE AND THE DEVELOPMENT OF THE OXIDATION TYPES

1. THE OXIDATION RATE AT BIRTH. Babies are all fast oxidizers. They have many signs of fast oxidation such as a fast pulse, a fast breathing rate, a slightly high body temperature, a moist, sweaty appearance of the skin, and vigorous outward-directed mental and emotional expression.

After birth, the oxidation rate increases dramatically, in most cases. The causes for this are a combination of birth trauma, bright lights, loud noises, and strange home smells to which babies are extremely sensitive. Other causes are giving babies and infants toxic vaccines and drugs. Finally, stress is high on some babies due to poor quality food and from angry, fearful or perhaps just insensitive or ignorant parents, siblings and others in the baby's environment. Many babies have their arms slightly dislocated, for example, by parents swinging them to and fro. For all these reasons, most babies become stuck in very fast oxidation from the time they are born until they begin to move into slow oxidation roughly at age 3 to 10.

Biochemically, the origin and sequence of the stress response in a newborn is as follows:

2. TISSUE SODIUM RISES.

- *Stress of any kind increases aldosterone secretion.* This causes increased sodium retention at the level of the kidneys.
- *This causes the serum sodium level, and soon after, the tissue sodium level to rise.* The hair sodium may increase from 25 mg% to as high as 100 or even 1000 mg%. The rise in sodium also causes the sodium/potassium ratio to increase, at times very high.

3. POTASSIUM RISES TO STAY IN RATIO WITH THE SODIUM LEVEL.

- *A new stress.* The elevated sodium/potassium ratio is a new stressor. Maintaining this ratio in a range from about 2 to about 7 is an important homeostatic mechanism in the body.
- *Potassium retention.* In response to the unbalanced sodium/potassium ratio, the kidneys cause more potassium to be retained in the blood, and later in the tissues as well. The exact mechanism of potassium retention requires further research.
- *Potassium rises.* Potassium retention causes mainly the tissue potassium to rise. Now both the sodium and the potassium levels in the tissues such as the hair are elevated. This tends to rebalance and helps preserve a normal or near-normal sodium/potassium ratio.

4. CALCIUM AND MAGNESIUM LEVELS BEGIN TO DECREASE, FORMING THE CLASSIC PICTURE OF FAST OXIDATION.

- *Sodium and potassium can dissolve most chemical compounds.* This occurs because they are potent solvents. The reason is they are monovalent elements, meaning they have one free electron in most instances. These elements can dissolve almost any water-soluble chemical.
- *Dissolving alkaline reserve minerals.* Higher levels of sodium and potassium in the blood, in particular, but also in the tissues, begin to dissolve some compounds of calcium, magnesium, zinc, copper and other divalent (two free electrons) elements. These minerals are also called *alkaline reserve minerals* because they have an alkaline effect on the body.
- *More dissolved or ionized minerals.* Dissolving these compounds means they are broken down, leaving more of minerals such as calcium and magnesium floating free or ionized.
- *Kidney excretion and loss of alkaline reserve minerals.* The increased amount of free, ionized or dissolved minerals signals the kidneys to excrete more of them. This is a normal mechanism to control the amount of them and the ratio of ionized to non-ionized minerals in the blood and tissues. The end result is a continuous loss of calcium, magnesium, copper, zinc and other vital trace elements from the body.
- *Role of the thyroid.* The thyroid gland may play a secondary role in causing the excretion of some calcium. More thyroid activity is known to cause a decrease in serum calcium.
- *Classic fast oxidation.* On a hair analysis, the pattern of high sodium and potassium with low calcium and magnesium is the classic picture of fast oxidation. This is the pattern in almost all newborns and most young children. At times, it also persists into adulthood, but this is not common and is becoming more and more rare today due mainly to nutritional depletion.
- *Excreting sedative elements heightens the alarm response.* The sedative minerals, primarily calcium, magnesium and zinc, slow the pulse, breathing, blood pressure and more. Lower levels of these minerals, as found in fast oxidation, increase the excitability, irritability and responsiveness of the nervous system. This is a major part of the alarm response to stress.

5. NUTRITIONAL DEFICIENCIES START TO DEVELOP.

- *The alarm response may go on for weeks, months or even a few years.*
- *Lost minerals must be replaced in the diet.* Minerals that are excreted by the kidneys must be replaced in the diet. This, unfortunately, is difficult or impossible today, thanks to the use of hybrid crops and other factors that have reduced the mineral content of our food supply. Even mother's milk is often not adequate to replace these minerals fully.
- *As a result, nutritional deficiencies begin to occur.* By 2-3 months of age or even sooner, some children develop a degree of nutrient deficiency for this reason. This, along with stress and the use of medical drugs, is the main cause of most neonatal and childhood diseases.
- *Car engine analogy.* Fast oxidation is like running a car engine fast for days without having the time to properly replace all worn parts. Eventually, the entire engine starts to fail.
- *Army analogy.* Fast oxidation is like drafting a large part of the working population into the army and forcing them to be on high alert for months or even years without resting. Eventually, the stress wears them out. Also, the nation lacks for factory and other workers. Finally, this "military posture" cannot be maintained.

- *Toxic metal buildup.* As nutrient deficiencies occur, toxic metals replace some of the missing vital minerals in key enzyme binding sites. This is similar to replacing skilled workers who are drafted into the army with inferior replacements. They do not perform as well.
- *The end of a healthy alarm reaction.* Eventually, the body cannot maintain the alarm state or fast oxidation. Thus begins the slide into slow oxidation.

6. THE DEVELOPMENT OF MIXED AND SLOW OXIDATION.

- *Sodium decreases.* As the fight-or-flight response weakens, the sodium level decreases first. This is due to lower levels of aldosterone secretion and perhaps also due to other factors having to do with the kidneys.
- *A low sodium/potassium ratio.* The result is a sodium/potassium ratio less than about 2.
- **Burned out fast oxidation.** Fast oxidation with a low sodium/potassium ratio is called *tired or burned out fast oxidation*. Dr. Eck felt it was also perhaps a *resistance stage of stress*.
- *Possible mixed oxidation.* One may go into a temporary state of mixed oxidation for a short while as the sodium level declines.
- *Potassium decreases, too.* The body cannot live for long with a very imbalanced sodium/potassium ratio. As a result, in most cases, the tissue potassium level soon follows sodium and declines as well.
- *The end of fast oxidation.* Lowering the sodium and potassium levels effectively ends the first or alarm stage of stress, or fast oxidation. This occurs by age 3 to 10 in most people.

7. THE RISE OF THE TISSUE CALCIUM AND MAGNESIUM LEVELS AS SLOW OXIDATION DEVELOPS.

- *Continuing adrenal exhaustion.* As stress and nutrient shortages continue to mount, the adrenal and thyroid gland continue to “burn out” or decrease their activity level. As they do, the hair tissue sodium, and later the potassium, decrease below their ideal levels.
- *Dissolved or ionic calcium and magnesium decline.* Sodium and potassium regulate the amount of ionized or soluble calcium, magnesium and other minerals in the blood. As the sodium and potassium levels decline, so does the amount of dissolved or ionic minerals in the serum and eventually the tissues.
- *The opposite of fast oxidation.* This is the opposite of what occurs in fast oxidation, in which there was too much ionized or soluble calcium and magnesium in the blood serum.
- *A reduced level of bioavailable calcium and magnesium.* The low level of soluble calcium and magnesium effectively results in a deficiency of *bioavailable* calcium and magnesium. In this case, the word *biounavailable* means that while calcium and magnesium are present, not enough is in an ionized form to meet the body’s needs. Ideally, about 40-60% of our calcium must be in an ionized form in the blood to be utilized properly.
- *Symptoms of calcium deficiency in the midst of plenty.* Biounavailable calcium is the cause of the peculiar phenomenon in which slow oxidizers often have symptoms of calcium and magnesium deficiencies, although a hair test indicate plenty of these two minerals are in the tissues. This is an endless source of confusion until one understands the cause.

8. DISEASES OF AGING START EARLY IN SLOW OXIDATION.

- *Damage control.* Calcium coming out of an ionized state in the blood often forms hard compounds with phosphorus, oxygen and other minerals. These can be extremely damaging to the heart, the arteries and the veins. As a result, the body quickly moves them out of the blood serum and into the soft tissues, where they do less damage.
- *Calcium precipitation.* Dr. Eck was not clear about how the process works, but it is clear that calcium begins to precipitate into the soft tissues all over the body. Among the worst places are the brain, the joints, the artery walls themselves, the kidneys and other organs.
- *Faucet analogy.* This is chemically akin to hard water deposits on the faucets and pipes of homes fed by hard water. This is water that is high in non-ionized calcium and magnesium.
- *Calcium rises in the hair.* Calcium precipitation into the soft tissues is revealed on hair mineral analyses as an increase in the levels of calcium and magnesium in the hair.
- *Classic slow oxidation.* A hair analysis with lower sodium and potassium levels and higher calcium and magnesium levels is the classic picture of slow oxidation.
- *Calcification is death to the body.* The slow process of calcification of the tissues is lethal for the body. It cannot survive this way. Calcification is the primary disease of old age. It is given many names such as arteriosclerosis, otosclerosis (ears), “hardening” of the brain, the organs, the veins and arteries, and so on.

9. THE DEVELOPMENT OF OSTEOPOROSIS.

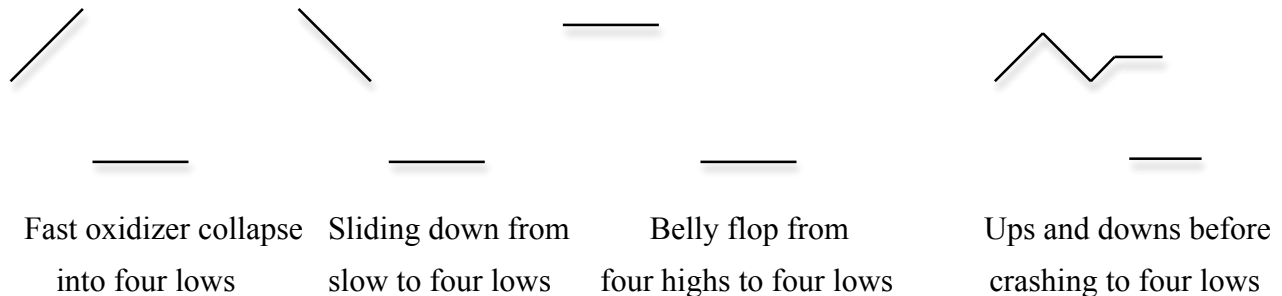
- *Replenishing serum calcium and magnesium.* As calcium and magnesium are lost from the blood into the soft tissues, the body tries to replenish them. Some is ingested in the food. Supplements of calcium and other minerals may also be helpful.
- *Food and supplements, however, are never enough.* In the state of slow oxidation, imbalances in the pH and ionization potential of the blood are such that even the best food and food supplements cannot maintain an adequate level of ionized minerals in the blood for long. Supplements and an excellent diet, however, are much better than doing nothing at all. To really correct the problem, though, one must correct the oxidation rate and stage of stress.
- *Bones are the body's mineral storage site.* Bones are not only the structural support for the body. They are also the calcium and perhaps other mineral reserve sites. In other words, the body can store minerals here safely. Then, any time more calcium is required, the body will tap the reserves to replenish the blood and other sites with calcium and other minerals.
- *Breaking down the bones with more osteoclastic activity.* In slow oxidation, the body taps the bone reserves to obtain more minerals for the blood. Low levels of ionized calcium and magnesium in the serum stimulate activity of the osteoclasts. These are cells that dissolve some calcium and other minerals from the bones and make them available to the blood.
- *Osteopenia and osteoporosis.* In slow oxidation, the process of tapping the bones for minerals continues for years and always leads to osteopenia and perhaps osteoporosis.
- *Dexascans not that accurate.* Assessing bone loss is tricky because x-ray scans are not that accurate. Fluoride and lead in the bones, for example, can make the bones seem more dense than they really are. Selenium in the bones makes them look less dense than they really are.

10. THE VICIOUS CYCLE OF TOXIN BUILDUP. A vicious cycle occurs in all slow oxidizers:

- *Low adaptive energy or vitality reduces the ability to remove all toxins from the body.*
- *This results in a buildup of toxic metals, chemical toxins, and biological toxins such as infections of all kinds.* This further interferes with the body's adaptive energy level.
- *This further increases the toxic load until death intervenes in most cases.* Death may be due to a heart attack, cancer or other symptom, but the underlying reason is toxin accumulation.

11. COLLAPSE INTO FOUR LOWS, AN END STAGE STRESS PATTERN.

- *Most die in four lows.* While the sequence of the oxidation types is of critical importance, so is the endpoint stress response. For most people, life ends not in fast or slow oxidation, but in a *four lows* pattern. Dr. Eck discovered the pattern, which he defined as a calcium level less than 40 mg%, magnesium less than 6 mg%, sodium less than 25 mg% and potassium less than 10mg%. Dr. Eck also discovered how to reverse it in many cases.
- *One can collapse into four lows in many ways.* One can go directly from fast oxidation into four lows, though this is rare. I call this a *fast oxidizer collapse*. The first four numbers on an ARL or TEI chart taken together look like an ascending line. From here the person collapses into four lows. Another possibility is one can go into four lows from slow oxidation. I call this *sliding down into four lows*. One can also go into four lows from a four highs pattern, what I call a *belly flop*. A final possibility is some combination of the above.



FACTORS THAT INFLUENCE THE OXIDATION TYPES AND RATE

The following are generalizations only, as so many combinations of factors are possible:

- *Improper nutrition and eating habits.* This is often the most important single factor that moves people from a balanced oxidation rate to the extremes of fast and slow oxidation.
- *Aging.* As one grows older, vitality decreases and this moves people into slower oxidation.
- *Stress.* Stress depletes nutrients and affects the glands. *Acute stress* tends to enhance the oxidation rate, while *chronic stress* tends to wear out the body and cause slow oxidation.
- *Lifestyle.* Adequate rest helps keep a person in fast oxidation. Mild activity is also good. Too much or vigorous exercise wears out the body and moves people into slower oxidation.
- *Individual effects.* The same habit or behavior might affect different people in various ways, depending on their health and temperament. For example, mild alcohol use may temporarily increase the oxidation rate by providing readily available “fuel” for the body. In others, it definitely depresses the oxidation rate.
- *Stimulants.* Caffeine, loud music, stimulant drugs and extreme exercise temporarily keep a person's oxidation rate faster, but eventually wear out the adrenals and cause slow oxidation.

- *Hereditary and congenital weaknesses.* These are variable. Some push the body into slow oxidation at a young age such as Down's syndrome. Others cause a faster oxidation rate.
- *Infections.* These usually stimulate the body for a while, but later wear it out.
- *Prescription, over-the-counter and recreational drug use.* These cause stress on the liver or other organs and often move it faster through the oxidation types. Specific drugs stimulate or depress metabolism in complex ways.
- *Toxic exposures.* At first, most toxic metals tend to speed up the oxidation rate. Later, they cause damage to the body, causing it to remain stuck in slow oxidation or four lows.
- *Attitudes that tend to move people into a fast oxidation rate.* These include joy, happiness, a forward-looking attitude and a genuinely more positive attitude about life. Others are having more self-love, more self-appreciation and greater ego strength. Attitudes that can cause an extremely fast oxidation rate are excessive anger, anxiety, aggressiveness, overt controlling temperament, sexual aggressiveness, living totally in the future, paranoia at times, egoism, hatred, thoughts of murdering or harming others and other fight-or-flight-related emotions.
- *Attitudes that tend to move a person into healthy slow oxidation* include a desire to slow down and become more self-aware and present, thinking of others over oneself, a healthy introversion, interest in spiritual topics and a genuine desire for peace and quiet inside the body and out. Others are being methodical, thorough, even-tempered, considerate and polite.

Traits that can cause a very slow oxidation rate include grieving, thinking and living in the past, and believing that oneself or others are victims. Others are low self-esteem, depression, negative thinking, feeling sorry for oneself and engaging in confused, distracted or unfocused thinking. Others are feeling defeated, overwhelmed, blocked, stifled, despairing or suicidal.

- *Attitudes and beliefs that can move a person into a four lows pattern.* These include negative thinking, giving up inside, cynicism, extreme resentment, worry, compulsiveness, ruminating or obsessing over things endlessly, perfectionism, stoicism, martyr attitudes, and being very hard on oneself and perhaps on others.
- *Hormonal differences between men and women.* Men tend to be faster oxidizers in part due to their higher levels of cortisol and testosterone. Estrogen in women generally has a slowing effect on the oxidation rate, according to research by Dr. Eck.
- *Other.* Accidents, injuries, surgeries (due to many drugs used), structural imbalances and subtle electrical and other imbalances can all affect the oxidation rate. Even a chiropractic misalignment or clogged colon can stress the body enough in a few cases to alter the oxidation rate significantly.

GENERAL SYMPTOMS AND TENDENCIES ASSOCIATED WITH FAST AND SLOW OXIDATION INCLUDE:

- ***Height and body shape.*** Genetic and nutritional factors affect one's height and growth rate. However, fast oxidation tends to inhibit growth in height to a degree due to a higher cortisol and cortisone level. Therefore, children who remain in fast oxidation longer, especially into adulthood, tend to be of shorter stature and often have a stockier build. This is sometimes called an "adrenal metabolic type". Those who go into slow oxidation earlier may be taller and of a more slender and delicate build.
- ***Body shape with weight gain.*** Classically, *fast oxidation* causes a more 'Cushinoid' body shape, so named after an illness called Cushing's disease. The person is not as tall, and is

broad in the middle. The arms and legs tend to be thinner as well.

When fast oxidizers gain weight, they develop the *apple-shaped* body. There may be a Cushing's syndrome "buffalo hump" in the back in very extreme cases. The apple shape is due to high cortisol, which in turn causes high insulin, which deposits fat in the belly area. Fast oxidizing women tend to have higher estrogen levels and tend to be more curvy, fleshy or voluptuous looking. These women also tend to have a larger bust and skinny extremities.

The classic *slow oxidizer* has a *pear-shaped* body, especially later in life. This is due to sluggish adrenal and thyroid gland activity, which is more associated with fat deposition on the hips and legs. The upper body is often thinner and smaller.

The *sympathetic dominant* variant of slow oxidation often has a more angular body. That is, there is little fat deposition. Women with this pattern are often progesterone-dominant, giving rise to a slender, less curvy body shape.

Women tend to have more estrogen, which causes fat deposition in the hips and breast areas. Women with low estrogen tend to be more angular, tall and slender. Combinations of these situations occur as a person passes through various stages of stress at various ages.

Caution: I found that body shape is an unreliable way to assign a metabolic type to anyone, or to recommend a nutrition program. You are often viewing a person as they were some years ago, in terms of body chemistry. I found that often a hair mineral analysis did not correlate with my guesswork based on body shape or questionnaires, and that hair analysis was much more accurate from a clinical standpoint.

- **Frequency of bowel movements.** Fast oxidizers tend to have more than one bowel movement per day. Very fast oxidation causes a tendency for diarrhea. In contrast, one or fewer movements per day is commonly associated with slow oxidation. Very slow oxidation and sympathetic dominance are often associated with constipation due to sluggish peristalsis, intestinal dysbiosis, depression and other causes.
- **Cellular excitability.** William Koch, MD, a brilliant physician of the early 20th century, wrote "Calcium is important with magnesium in lessening the cell irritability, while sodium and potassium increase it." - *The Survival Factor in Neoplastic and Viral Diseases*, p. 241. Fast oxidizers have lower calcium and magnesium and higher sodium and potassium levels. As a result, their cells tend to be more sensitive and irritable. Slow oxidation is the opposite.
- **Skin and hair.** Increased metabolic activity in fast oxidation is associated with increased activity of the sweat and the oil or sebaceous glands of the skin. This causes a tendency for more oily skin and hair. Slow oxidizers are the opposite, which makes them more prone to dryer skin and hair. Exceptions can occur due to fatty acid imbalances, poor hydration and occasionally other reasons. Most teens, for example, have oily skin due to hormone changes and sometimes due to diet high in poor quality fatty foods such as chocolate and French fries.
- **Water content of the tissues.** A higher water content of the skin of fast oxidizers, due in part to a higher tissue sodium level, tends to cause their skin to have a more watery appearance and poorer muscle definition. Slow oxidizers may have better muscle definition and a dryer appearance to their skin due to lower tissue sodium that may cause less water retention.
- **Complexion.** Fast oxidizers often have a more ruddy complexion. This may be due to higher blood pressure, better circulation, a greater tendency for inflammation and perhaps better liver function. This is true even though the sympathetic nervous system tends to move blood inward, away from the periphery of the body. Slow oxidizers tend to be more pale due to poorer skin circulation. Slow oxidizers may also look more yellowish due to sluggish liver and bowel activity, and greater toxicity.

- **Blood circulation.** Fast oxidation is more associated with good circulation. The hands and feet are usually warm, even in cold weather. Slow oxidation is more associated with poorer circulation, a tendency for colder hands and feet, and a lower body temperature, in part due to impaired thyroid and adrenal activity. *Sympathetic dominant* slow oxidizers are those who are caught in a fast oxidizer mentality when the body has moved into a slow oxidation pattern. They tend to use the sympathetic nervous system to excess. Their hands and feet are often cold because they draw most of their blood to the center of their bodies in an attempt to ward off an impending attack. This is part of an exaggerated fighting or running response.
- **Food cravings.** Food cravings can express the body's desire to balance the body. Usually, however, food cravings are a very inaccurate way to assess the oxidation rate.

Fast oxidizers who are in touch with their real needs desire fats and oils such as dairy products, red and fatty meats, cream and butter. These foods tend to slow the oxidation rate. For example, babies do well on milk. While mother's milk contains some sugars, it also contains almost 50% fat. Feeding children low-fat milk is almost always a mistake, in part for this reason. Babies need breast milk and little else except perhaps some pure water.

Adult fast oxidizers require much more fats and oils. These are higher calorie foods that tend to slow the oxidation rate. Fast oxidizers often enjoy steak and potatoes with sour cream, for example. If fast oxidizers do not eat enough fats or oils, they often will crave starches, sugars or perhaps alcohol to provide more calories and stave off hypoglycemia.

Slow oxidizers tend to have chronic low blood sugar and need more protein, in particular. Most in slow oxidation crave sweets and starches due to a chronic low blood sugar level. In addition, simple and complex carbohydrates often feed yeast organisms in their intestines, and this can cause cravings for these foods via an addictive and allergic phenomenon. These cravings become much worse, as a rule, if they do not eat protein foods several times daily.

They may also crave salt in some cases. Sea salt actually helps them a lot, as their bodies do not retain sodium and potassium well. This is due to impaired adrenal gland activity and lower aldosterone secretion, which are part of slow oxidation. Slow oxidizers should not like fatty foods, although some crave milk, a comfort food for many people. They really do not have the ability to digest fats very well at all. They usually have more difficulty with higher fat foods, as liver activity is more sluggish and gall bladder activity is also sluggish. They often remark that higher fat foods such as steak tend to "sit in the stomach".

- **Blood Pressure.** Fast oxidation is associated with increased vascular (sympathetic) tone and sodium retention due to elevated aldosterone levels. These frequently result in a blood pressure above 120/80. Fast oxidizers are also more prone to *labile* or changing high blood pressure. This is because greater sympathetic nervous system activity can cause momentary constriction of the arteries when a person is tired or emotionally upset.

Healthy slow oxidizers tend to have blood pressures less than 120/80. This is due to weaker vascular tone and low sodium levels due to adrenal and thyroid weakness. These cause a somewhat reduced blood volume and blood pressure. Very slow oxidizers often have very low blood pressures, which can cause vertigo when they stand up quickly. Later in life, slow oxidizers and unhealthy fast oxidizers both become prone to hardening and clogging of the arteries. This can lead to high blood pressure in both metabolic types.

- **Sweating.** Enhanced metabolic activity in fast oxidizers increases the generation of heat in body tissues. This is associated with increased sweating. Slow oxidizers generally sweat much less, and many hardly sweat at all due to a lower overall body temperature.

- **Mood.** In fast oxidation, all metabolic processes speed up, including mental functioning. This can result in a tendency for fast thinking, sharper thinking and a generally more positive outlook. Extreme fast oxidation causes nervousness, irritability, anxiety, and even paranoia and aggressiveness. In slow oxidation, toxicity, nervous depletion, and mineral deficiencies cause a tendency for mental sluggishness, lethargy, apathy, and in many cases, depression. Very slow oxidation is also associated with despair, brain fog and confusion.
- **Types of infections.** Fast oxidizers tend to be more prone to viral and bacterial infections. Examples are the common childhood diseases such as mumps and measles. Slow oxidizers often get more fungal infections, which are “cold”. Fungi feed on dead and dying tissue, and this is a good description of a slow oxidizer. Exceptions occur, however. Slow oxidizers certainly get viral infections and some babies develop thrush or cotton mouth. While this is a fungal infection, it is due to a high pH in certain body cavities combined with a poorly developed immune response, and perhaps the use of antibiotics. Most babies, however, are not generally prone to fungal infections.
- **Energy level.** Cellular energy production is best when the oxidation rate is balanced, or close to balanced. This means neither too fast nor too slow. A fast oxidation rate, within certain limits, is definitely associated with a higher energy level than a slow oxidation rate. However, very fast oxidizers are “over-revving their engines”. They may appear energetic and even frenetic, but their real energy efficiency is lower. It is not a controlled, healthy energy, either. Mild slow oxidizers usually have excellent energy levels if they do not have a lot of toxic metals or other problems. As the oxidation rate declines, one feels more fatigue. Very slow oxidation, particularly with a low sodium/potassium ratio, is associated with exhaustion, depression of all body functions, and even suicidal thoughts as a result of very low cellular energy production.
- **Animal protein preference.** Fast oxidizers tend to prefer red meats to other meats, as they contain a higher percentage of fat. They also have a higher *dynamic action*, a term that is not used often today, but is a true concept. It has to do with the action of the protein on the body. Fast oxidizers may also prefer the high-purine proteins found in abundance in foods such as sardines, anchovies, tuna fish and organ meats. Purines are high-energy phosphorus compounds that contain more nucleoproteins.
 Slow oxidizers tend to prefer chicken, fish, eggs or vegetarian sources of protein. These tend to contain less fat and fewer purines, and have a lower dynamic action. For these reasons, they are generally easier for them to digest.
- **Cell permeability.** Dr. Koch wrote, “sodium and potassium thus tend to increase the cell’s exchanges and the entrance of water soluble toxins. Calcium, magnesium and strontium tend to reverse this situation.” - *The Survival Factor in Neoplastic and Viral Diseases*, p. 241.
 In other words, fast oxidizers, with their high sodium and potassium and low tissue calcium and magnesium, have greater cell permeability. Slow oxidizers have less permeable cell membranes due to higher tissue calcium and magnesium levels, and perhaps due to other factors such as fatty acid deficiencies or others. This accounts for many unusual phenomena having to do with blood sugar, thyroid hormone disorders and others.
- **Histamine levels.** Carl Pfeiffer, MD, PhD, noted that some people had higher serum histamine levels than others. Dr. Pfeiffer did not know about metabolic typing, but Dr. Eck stated that fast oxidizers tend to have higher histamine levels, perhaps due to their more permeable cell membranes, than do slow oxidizers.

- **Cellular pH.** Slow oxidizers are more acidic at the cell level than most fast oxidizers due to:
 - *Much less bioavailable calcium.* Calcium is absolutely required to neutralize lactic acid and other acidic end products of cell metabolism.
 - *More infections,* especially more fungal infections in slow oxidizers. These excrete extremely acidic products in most cases.
 - *More toxic metals.* Most toxic metals are very acidic in their reactions in the body.
 - *Lower levels of alkaline reserve minerals* in the body. Slow oxidizers are generally more mineral deficient due to poor digestion and absorption, and simply due to their poorer health. They have literally burned out these minerals.
 - *More bowel toxicity.* The presence of intestinal infections and low digestive enzymes cause more putrefaction of proteins and fermentation of sugars in slow oxidizers. These create plenty of acidic toxic chemicals in the bowel of most people today.
 - *Greatly impaired cell permeability.* Slow oxidizers generally have more bioavailable calcium, which reduces cell permeability. Low omega-3 fatty acids and other nutritional deficiencies in most slow oxidizers may also contribute to this problem.

Caution: Avoid using the pH of the urine, saliva or blood to measure cellular pH. There is very little relationship between them. In fact, they are generally very poor indicators of cellular pH. Dr. Eck avoided the trap of recommending foods, or other healing methods based on their effect on pH. For example, distilled water can be a way to alkalize the body, although the water is slightly acidic, because it removes many acidic toxic metals. Fruit can acidify the body, although it is alkaline in reaction, because it often slows the oxidation rate and may cause fungal problems. This makes a person more acidic. Therefore, avoid the acid-alkaline method of recommending foods. Also avoid all alkaline water, for the reasons explained in Chapter 2.

Mixed oxidation. These individuals may exhibit qualities of both fast and slow oxidizers. Much depends on the particular mineral ratios in each case. However, mixed oxidation is always temporary, so the qualities and symptoms will often shift quickly.

OTHER TOPICS RELATED TO THE OXIDATION TYPES – EARLY IDENTITY AND THE OXIDATION TYPE

A person's identity is formed at a young age by impressions from outside, but also from the body chemistry itself. If a person is a very fast oxidizer as a child, for example, he may grow up more suspicious of others, more aggressive and/or less concerned with others. This is what happens to many people, especially boys. On the other hand, if one grows up in very slow oxidation, one may think that fatigue, some depression and despair are "normal" and part of one's personality, when they are really just effects of a very sluggish oxidation rate.

These early life impressions can affect the friends one makes, the partners one chooses, and the occupations, hobbies, sports and every other aspect of one's life. Understanding this concept could be very helpful for parents, teachers and even political leaders who wish to produce citizens who are balanced, meaning not too aggressive and angry, but not depressed or feeling like victims, either.

IDENTITY DISCOMFORT AS AN OXIDATION RATE IMPROVES

Some people literally build their entire lives around early impressions that include the body's oxidation rate. When a person follows a development program, the changes that take place in the oxidation rate can cause discomfort and confusion. It can even cause a person to abandon the program. Below is an example from clinical practice. This is followed by some of the reasons the problem occurs and how to handle it.

***Slow to faster oxidation.** Jan, age 40, joked that her friends called her “the depression case”. She had been this way as long as she could remember. However, she functioned okay, she thought. Her hair analysis showed a very slow oxidation rate, which is often associated with depression. She began a development program and did extremely well. For example, after a year or so, her dentist told her she had regrown 2 millimeters of jawbone in her mouth that had receded. He was really telling her she had reversed some osteoporosis of the maxillary bones. This was astonishing to the dentist (and to me as well, since, at that time, I was less experienced with development).*

Soon afterwards, however, Jan came to me and said she was quitting the program. She admitted feeling stronger and happier, but felt anxious and somehow uncomfortable. I knew why. She was no longer as depressed and it did not “fit” her identity. She was in a homosexual relationship and I heard that it was not working well. Jan was very upset about this. Also, she just didn't relate to people the same way. Before, she had hated men, for example, and now she found herself strangely interested in men for the first time. Regardless, she stopped her development program. A few years later, however, Jan asked to go back on her program. She was ready, she said, to come out of slow oxidation now and resume her healing with me. Most likely, she had become used to her new personality based on a less sluggish oxidation rate and was ready to progress to the next level.

Why identity problems occur as the oxidation rate normalizes. Reasons in both fast and slow oxidizers include:

- *Too relaxed and too aware of others.* When fast oxidation is reduced on a development program, a person may feel more relaxed. He may have less ambition or drive, less nervous energy and perhaps less sexual desire as well. It can feel as if the world is closing in around oneself. This is disturbing to fast oxidizers whose entire identity may be wrapped up in a sense of power, speed and control over situations. It is probably worse for men in our society, as these traits are more highly valued in men.
- *In high gear.* As a slow oxidation rate speeds up on a development program, it can be equally uncomfortable. It can feel as though someone just gave you a high-powered sports car to drive, but no driving lessons. Slow oxidizers, in many cases, have learned to get by on much less energy. When the energy level increases, especially if it happens quickly, many wonder if they can handle it, wonder what to do with it, or whether they are becoming “hyper”. New interests and desires will arise, old friends will seem like slugs and there is often more sexual desire. Often they begin to look and feel sexier as well, which is a problem for some women, in particular, who may not know how to handle the new attention they receive, much of it perhaps negative.

- *Too smart.* While fast oxidizers on the program may start to feel groggy and relaxed, some slow oxidizers will begin to feel “too smart”. This might not seem important, but many people in society thrive on the “ignorance is bliss’ mentality. In other words, they prefer not to use their brain any more than necessary to get by, in part because it doesn’t work well. When it starts to function properly, some people don’t like it or don’t know what to do with it. It is the opposite of the fast oxidizer, who must learn to give up some of his 20 hobbies like flying airplanes, racing ocean-going boats and rafting the rivers because the levels of nervous energy and drive are less.
- *Increased awareness.* Most unhealthy fast oxidizers and many slow oxidizers have a reduced level of awareness. Their energy is focused mainly inside of themselves, rather than on their surroundings. They must do this just to survive. As they break out of these toxic patterns, their new awarenesses can seem harsh, cruel and shocking. Most are not prepared for it and are not sure what to do about it. In fact, some withdrew into slow oxidation and a calcium shell just to get away from this heightened awareness.
- *Loss.* A longstanding oxidation rate, whether too fast or too slow, is part of a person’s “comfort zone”. When the rate changes, there can be a feeling of uneasiness and even loss. For example, a fast oxidizer may lose his *edge* - his nervous excitement to which he is accustomed. He may suddenly not feel like continuing his reckless and thoughtless habits. A slow oxidizer may lose his *calcium shell of protection from the world*. In either case, loss can be painful, even if it is a good thing.
- *Anxiety.* All of these changes can cause anxiety. At times, it is severe enough to cause a person to sabotage the program in some way, such as cheating on the diet, skipping supplement doses, gorging on sugar and caffeine, or perhaps staying up too late. If a practitioner and client realize what is happening, it can be dealt with. It might even mean slowing down the program by taking fewer supplement doses, for example, or taking a break from the program until the person adjusts to the reality of a healthier body chemistry.

YOUNG CHILDREN’S ISSUES AS THE OXIDATION RATE CHANGES

Most often, the changes in children’s health, attitudes and behavior as a result of a development program are amazing and wonderful. At times, however, the following may occur:

Slow oxidizing, and even fast oxidizing children, may become more energetic for a while as they become healthier. This may occur because they are becoming more happy and joyous, or because they now have the energy to “act out” or respond correctly to stressors. Some may just be experimenting with their newly found energy. This is all good, though it can look like hyperactivity. It is never a reason to drug the child. Most of the time, a child’s behavior can be controlled by giving the child more Paramin, or calcium and magnesium, and even by substituting more full-fat cheese, meat and eggs for carbohydrate foods.

Fast oxidizing children may slow down and not want to play baseball or run around as much. This is also excellent, but can be unnerving for parents. It is not a problem. If it is extreme, the nutrition program may need adjusting. However, many children are so toxic and depleted, they might withdraw for a while to heal. This is especially true in the rare case of a child with a four lows pattern.

Family dynamics may change. Changes due to a development program may cause other, unexpected shifts in the family. Parents may need to seek help with changes if they do not know what to do about them.

THE BLESSING OF SLOW OXIDATION SYMPTOMS

Health challenges that occur in slow oxidation such as adrenal exhaustion, hypothyroidism, depression, copper toxicity and even dreaded diseases like cancer and heart attacks can have positive benefits. Among others, they can cause a person to slow down physically, and to think more about life and what one truly wants and needs. This tends to promote mental maturity, clarity of thinking and emotional stability. This can be a blessing in disguise that helps a person to move beyond a superficial life.

Through my own illness of this sort, I have learned the truth that we are here to mature mentally and emotionally. This is not the same as achieving the “full potential” that most psychologists talk about. It is not primarily about a wonderful career, many friends and a comfortable lifestyle. It is about something far deeper. It has been written about mainly in books such as the *The Lives Of The Masters Of The Far East* by Baird Spaulding.

EVOLUTION, SPIRITUAL DEVELOPMENT AND THE OXIDATION TYPES

As a person develops mentally and emotionally, he or she will often move from fast oxidation into slow oxidation. This occurs for several reasons:

- *Less focus on the physical aspects of living.*
- *More rest and sleep.*
- *Reduced adrenal and thyroid gland activity and lower stress and sex hormone levels.*
- *Often becoming quieter and calmer, as part of becoming more introverted.*
- *Perhaps fewer dietary stimulants and a calmer lifestyle with activities such as meditation.*

Enhancing mental development in the children. It may be wise to feed and raise children so they move into a mild slow oxidation condition at a young age. This would be preferable to the stress and mental damage of a very fast oxidation rate, as most young children experience today. This could help greatly to regenerate the human race in a single generation. Simple steps that would be most helpful are:

- *A development program.* Almost all children would benefit from this to remove toxic metals and balance the chemistry. A year or more would be needed for most children.
- *Reducing stress and pressure on children.* This would require changes in school and at home, but they would be well worth it.
- *Much more rest.* Children all need 10 hours or more of sleep each night.
- *The diet must have plenty of the omega-3 oils and quality steamed vegetables.* Less red meat may also help keep the oxidation a little slower, provided other quality proteins such as eggs and raw, certified milk, cheese and yogurt are substituted for it.
- *Relaxing and calming activities are also helpful to keep the oxidation rate somewhat slower.*

The chart on the next page illustrates how the oxidation rate relates to maturity.

FAST OXIDATION = FUN	SLOW OXIDATION = SLOWING DOWN
Fast oxidizers are happier, more superficial,	Slow oxidizers are often sadder, inward

<p>extroverted, faster moving, upward moving, elated, and usually live more in the ego mind. Some adults are “vampires”, living off the energy of others.</p>	<p>moving, introverted, and generally much slower moving. Many feel like victims and thinking is cloudy. It is often a more spiritual place, with more self-reflection and less of an ego focus.</p>
<p>Extreme fast oxidation (Ca/K less than 0.5:1). This is an extremely stressful condition of most babies and young children that scars many of them for life, causing intense fear and even paranoia. This means a person is suspicious and may react quickly to any perceived threat. Adults with this condition tend to be hyperkinetic, hyperthyroid and often anxious, irritable, on edge, and ready to fight at the slightest provocation. This is not a healthful or spiritual situation.</p>	<p>Extreme slow oxidation (Ca/K greater than 100:1). Even more introverted and often depressed. The person is often physically ill and ‘ill in spirit’, which means lonely, unhappy and just wanting to give up. Most have a <i>calcium shell</i> to some degree, indicating a protective stance, psychological withdrawal and defending the Inner Self. It is a holding pattern to prevent complete collapse. However, some use this pattern to help them grow and mature inside. Thus it is often a healthful place to start the spiritual journey toward real maturity.</p>
<p>Fast oxidation with a sodium/potassium ratio less than 2.5:1. This is called <i>tired or temporary fast oxidation</i>. The person is in transition to slow oxidation in most instances. Ego-related issues may be stumbling blocks. This can be a difficult transition for many people.</p>	<p>Slow oxidation with a sodium/potassium ratio less than 2.5:1. This is an even more introverted, tired and perhaps depressed situation, and perhaps getting worse. This is not an ideal situation for development as it can lead to destructive behaviors such as eating sugar, drinking alcohol, risk-taking behavior to feel ‘alive’, thrill-seeking and others.</p>
<p>Fast oxidation with a sodium/potassium ratio less than 1:1. This is an advanced transition from fast to slow oxidation or may indicate severe resistance to change. The person may have been traumatized in some way that makes the transition to a more spiritual life much more difficult.</p>	<p>Slow oxidation with a sodium/potassium ratio less than 1:1. Very tired, unhappy and usually depressed. Perhaps an old trauma is causing the person to essentially ‘hide out’ from life. This is a painful place, but it can motivate a person to move in a spiritual direction, nevertheless.</p>
<p>A bowl pattern in fast oxidation. An incorrect diet or pushing oneself in the wrong direction can cause this pattern. This can indicate movement toward a <i>step up pattern</i> which is a death pattern.</p>	<p>A bowl pattern in slow oxidation. This is more common than a <i>bowl</i> in fast oxidation. It usually represents extreme resistance to change or a simple dilemma on the road to change into full-fledged slow oxidation.</p>

SOCIETAL AND POLITICAL IMPLICATIONS OF THE OXIDATION TYPES

Society is an organism, just like our bodies. Each nation has an immune or defense system, a fuel or energy processing system, and every other system that our bodies have. All must function reasonably well or the society begins to decay. As more citizens of America and Europe, in particular, sink into adrenal exhaustion, toxic metal poisoning and nutritional depletion, the societal organism sinks a little as well. This may be called “nutritional determinism”. Some believe that societies rise and fall based on new technologies, new religions and for other reasons. I believe that as more and more people are unable to think clearly or function well, it is causing profound changes in the nature of Western societies. These include:

- *Unhappy relationships.* People who are ill often blame others around them for their problems. This causes many difficulties in relationships.
- *Atheism.* When one feels tired all the time and doctors can’t find the reason, it is easy to doubt that God cares or even exists.
- *Moral relativism.* When one feels ill or depressed much of the time, momentary pleasures take on much greater importance. They may be the only thing left that makes one feel ‘happy’ or ‘alive’. Moral codes, instead of being guides for living healthfully, seem like irrelevant obstacles that block ‘happiness’, though this is never really true. Few realize that moral relativism translates into cheating and corruption at all levels, particularly among the leaders of the government. This is extremely destructive for the society.
- *Drug use, both legal and illegal.* Without medical answers, millions “self-medicate” for their aches and pains, anxieties and depression. Mind-altering substances allow one to feel good for a few hours, even if they destroy the nervous system in the long run.
- *Utopianism and totalitarianism.* Many blame their health and wellness problems on ‘the system’, however they perceive it. This gives rise to the mantra that “change” is the answer. Most people have little knowledge of history, so they cannot see that most of what has come as change is just a throwback to far worse, old-fashioned and corrupt ways of doing things.
- *Socialism.* Happy, healthy, energetic people do not need or want government telling them how to live and what to do and not do. Tired, depressed, failure-oriented people think they need and may even want government welfare, entitlements, “special benefits” and more.
- *Scapegoating.* Individuals, as well as governments, that do not function well tend to look for someone to blame. Common scapegoats are the rich, religious people and others. This further divides society and can lead to wars with other nations.
- *Chaos, violence and war.* Poor quality decisions, especially at high levels of government, cause the final destruction of society. Misinformed and cloudy-minded people keep electing the same poor quality leaders. This will eventually doom any nation. This happened to the Roman empire and could happen here as well. In Rome, perhaps an important factor was the advent of lead water pipes in the city of Rome that insidiously poisoned the ruling class, lowered their IQs and perhaps induced them to violence.

Today, our culture is plagued by a combination of fatigue due to air and water pollution, combined with pollution due to fluoride and other chemicals added to the water and food supply. In addition, the levels of toxic metals are higher than ever before in recorded history, and not just lead. This is made worse by the use of hundreds of over-the-counter remedies, along with toxic medical procedures. This is not the same as ancient Rome, but a modern scourge, nevertheless.

13. SPECIFICS OF BALANCED, FLEXIBLE, FAST, SLOW, SUB-OXIDATION AND MIXED OXIDATION

Jaclynn, age 3, was a Down's syndrome baby. Her mother had taken her to many doctors. She was growing very slowly, had mitral valve problems, a poor appetite except for salty foods, and allergies to milk, corn and other foods. Jaclynn was also a very obstinate child. Her first hair analysis revealed fast oxidation with a sodium/potassium ratio of 0.41 (normal is 2.5). This indicates very chronic stress, usually intense frustration, resentment and hostility, and often chronic infections and excessive tissue breakdown or catabolism. Her trace element levels were all very low, including a hair zinc level of 3 mg% (normal is 16-20). This is as low as I have ever seen, and is almost always associated with delayed development and birth defects. Zinc is essential for protein synthesis, growth and development of the nervous system. The only toxic metal revealed on the first analysis was high aluminum at 1.5 mg%. Babies with Down's syndrome and other genetic imbalances often have initial hair mineral analyses of this type.

I suggested changing Jaclynn's diet from peanut butter, soy milk and a lot of fruit, to more cooked vegetables, more meat to provide zinc, and no soy products whatsoever. She also took supplements of zinc, copper, calcium and magnesium to begin to correct her very imbalanced chemistry. Babies and children usually do not need to take many supplements, as their digestive systems are extremely sensitive and they do worse if they are given too many. Jaclynn's response was slow. Her nutritional deficiencies and toxic metal load were enormous. However, she started to grow a little faster, became stronger and would no longer dislocate her hip when she moved.

Her second hair analysis four months later was very similar to the first one. The sodium/potassium ratio was even worse and the zinc remained the same, in spite of the diet and supplements. The explanation is that removing toxic metals such as aluminum often causes a worsening of the sodium/potassium ratio temporarily. As for zinc, this child was so depleted that the body apparently did not have extra zinc available to be lost into the hair. Therefore, the hair level remained low, even though important changes were taking place inside.

Seven months later, the next mineral analysis revealed the same zinc level of 3 mg%, plus a four lows pattern. This looked even worse. However, on retests, four lows sometimes occurs and it is just a retracing of an older collapse or burnout condition. Meanwhile, while Jaclynn's physical height remained below average, her food allergies diminished and her cognitive abilities began to leap far ahead of other Down's syndrome children.

On the most recent hair test three years after starting her program, the zinc level finally moved up to 6 mg%. This is still a very low number, but 100% improved from earlier. Jaclynn is still small for her age, but her cognitive and speaking abilities are developing at a very

unusual pace. According to her mother, her test results are “off the chart” compared to other Down’s syndrome children. Also, her physical features are changing and she no longer looks as much like a Down’s syndrome child. Zinc is essential for growth and development on many levels. I surmise that Jaclynn is using the limited zinc she has for brain development, but there is still not enough for normal body growth. I believe this will correct itself as she keeps replenishing zinc with a proper diet and the correct nutritional supplements.

The oxidation type and rate are unique and very special aspects of development science. They orient the practitioner and client immediately regarding the homeostatic state of the body and provide a tremendous amount of other information as well.

Ratios, a key to assessing the oxidation type and rate. This chapter concerns several important mineral ratios. Here is a basic math review of ratios:

- *A ratio indicates a relationship or balance point between two quantities. Another word for this is fractions. Five over two is the same as the ratio between five and two.*
- *A ratio is a pure number with no units. Ratios can be expressed as simply a number, or they may be written as a number, followed by a colon, followed by the number 1. For example, on a hair analysis, if calcium is 40 mg% and potassium is 10 mg%, the ratio of calcium to potassium is 40 divided by 10 or 4:1. In this book, ratios are expressed just as a single number, such as 4 in the example above.*

The car analogies. To explain the oxidation rates, I will use the analogy of a car engine because many people are more familiar with cars than with the body. **Fast oxidation is like:**

- *The car engine is badly tuned so it idles too fast and the engine cannot slow down.*
- *The gas-air mixture is too rich, so the engine runs roughly and too fast all the time.*
- *The gas pedal is stuck in the down position so the car can’t slow down.*
- *The engine is not “emotionally adjusted” and keeps thinking it is “under attack” all the time.*
- *In temporary fast oxidizers, which is the case with adults and older children who are in fast oxidation, the situation is even more severe. The vehicle is badly damaged deep inside, yet it is still stuck in “fast idle” with the engine racing. It is like a ticking time bomb.*

Slow oxidation car analogy. Slow oxidation is more like:

- *The engine is not getting enough gas, so it will not go very fast.*
- *The gas-air mixture is too lean so the engine coughs and chokes without enough fuel.*
- *The person is driving with his parking brake engaged.*
- *The engine is simply all clogged up and is not capable of much speed.*

THE IDEAL OXIDATION RATES:

BALANCED OXIDATION – NOT TOO FAST OR TOO SLOW

- *This tends to put the least strain on the body.*
- *It allows the body to produce energy in the most efficient manner.*
- *It may indicate a flexible oxidation rate, as described in the paragraph below.*

- *It may indicate mental and emotional balance, which are helpful for health, but also essential for what is called development in this textbook.*

Exceptions. In some situations, an oxidation rate can appear balanced on a hair test when, in reality, the person is not healthy at all. These situations include:

- *Four lows pattern.* This is similar to the car engine being very stuck in one gear.
- *The delicate souls in four highs.* A few people keep their oxidation rate balanced using their minds or emotions. They often have a *four highs pattern* on the hair analysis, but not necessarily. These delicate ones are difficult to work with, at times. For example, they may not like a healing program that does not permit their caffeine and other stimulants. Also, if they “lose their balance” and fall into very slow oxidation, for example, they are prone to “crashing”, meaning they feel tired and depressed. They might also speed up too much at times, and feel anxious for this reason.
- *Other.* Toxic metals, emotional states, medical drugs or something else can skew the hair mineral readings, especially on tests near the beginning of a program. This often makes the oxidation rate *appear* balanced when it is merely *compensated* to look this way. A weakness of hair mineral analysis is that it cannot always reveal hidden imbalances. For this reason, one still needs to ask about clients’ symptoms, diets and lifestyles for a complete understanding of the test.

FLEXIBLE OXIDATION – ABLE TO SPEED UP OR SLOW DOWN

An ideal oxidation rate is flexible. This means the body can increase it or decrease it as needed. In our analogy, the auto engine should be able to run very fast or very slow, as needed.

Assessing flexible oxidation is not possible with current mineral testing technology. A hair analysis only provides an average reading over a three-month period of time. Therefore, we cannot read the oxidation rate from moment to moment or even day to day, as the test is now performed. The best one can do is to check the test for a *fairly balanced oxidation rate*, as this gives a clue that the person may be able to both speed up and slow down. In contrast, an extremely fast or extremely slow oxidation rate usually means the person is more stuck in either fast, slow, mixed, four lows or some other pattern.

FAST OXIDATION

Definition. Fast oxidation is a homeostatic state of body chemistry characterized by excessive adrenal and thyroid glandular effect at the cellular level. It is not quite the same as high levels of adrenal and thyroid hormones. The oxidation states have more to do with *glandular effect*, and not primarily hormone levels.

In the stress theory of disease, it is an early stage of stress, also called an alarm stage or alarm reaction. It is a more *sympathetic or fight-or-flight state of body chemistry*. This is not the same as *sympathetic dominance*, a condition that occurs mainly in slow oxidizers and is primarily related to lifestyle and a mental tendency to push oneself hard.

Mathematically, Dr. Eck defined fast oxidation on a hair test as **a calcium/potassium ratio or Ca/K less than 4:1 and a sodium/magnesium ratio or Na/Mg greater than 4.17:1.**

Degrees of fast oxidation. One may further define fast oxidation as *mild, moderate* or *extreme*. The lower the calcium/potassium ratio or the higher the sodium/magnesium ratio, the more extreme the fast oxidation. Since two ratios are used to determine the oxidation rate in this work, the difference between them is a simple way to define how extreme the oxidation rate is. The following cutoff points are somewhat rough and arbitrary and are our, not Dr. Eck's:

- **Mild:** A calcium/potassium ratio between 1.6 and 4.
- **Moderate:** A calcium/potassium ratio between 0.4 and 1.5.
- **Extreme:** A calcium/potassium ratio less than 0.4.

READING FAST OXIDATION ON A HAIR ANALYSIS

Most of the time, fast oxidation is easy to read on a hair mineral chart from Analytical Research Labs. However, in a few situations this is not true. The two ways to identify fast oxidation are:

- **Visually.** On the graph from Analytical Research Labs and perhaps a few other laboratories, one can often recognize it at a glance because the first two numbers are low and the second two are elevated. This is the familiar appearance of fast oxidation. Exceptions are when the first four numbers are all high or all low. Then it is difficult or impossible to recognize the fast oxidizer pattern visually.
- **Calculate the ratios.** Calculate the calcium/potassium and sodium/magnesium ratios. Then use the criteria mentioned above to determine fast or slow oxidation. The ratios may be shown on the graph page of the report, or you may calculate the ratios by hand.

Factors that can skew the macromineral readings, making the determination of the oxidation rate more difficult in a few cases:

- *Washing hair at the laboratory.* This makes it difficult, if not impossible, to identify the oxidation type accurately. For this reason, do not use a laboratory that washes the hair for oxidation rate assessment.
- *Water softeners.* Rarely, bathing and drinking water softened with salt or potassium will raise the sodium or potassium levels, depending on the chemical used.
- *Toxic metals.* This might also affect the readings. The toxic metals may or may not be showing on the hair mineral test.
- *On retests only, the release of biounavailable or "metastatic" calcium can skew the calcium and magnesium levels upward.* This topic is discussed more in the section on retests and in Chapters 14 and 24.

TWO VARIETIES OF FAST OXIDATION

Dr. Eck identified several variants of fast oxidation:

1. True fast oxidizers are mainly young children and babies. All the others are generally temporary fast or slow under stress. Dr. Eck defined true fast oxidation as a test with a:

- *Sodium/potassium ratio greater or equal to 2.5:1.*
- *Calcium and magnesium levels most often less than 40 mg% and 6 mg%, respectively.*
- *Zinc usually less than 17 mg%.*
- *Sodium, potassium or both are above their ideal values of 25 mg% and 10 mg%, respectively.* Another way to say this is that three lows or four lows pattern is not present.

Symptoms. True fast oxidizers usually have more symptoms of fast oxidation, as described in Chapter 12. These include irritability, anxiety, nervousness and others.

2. Temporary fast oxidizers or slow oxidizers under stress. These are fast oxidizers that have other imbalances on the hair chart that indicate their condition is not a true fast oxidizer state, but rather a temporary one due to the presence of toxic metals or some other physical, emotional or spiritual stress condition. A hair mineral test will usually reveal a:

- *Sodium/potassium ratio less than about 2.5.* This is the main indicator.
- *Calcium level perhaps greater than about 40 mg%.*
- *Magnesium level perhaps greater than about 6 mg%.*
- *Three lows or four lows pattern may be present.*
- *Zinc level perhaps greater than about 16 mg%.* True fast oxidizers usually have lower zinc levels.

Rarely, a person has none of these indicators, so that the hair analysis would appear to indicate a true fast oxidizer. In fact, however, the person is a temporary fast oxidizer. Signs of this include 1) the person's age is greater than about 10, and/or 2) the person has significant health problems, usually including some slow oxidizer symptoms.

Symptoms of temporary fast oxidizers. Symptoms of both fast and slow oxidation may be present because this is a stalled transition state between fast and slow oxidation. For example, one may be anxious at times, yet depressed and tired at other times. Another combinations is high blood pressure (a fast oxidizer tendency) and hypothyroidism (a slow oxidizer tendency).

SLOW OXIDATION

Slow oxidation is a homeostatic state of the body characterized by reduced thyroid and adrenal glandular effects. In the stress theory of disease, it is a *resistance* or *exhaustion stage of stress*. It is a relatively *parasympathetic* state of the body compared to fast oxidation. However, it is not a healthy parasympathetic state. Instead, extreme weakness of the sympathetic branch of the autonomic nervous system causes the body to compensate. The body moves into a parasympathetic state mainly as a defense measure to prevent further damage to the body.

Understanding resistance stage of stress. Dr. Selye proposed a *resistance stage of stress* between the alarm and exhaustion stages of stress in animals. Dr. Eck did not speak about it at great length. The following chart shows possible ways to identify it using hair mineral analysis:

	Alarm Stage	Resistance Stage	Exhaustion Stage
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Using the Na/K ratio	Na/K greater than 5	Na/K between 2 and 5	Na/K less than 2
Using various hair analysis patterns	Fast oxidation with an Na/K ratio greater than 2.5	Fast oxidation with an Na/K ratio less than 2.5, four highs, four lows, step up, step down and sympathetic dominance patterns. These are all fast-to-slow oxidation transition patterns	Very slow oxidation or a four lows pattern

The shift into slow oxidation. One can move into slow oxidation as early as the age of one. More often, it occurs between 3 and 10 years of age. The shift is occurring sooner today than even 29 or so years ago when I first began reviewing hair charts. This is probably due to a combination of:

- *More babies are being born with significant mineral imbalances due to poor health of their mothers.*
- *More vaccines, drugs and other toxic medical interventions used on young babies.*
- *More electromagnetic and electronic stress from cell phone and other wireless devices.*
- *More family stress.* This is due to many factors including “burned out” parents and siblings, and perhaps even the breakdown of family values in the United States and Europe.
- *Perhaps more spiritually-inclined children being born who have more trouble coping.*

Definition of slow oxidation according to Dr. Paul Eck. Mathematically, Dr. Eck defined slow oxidation as a calcium/potassium ratio of 4 or greater, and a sodium/magnesium ratio of 4.17 or less. Slow oxidizers can be further classified as mild, moderate or extreme. Below is a rough mathematical way to assess the degree of slow oxidation:

- **Mild:** A calcium/potassium ratio less than 30 and greater than 4.
- **Moderate:** A calcium/potassium ratio between 30 and 100.
- **Extreme:** A calcium/potassium ratio greater than 100.

For example, if the calcium/potassium ratio is 52, the oxidation rate is moderately slow. However, if the calcium/potassium ratio is 220, it indicates extreme slow oxidation.

HOW TO READ SLOW OXIDATION ON A HAIR MINERAL ANALYSIS

- **Visually.** On a calibrated chart from Analytical Research Labs, a slow oxidation rate is present when the calcium and magnesium bar graphs appear taller than the sodium and potassium bar graphs. Exceptions include four highs and four lows patterns. With four highs, all the bars of the macromineral bar graphs may be off the chart so one cannot read the oxidation rate visually. In four lows, the numbers may be so low the ARL bar graphs may be unclear. Mixed oxidation is the other possibility and is discussed below.
- **Calculate the ratios.** Calculate the calcium/potassium and sodium/magnesium ratios and then use the criteria above to figure out the metabolic type and rate. The ratios may be calculated for you somewhere on the graph page.

MIXED OXIDATION

Mixed oxidation is a term Dr. Eck used to describe the situation when one of the two ratios used to assess the oxidation rate indicates fast oxidation and the other indicates slow oxidation. It is purely temporary and resolves to fast or slow oxidation usually in a few months on a properly-designed development program. The cause of mixed oxidation is usually not easy to figure out and not important.

Definition. Mathematically, mixed oxidation is defined either as a:

- *Calcium/potassium ratio greater than 4:1 AND sodium/magnesium ratio greater than 4.17:1*
- *Calcium/potassium ratio less than 4:1 AND sodium/magnesium ratio less than 4.17:1.*

Mixed oxidizer symptoms. Symptoms of both fast and slow oxidation may occur together, depending on the actual ratios and other imbalances on the analysis.

FAST AND SLOW MIXED OXIDATION

Mixed oxidation is further classified as *fast mixed* or *slow mixed oxidation*. This has to do with whether the ratios indicate one is closer to fast oxidation or closer to slow oxidation. This is important to know, especially for designing supplement and dietary programs.

Determining fast and slow mixed oxidation. The mathematical calculation is basically to determine which ratio is more extreme. For example, in *fast mixed oxidation*, the ratio indicating *overactive* glandular effect is more extreme (further away from its ideal level) than the ratio indicating *underactive* glandular effect. In *slow mixed oxidation*, the ratio indicating *underactive* glandular effect is more extreme (further away from its ideal level) than the ratio indicating *overactive* glandular effect. Here are two ways to do this:

1. A simple mathematical method is to subtract the calcium/potassium ratio from the sodium/magnesium ratio. If the number is *positive*, it is a *fast mixed* oxidizer. If it is a *negative* number, it is a *slow mixed* oxidizer. This is not perfect, but very close and very simple. For example, let us say the calcium/potassium ratio is 6 and the sodium/magnesium ratio is 8. Eight minus six yields 2, a positive number. This indicates a fast mixed oxidation state.

2. Note whether the Na/Mg or the Ca/K ratio is further from the ideal value. Whichever is further from the ideal is the one to pay attention to. Then note if that ratio is showing slow or fast oxidation. If fast, then it is a fast mixed oxidizer.

For example, if the Ca/K ratio is 8 and the Na/Mg ratio 16, the ratio that is further from the ideal is the Na/Mg ratio. When the Na/Mg ratio is elevated, it indicates fast oxidation. Since this ratio is the more extreme, these ratios indicate fast mixed oxidation.

Symptom-based mixed oxidizer programs. In about 80% of cases, the methods above are the best way to guide the design of the diet and nutritional supplement programs. However, in a few cases, symptoms may be a better guide, especially when the mixed pattern is close to balanced – meaning not skewed much toward fast or slow mixed oxidation.

For example, if the sodium/magnesium ratio is 10 and calcium/potassium ratio is 10.5, the person is almost perfectly in the middle between a fast mixed and a slow mixed oxidizer. In this case, deciding how to set up a program is not as easy. In these cases, symptoms can be another way to determine whether to recommend a fast oxidizer or a slow oxidizer nutritional program. This is one of the rare times that symptom pictures are used in development.

If, for example, a person complains mainly of fatigue, depression or constipation, it is likely that underneath the person is a slow oxidizer, regardless of the exact mineral ratios. If, on the other hand, a person complains mainly of anxiety, nervousness, high blood pressure with excellent energy, it is likely that underneath the person is a fast oxidizer, and requires a fast oxidizer supplement program and diet, at least until a retest can be done in a few months. This method is not foolproof, but it may work best in some situations.

Other methods of assessing the oxidation rate. Other methods of determining the oxidation rate are used by a small number of physicians. These include blood tests, questionnaires and others. Everything in this book pertains to Dr. Paul Eck's method of assessment only.

SUB-OXIDATION OR FOUR LOWS PATTERN

Four lows or sub-oxidation, *on an initial hair analysis only*, is often an end-stage stress or death pattern. This very important pattern is described in detail in Chapter 22.

DEATH AS A MEDICAL DISEASE

Medical science does not address this subject in much detail. However, since development is a predictive and preventive science, first and foremost, it is very helpful for practitioners to be aware of patterns on hair analyses that are associated with severe illness and death. For example, it allows a practitioner to say with some authority that a client must, if he wishes to get better, follow the program faithfully in these cases, and even then it may be too late or other factors may intervene and prevent the best outcome.

Causes for death of the body. The underlying causes for death of the body are the opposite of the causes of health and vitality in the body. They include:

- *Toxin accumulation.* These may be toxic metals, toxic chemicals or biological toxins such as bacteria, viruses, fungi, parasites and others. The growth of tumors and cysts in the body may also be viewed as a type of toxin accumulation that can block arteries or press on nerves, for example, causing death.

Toxic thoughts or toxic emotions may also be important. They include negativity, cynicism, resentment, hostility and victim thinking. These do not cause death directly, but may cause a person to eat poorly, drink alcohol, make poor quality decisions, have an accident or waste energy in emotional outbursts or mental upset. Many neuroses eventually lead to death because a person becomes caught up in unrelenting emotions or thoughts and cannot escape. This causes depression and a desire to die in many older people.
- *Depletion of nutrients or malnutrition.* This is a very common cause of death in older people who have weak digestion, often impaired teeth and have trouble feeding themselves as well.

- *Infection*. I list this separately, although it was mentioned under toxins. Infection is specifically a weakening of the immune response or defense systems of the body.
- *Imbalances involving yin and yang*. This may seem esoteric, but has to do with imbalances in the oxidation rate and major mineral ratios. Balance is a key to health. When the body is out of balance, many ailments arise. This is somewhat of a whole system or cybernetic principle.
- *Rigidity*. To continue living, the body and mind must be flexible enough to respond to stress. If the body or mind become too rigid, they are much less able to adapt.
- *Low energy production*. Energy production at the cellular level is a primary cellular activity. Low energy production impairs every other body system since all of them depend on biochemical energy. Low energy is thus an underlying cause for death, no matter what the immediate symptoms or diseases are that a person has.
- *Vicious cycles*. As explained in Chapter 8, negative feedback loops are a key to maintaining balance and health. Positive feedback loops, also called vicious cycles, may lead to death.
- *Entropy, disconnecting or disassociating the parts of the body and/or mind*. This may sound unusual, but simply means that the body's communication systems break down. As a result, nerve and hormonal signals do not get through, or they become distorted. As a result, the integrity of the whole system begins to break down.
- *Discouragement and/or despair*. Many older people, and some young people as well, can become very discouraged for any number of reasons. As a result, they are happy to die to relieve their misery.

DEATH PATTERNS ON A HAIR MINERAL ANALYSIS

Identifying patterns associated with the end of life is important for practitioners and for clients or patients – mainly to begin immediately to alter the pattern if life is to be preserved. All of the following patterns can be changed and ended with a properly designed development program. Note that more than one death pattern can be present on one hair test, such as a four lows pattern combined with a low sodium/potassium ratio. See the index of this book for more in-depth explanations of each of the patterns below:

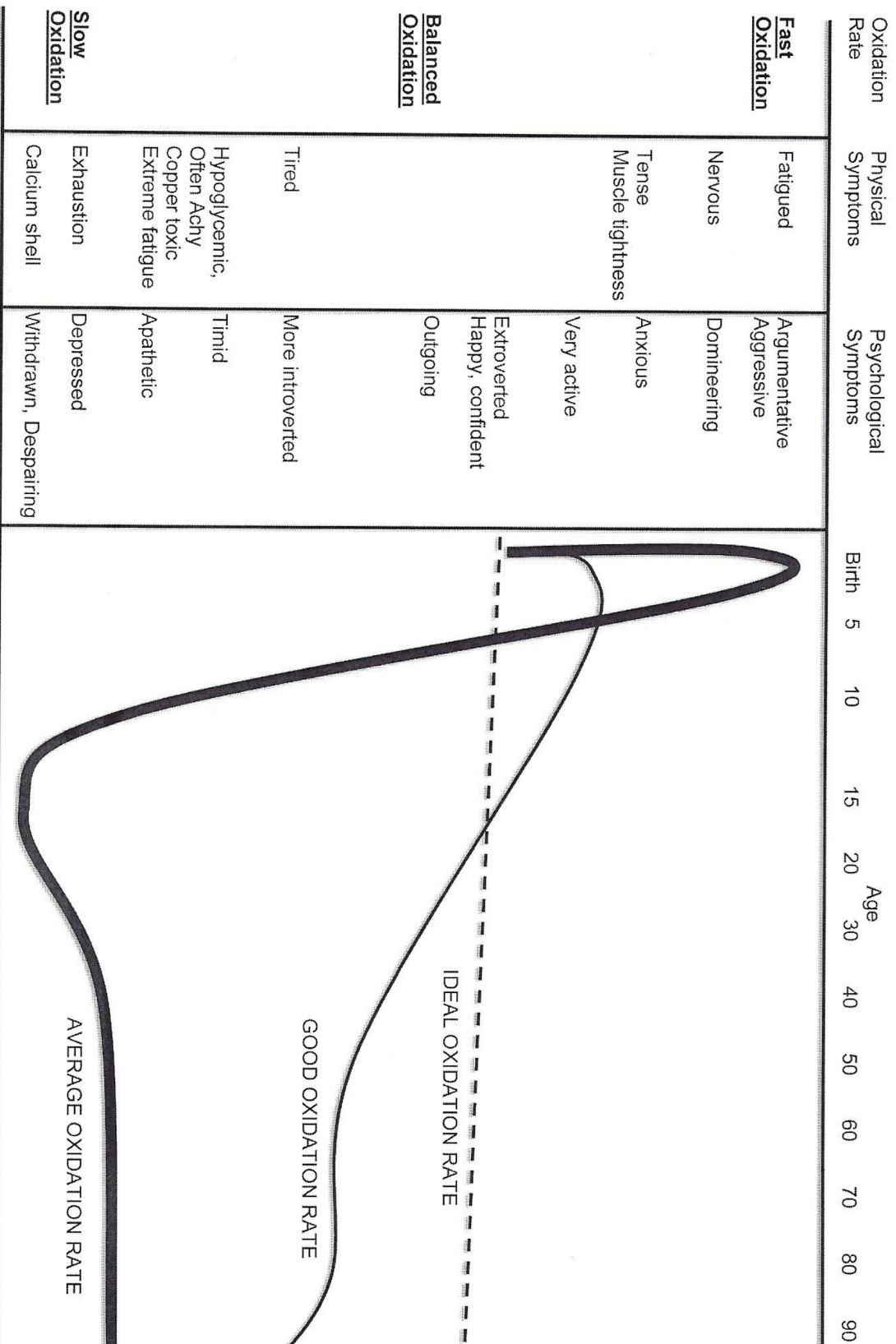
1. Sodium/potassium ratio less than about 0.4. This is an important hidden trauma pattern associated with chronic severe stress. It is an electrical-discharging pattern that cannot go on too long. It is also a *give-up* pattern and a severe *reversal pattern*. For much more on this basic pattern, see page 257 and other references to this ratio in the book index.

2. Double low ratio pattern, also called double inversion pattern or double give-up pattern (Na/K < 2.4 and Ca/Mg < about 3). This is usually a slow death pattern, meaning the person is not in immediate danger. However, there is usually a strong death wish that can manifest at some time in the future.

3. Step Up pattern. This is a variant of *double low ratio pattern* in which the person is in fast oxidation and the first four numbers form a pattern of steps moving up to the right. The steeper the steps go upwards, the worse the pattern. This pattern is associated with a faster or more immanent death, often from a heart attack, stroke or other catastrophic event. This pattern is not seen much because usually the person dies before a hair analysis can be done.

4. Four lows pattern. This is a very chronic death pattern in which the person has, to some degree, entered the so-called *tunnel of death* spoken of by those who have been through a near-death experience. The lower the numbers, the more severe the pattern.

OXIDATION RATES DURING THE LIFE CYCLE



14.

PRINCIPLES OF MINERALS AND DISCUSSION OF THE MACROMINERALS

Barbara, age 72, helps with office work, although she is technically retired and has arthritis and generalized weakness. She is hard-working, thoughtful, caring, kind and smart. She began a development program, but really does not like it. She takes her supplements regularly, but thinks the diet is too restrictive. The water for drinking, she says, is too difficult for her to bring home from the super market. I mentioned that in many cities it can be delivered, however. Also, saunas are just not her style, although she feels well when she does them, and even has a beautiful one in her house that her husband uses. She has a background in nursing, so she understands how important a clean colon can be, but does not like the idea of regular coffee enemas. As a result, she still has her arthritis and fatigue. Some days she has trouble even getting out of bed. She says she tries, but does not do enough of the program, especially at her age, to really undo the toxic metals and nutrient deficiencies that often give rise to common symptoms such as arthritis.

This case is included because development is not for everyone. It is best for those who are committed, self-disciplined and willing to follow a rather strict diet in order to slowly rebuild the intestinal tract and the entire body. The saunas, coffee enemas and meditation practice are not essential. However, for older people and those with chronic health conditions, they are superb and well worth the extra time and effort.

Definitions. R. Buckminster Fuller loved to say that everything on earth is just a combination of the 103 chemical elements – or the *minerals*. Arranged in various ways, they make up our bodies, our food and water, the trees and animals, the air we breathe and all physical items on our planet. Important words concerning minerals include:

- *Atomic forms of minerals.* These are single minerals, though they may come in clusters such as O₂.
- *Molecules.* These are two or more atoms of one element or of several elements.
- *Compounds.* These are molecules made of two or more minerals.
- *Ionic forms of minerals.* These are unbound and usually dissolved in a liquid such as water.
- *Colloidal minerals.* These are similar to ionic, but with a specific particle size, and the particles are usually suspended in liquid and electrically charged so they stay suspended.
- *Metals.* These are a particular group of minerals. All conduct electricity well and have other common properties. They include copper, iron, zinc, manganese, molybdenum, lithium, cobalt, magnesium, selenium, uranium, lead, mercury, cadmium, aluminum and others.

- *Alloys*. These are mixtures of metals that are melted and then mixed together, often in a special order and in special proportions. Steel, stainless steel and many other are alloys.
- *Amalgams*. These are like alloys, except they are mixed together at room temperature, usually. Dental amalgams contain mercury, copper, cadmium, and silver, for example.
- *Synergists*. These are minerals that help each other to function better in some way.
- *Antagonists*. These are minerals that function in ways that compete or oppose each other. They may compete for absorption or they may replace each other in enzyme binding sites.
- *Co-factors*. These are minerals that are required at the same time in an enzyme.
- *Catalysts, facilitators or enzyme activators*. These are minerals or other chemicals that are needed to make a chemical reaction happen, even though the mineral or substance is not directly part of the reaction.
- *Inhibitors*. These are minerals or other substances that slow down or stop a chemical reaction or an enzyme from functioning. Fluorides and bromides, for example, are potent inhibitors.
- *Isotopes*. These are variants of all the minerals with names like carbon-12, carbon-13 and carbon-14. All the isotopes or variants of a mineral have the same number of protons in the nucleus, but a different number of neutrons. The more neutrons, the heavier the element.
- *Chelates or chelated minerals*. These are minerals that are attached to or bound to amino acids or other substances. Many minerals are absorbed and utilized better in this form.
- *Mineral chelators*. These are substances that bind very tightly to various minerals and, for this reason, are used to remove minerals from the body.
- *Mineral transporters*. These are substances that carry minerals throughout the body.

Minerals in our food. Minerals are perhaps the most important groups of nutrients human beings require. Unlike some vitamins, for example, minerals cannot be made inside the body and must come from the diet or drinking water. Minerals regulate most body functions by participating in all chemical compounds in our bodies. They also form the structure of the body.

PRINCIPLES OF MINERALS

- *Eck's law of minerals: Every mineral has an effect on every other mineral.* It is scientifically impossible to change the level of even one mineral in the body without simultaneously changing the levels of ALL other minerals. This is basic systems theory.
- *There is a mineral system in the human being.* This is an extension of the principle above. It means that minerals are maintained in specific balances with each other in our bodies.
- *The major minerals must be maintained in a certain balance in our bodies or disease results.* In practice, this means that we are rarely facing just a zinc deficiency or a copper toxicity. All the minerals must be maintained in the proper balance for optimum health.
- *Balance is expressed mathematically as ratios between minerals.* For example, a sodium/potassium ratio expresses the relationship or balance between sodium and potassium.
- *Most of humanity around the world is quite mineral deficient.* The impact of this is incalculable in terms of human health and disease. One of the tasks of development is to remineralize the body. This usually takes several years, though symptomatic change may occur much sooner. Dr. Eck was one of the very few scientists and clinicians who understood the importance of mineral nutrition, how deficient the population is, how to gently restore the balance, and how long correction requires. He was fond of saying that

“medical doctors know it can take 9-12 months to replenish just one mineral such as iron. Imagine how long it takes to replenish a dozen or more trace elements.”

- *The bioavailability of a mineral is critical.* Dr. Eck was a pioneer in the area of mineral bioavailability. It means that minerals must be in particular forms or combinations to be utilized. Otherwise, they cannot be utilized correctly, even if they are present in abundance.
- *Symptoms of a mineral deficiency are often identical to the symptoms of a mineral excess or bioavailability.* Dr. Eck observed this over and over again. For example, too much copper or too little copper can cause symptoms of a vitamin C deficiency. Too much copper oxidizes and destroys vitamin C. Too little copper inhibits the activity of ascorbic acid oxidase, a copper-dependent enzyme needed to activate vitamin C in the body.
- *The interactions between the minerals are a central theme in development science.* These interactions are used to balance the minerals on a hair mineral analysis. This is very different from administering foods or supplements to simply replace low minerals. The latter is called *replacement therapy*. It is far less effective, in our experience.
- *Measuring minerals in the body is not a simple task.* The reason for this is that each mineral is present in every tissue and organ in different amounts. A reading in the blood does not tell one much about the cells, for example. A liver biopsy may not tell one much about the amount in one's brain, and so on. As a result, *any method of assessing mineral levels offers only limited information about them.* This is why general systems theory and cybernetics concepts, and ideas such as the oxidation types, are required to help figure out what is occurring in the body as a whole, and how to correct it at the deepest levels.
- *Minerals can substitute, displace and even “defend” each other.* Chapter 21 discusses these interesting properties of minerals.
- *Finally, all the above means we must keep a humble attitude when dealing with the complexity of minerals.* Simple concepts can never explain all their properties.

PROBLEMS WITH MINERALS TODAY

Most everyone today is deficient in essential minerals such as calcium, magnesium, zinc, selenium and manganese. In most areas of the world, the soils are low in minerals because they have been farmed too much and incorrectly. The problem is the human and animal waste matter is not returned to the soil, and is instead flushed into the oceans where it is a pollutant. The refining of table salt makes the mineral deficiencies much worse. Eating refined grains such as white flour and white rice also make the mineral deficiency problem much worse in most parts of the world today.

Improper eating habits such as eating too many foods at once, overeating, eating on the run in a car, for example, or eating at one's desk instead of sitting down quietly, also reduces mineral absorption even more. The use of thousands of food chemicals and additives often irritates the intestines and reduces mineral absorption even more. In addition to all this, other problems related to mineral nutrition are:

- *Parasitic infections.* These further impair mineral absorption and utilization. The problem is worst in underdeveloped nations, but occurs in America, Europe and Asia as well. Eat cooked food only in most nations today, even in American restaurants, for safety reasons.
- *Congenital deficiencies.* All babies today are born low in important trace minerals. This occurs because their mothers, in particular, are usually horribly mineral deficient.

- *Impaired digestion.* Stress, intestinal infections such as candida albicans, improper eating habits and improper food preparation, among other reasons, impairs digestion in most people. This is why everyone is given a digestive aid in development science.
- *Drinking water somewhat helpful.* This can be a decent source of minerals, but is generally not too good because there are too many competing substances that impair mineral absorption. However, this is one reason to avoid drinking distilled or reverse osmosis water except for short periods of time. In development, distilled water is used for detoxification only for the first three to nine months when one begins a program. It can also be helpful for short periods of time during some detoxification or healing reactions.
- *Sea salt a good source.* A high quality sea salt such as Real Salt or Celtic Salt, can add a significant amount of minerals to a person's diet. Most everyone should use quality sea salt in the diet. However, never add salt to water, as some doctors are now recommending.
- *Kelp and vegetable juice are helpful.* The other general mineral supplements used in development science are kelp, and carrot and green juice up to 10-12 ounces daily, and perhaps Veg-easy or dried vegetables in a capsule or powder form. These all help supply more minerals to the body in highly absorbable forms. Do not use much of other sea vegetables such as nori. All sea vegetables contain significant levels of toxic metals. Kelp, however, is acceptable because it contains more substances that help remove toxic metals.
- *Digestive aids are also helpful for many people, especially older adults.* I recommend a powerful digestive aid called GB-3 for almost everyone because it helps mineral absorption.
- *Herbs, and most other trace element and electrolyte drinks and solutions.* These are often not helpful, and are often toxic. Many do not contain enough of the trace minerals most people need such as zinc. Many also contain some toxic metals.

INDIVIDUAL MINERALS - THE MACROMINERALS

The major blood and tissue macrominerals are calcium, magnesium, sodium and potassium. Some people also include phosphorus, sulfur, chlorine and a few others in this category.

CALCIUM (Ca)

Calcium is called the **structural** element because almost all of it is in the bones. However, calcium is also vital in small quantities for nerve tissue and a little is in the blood. Calcium is one of the most plentiful elements on the earth and in the body. Calcium is also a critical mineral for life on earth, as it is required for the formation of calcium carbonate and other essential mineral compounds that are used in the oceans by plant life.

Excellent quality bioavailable calcium is lacking in the diets of most people. The main food sources are raw and organic dairy products, carrots and carrot juice and a few other vegetable sources such as nuts and seeds. However, when cows milk is pasteurized and homogenized, calcium availability declines greatly. As a result, most people are not benefiting enough from the calcium in the milk, cheese and yogurt they are consuming.

Strict vegetarians (vegans) can have even more difficulty obtaining enough calcium, although greens and products such as carrot juice are excellent sources if one eats or drinks enough of them. One must drink about 10-12 ounces of carrot juice daily. Seeds and nuts such

as almonds and almond butter are also good sources of calcium. However, one must eat at least a few spoonfuls of almond butter daily to obtain enough calcium. Most people do not digest seeds and nuts well enough in the whole food form, so nut butters are better sources of calcium.

FUNCTIONS OF CALCIUM. These include:

- *Structural strength of the bones.*
- *Muscle and nerve contraction and relaxation.*
- *Cell permeability regulation.* In excess, it reduces cell permeability.
- *Thyroid and parathyroid activity.* Calcium inhibits thyroid-stimulating hormone (TSH). Hormones from these glands, in turn, help regulate calcium balance.
- *Hormone secretion, including female hormones and insulin secretion to a degree.*
- *Cell division.* For example, cancer will often improve as calcium metabolism is balanced.
- *Autonomic balance.* Calcium inhibits the sympathetic nervous system, which is one reason for giving calcium supplements to most people today.
- *Phosphorus metabolism and energy production in the Krebs or carboxylic acid cycle.*
- *Detoxification.* Calcium antagonizes lead and cadmium.
- *Blood clotting.*
- *Fat digestion.*
- *pH balance.* Bioavailable calcium is extremely alkaline-forming and is used to neutralize lactic acid and help maintain the pH balance of the blood and the tissues.

Psychological qualities associated with calcium are stability, hardness, rigidity and perhaps physicality. Calcium is also an important sedative mineral. When deficient or bioavailable, as it often is today, one becomes weak, spacey and too flexible in one's thinking and reasoning. However, since it builds up pathologically, the person also becomes defensive, "hard" and rigid in the personality.

A psychological buffer element. Calcium decreases one's sensitivity to stressors of all kinds. For example, ADHD children often have low calcium in the hair tissue. This contributes to their hypersensitivity and nervousness. They may be very sensitive to other children, or to noise or other types of stressors. They are lacking in this important buffering element.

A calcium shell. This occurs when a hair tissue calcium level is above 170-180 mg%. It is common, especially in adult women, and is associated with psychological withdrawal, depression and emotional suppression in most cases. It can cause a degree of sexual numbness, as well. It also lowers one's awareness level, like living behind a concrete wall of calcium.

The calcium personality type, which is different from the calcium shell, tends to be earthy, plodding, steady and blunt. They often move slowly and awkwardly, and are unpolished in their language and mannerisms. They develop slowly and have a great potential for love and spirituality. These individuals are often farmers and other manual laborers.

CALCIUM DEFICIENCY SYMPTOMS. These include osteoporosis, rickets, non-union of fractures, tooth decay, irritability and insomnia. Others are poor posture, misshapen teeth and other bone abnormalities such as bowed legs. Others include muscle cramps, irritability, hyperkinesis, hyperacidity, bruising, high blood pressure, fight-or-flight reactions, fast oxidation, lead and cadmium toxicity and cancer. Other symptoms could occur secondary to these because calcium is involved in many body functions. Phosphoric acid in soda pop worsens calcium deficiency.

CALCIUM TOXICITY SYMPTOMS. These may include fatigue, depression, defensiveness, muscle weakness, pain, arteriosclerosis, arthritis, kidney stones and perhaps gallstones. Others are bone spurs, rigidity, slow metabolism, constipation, social withdrawal and spondylitis (rigidity and inflammation of the spine).

Biounavailable Calcium. In many instances, calcium is *biounavailable*. This means it is present, but cannot be used properly for some reason. This condition causes *symptoms of deficiency and excess at the same time*. Biounavailable calcium is present to some degree, as a rule, whenever the hair calcium level is over about 80 mg% or about 800 parts per million. This occurs most in slow oxidizers. Symptoms are typically anxiety and fatigue at the same time. Many also have some degree of osteoporosis, arthritis, muscle tightness or cramps, and perhaps calcium deposits in various organs or tissues, especially if a person is older than about 35.

PHYSIOLOGICAL EXPLANATION OF THE ABOVE. The following is from the *Textbook of Endocrine Physiology*, 2004, by James E. Griffin and Sergio R. Ojeda, p. 358. “In humans, maintenance of extracellular calcium ion concentration within narrow limits is essential for a number of vital functions including mineralization, blood coagulation and membrane function. Ionic calcium also plays an important role in the permeability and excitability of plasma membranes.

“When the extracellular fluid concentration of calcium ions falls below normal, the nervous system becomes progressively more excitable because of increased permeability of the neuronal membrane to sodium. Nerve fibers become hyper excitable, spontaneously depolarized and initiate nerve impulses to peripheral skeletal muscles, thus eliciting tetanic contraction. This effect is the basis for the muscle spasms and marked hyperreflexia seen in hypocalcemic tetany. The traditional positive Chvostek sign – a twitching of the facial muscles in response to tapping over the facial nerve at the angle of the mandible – is one manifestation of hypocalcemic tetany. In severe hypocalcemia, increased central nervous system irritability may lead to seizures.

“An increase in serum ionized calcium depresses central and peripheral neural excitability, resulting in mental sluggishness and hyporeflexia.”

“Acute acidosis decreases binding and increases ionized calcium, whereas acute alkalosis (author’s note - in serum, in slow oxidation) increases binding with a consequent decrease in ionized calcium.”

CALCIUM IN THE LIFE CYCLE. Children need a lot of good quality calcium for their bones and for their developing nervous systems. This is just one reason why a child’s diet is so critical for his physical and intellectual development. Unfortunately, pasteurized and homogenized milk is not nearly as helpful as certified, raw milk or fresh mother’s milk in terms of calcium bioavailability.

Full-fat milk best. Babies and children almost always need full-fat milk. Some parents believe that children will become fat if they drink whole milk. In fact, the opposite is true, assuming the rest of the diet is healthful. Skim and low fat milk are not healthful for most children as they are too high in sugar and too low in fat. I am told that farmers use low-fat milk products to fatten hogs. Even worse than commercial low-fat milk for children is to substitute soda pop, tea, water or soy milk for the more nutritious breast milk or an organic, certified raw cow, goat or sheep milk.

Breastfeeding and substitutes. *Ideally, children should be breastfed for at least two or three years.* If possible, continue breastfeeding until the child will not accept any more, or at

about age three. This will give a child the best start in life. If breast feeding for three years is not possible, or the child will not accept breast milk, then a formula made with whole goat milk, or a meat-based or organic, raw cow's milk formula is usually next best. The next best would be a formula made with almond or rice milk. Soy is not the most desirable beverage for babies, children or anyone else because of problems ranging from genetic modification to phytates and enzyme inhibitors. See below for information about natural milk formula for babies. Babies and mothers should be relaxed when feeding. Children will often vomit if they are uncomfortable when feeding.

Wet nurses. Breast milk does not have to come from the biological mother. Most any wet nurse would do. In earlier times, this was the habit and still is the case among primitive tribes who understand more about this subject than do most highly educated Westerners.

Dairy cows are hybrids. Unfortunately, most cows are bred for the highest milk production, not for a balanced, nutritious milk. The milk is somewhat high in female hormones, and often contains antibiotic residues. This is not healthful for babies or anyone else, either. For these reason, look for organic and preferably raw, certified animal milks if breast milk is not available. Always prepare baby formula at home and do not use ready-made formula, if possible. *Nourishing Traditions* by Sally Fallon contains several formula recipes.

Fruit juices and soda pop deadly for children. Juices and soda pop usually contain fruit acids or phosphoric acid that bind calcium, magnesium and zinc and remove these essential minerals from the body. Also, sugars found in these products interfere with calcium metabolism. The fact that a juice is enriched with calcium is not that helpful, as it is often not well absorbed.

How to drink milks. Milk is really a food, not a beverage. It should be sipped slowly, as babies do, and swished in the mouth before swallowing it. Gulping down large glasses of milk, as many people do, is not the best way to enjoy good quality milk.

DIETARY SOURCES OF CALCIUM. Excellent calcium-rich foods include raw, certified milk, cheese and yogurt. Others are carrot juice, sardines, caviar, cod roe, smelt and egg yolks. Soups made with bones of lamb, chicken, or veal joints are also excellent sources. Comfrey, Swiss chard and other green plants are also excellent. The next best sources are brewer's yeast, kelp and other sea vegetables. Other sources are almonds, sesame seeds, beans and filberts. Dark green vegetables such as kale, collard greens, mustard greens and turnip greens are also good.

Corn tortillas or corn chips prepared in the traditional way with lime are other decent sources of calcium. Corn bread or corn eaten as a vegetable are not good sources unless they have added lime. Pasteurized, homogenized milk, cheeses and yogurts are not as good sources due to the processing of the milk. Also, many people have sensitivity to dairy products today that make them unsuitable for some adults.

Strict vegetarians need calcium. Although calcium is found in greens, nuts and seeds, the calcium from these sources is generally less available than in raw dairy products. Vegetarian diets are also often lower in calcium synergists such as vitamins A and D.

CALCIUM SUPPLEMENTS. The best calcium supplements are food-based such as carrot juice or kelp. Kelp combines calcium with other minerals needed for calcium utilization. It also contains alginates that help bind the toxic metals found in all sea products. Some people, especially fast oxidizers, may become anxious eating kelp, however, due to its iodine content that may stimulate the thyroid gland. Other excellent calcium supplements include calcium

lactate, citrate, true chelates and gluconate. Bone meal used to be popular and is a superb supplement if it is not contaminated with lead. Microcrystalline hydroxyapatite crystals (MCHC) is another excellent form of calcium. Other good forms that are used less often are calcium orotate and aspartate.

Calcium carbonate (dolomite), phosphate, dicalcium phosphate and tricalcium phosphate are as not well absorbed. Calcium carbonate is common chalk. It is extremely alkaline and found in Tums, other anti-acids and coral calcium. Adequate stomach acid is important for digestion and carbonate supplements will deplete stomach acid to a degree. This can interfere with proper digestion. In dicalcium and tricalcium phosphates, the phosphorus binds tightly to the calcium, reducing its absorption to a large degree. Tiny amounts of these products are sometimes used as fillers in vitamin tablets, which is fine.

Coral calcium supplements are popular, but may contain toxic metals. In his book, *Barefoot on Coral Calcium, An Elixir of Life*, author Robert Barefoot mentions that coral calcium contains significant amounts of iron, aluminum and strontium. Aluminum and strontium are poisons. Most people also have toxic levels of iron stored in their livers. Dr. Barefoot dismisses this problem. His book is poorly referenced and contains no scientific studies of coral calcium. I suggest avoiding coral calcium. Many mineral supplements can make one feel good for a while due to a high toxic metal content. Be very careful with them. Serious imbalances can take years to develop and can be difficult to correct. Many calcium preparations in drug stores also contain lots of sugar. Some are even sold like candy. These products will be less effective because sugar upsets calcium metabolism. Usually, the calcium is in the form of calcium carbonate, a poorly absorbed form. I suggest avoiding calcium carbonate and sugared calcium supplements.

Most people need some calcium. The only exception is if the hair calcium level is excellent and the patient is a male. Otherwise, Dr. Eck gave everyone a significant amount of supplemental calcium and magnesium. Reasons for this are:

- *Most people do not obtain enough bioavailable calcium in their diets.*
- *Calcium and magnesium help relax the sympathetic nervous system. This is very helpful for almost everyone.*
- *Many people, especially slow oxidizers, have bioavailable calcium to some degree.*
- *All women, and perhaps some men, benefit from extra calcium to help prevent and correct osteoporosis.*
- *Calcium is protective against several toxic metals that are common in the environment.*
- *Calcium and magnesium supplements help many people relax and sleep better.*

CALCIUM AND HAIR MINERAL ANALYSIS. According to Dr. Eck's research, an ideal calcium level in a hair sample that is not washed at the laboratory is about 40 mg% or about 400 parts per million. A good range is about 35 to about 65 mg%. When calcium is in this range, a person's overall health is usually better than if it is lower or higher. Fast oxidizers tend to have low levels, as low as 10 mg% or even lower. This is associated with calcium deficiency and a fight-or-flight response. Slow oxidizers have higher levels, in general, up to 1000 mg% or 10,000 parts per million or even higher. This is associated with calcification of the tissues and severely bioavailable calcium.

While these are by far the most common situations, occasionally others also arise:

- *In four lows pattern the hair calcium is low, but the person may be a slow oxidizer.*

- *Some fast oxidizers have a somewhat elevated hair calcium level.* Usually they are *temporary fast oxidizers*. This just means the person will shift into slow oxidation in most cases within a few months of beginning a development program.
- Mixed oxidizers can also have unbalanced calcium levels.

Reasons for a low hair tissue calcium in babies and other fast oxidizers:

- *Excessive adrenal activity in fast oxidizers causes sodium retention by the kidneys due to the action of aldosterone.* This raises the tissue sodium level, which causes calcium to become more soluble in the blood. This, in turn, causes a loss of calcium loss through the kidneys. It is an adaptive mechanism, in theory, because calcium relaxes the nervous system. A lower blood and tissue level tends to cause a state of heightened alertness to prepare an animal or human being to fight or run. While advantageous during a threat to one's life, most babies remain in this pattern for years, causing behavior problems and depletion of many minerals.
- *A dietary calcium deficiency.* Babies usually obtain enough calcium from breast milk. Once the baby is weaned, however, the diet today often contains poor quality sources of calcium such as pasteurized and homogenized milk, cheese and yogurt. This is a serious problem today. To repeat, ***those who live in a fight-or-flight pattern much of the time are continuously losing calcium in their urine.*** Knowing all of this at a glance from a properly performed hair mineral analysis gives one a lot of information about a client almost instantly. In addition, the measurement is mathematically precise. This is also helpful to avoid guesswork that is so common in medical care.

Hair calcium in slow oxidation. As the body tires out, it goes into the exhaustion stage of stress. Here an entirely different calcium imbalance occurs. Calcium cannot be kept in a soluble enough form in the blood, due in part to reduced levels of tissue sodium and potassium, which are elements that solubilize or dissolve calcium. Calcium then begins to precipitate out of the blood and becomes deposited in a biounavailable form in the soft tissues. It may deposit in the hair, skin, arteries, joints, ligaments and to some degree organs such as the brain, liver, kidneys and others. Dr. Selye described this interesting phenomenon in his book, *Calciphylaxis*.

Calcium is usually depositing pathologically whenever a hair calcium level on an initial hair test is greater than about 80 mg%, although I do not recall Dr. Eck giving an exact hair calcium reading that indicates the beginning of this condition. Its severity depends on how long the pattern has been present and how high the hair calcium is. On retests during a development program, other factors can raise the hair calcium such as the release and elimination of biounavailable calcium from the body tissues.

The calcium shell pattern. As the hair calcium level rises higher than about 170 mg% or so, Dr. Eck called it a *calcium shell pattern*. This is a more severe state of calcium biounavailability. It also has important psychological implications, which are discussed in detail in Chapter 42. These include a diminished awareness level, as though one is living behind a high wall. Associated with this is a degree of psychological withdrawal, emotional suppression or repression and often feelings of fatigue and depression.

Biounavailable calcium is one of the most important imbalances today. Calcium deficiency is important. However, even more important for adults is biounavailable calcium. It is the number one killer of adults because it contributes to:

- “Hardening” of the tissues, especially the arteries, which eventually causes heart failure.
- Acidification of the tissues, though often with a falsely alkaline saliva or urine pH. This, in turn, leads to cancer in many cases and is the reason people are excited about any therapy that can alkalize the tissues. However, avoid most simplistic methods to alkalize the body, particularly alkaline water machines. These are discussed in Chapter 2.
- Destruction of the joints and the bones as well.
- Dementias and other nervous system problems due to calcification of the arteries leading to and within the brain. Also, calcium often deposits in the brain tissue itself.
- Others include venous problems and sclerosis of the organs. All this may be part of aging.

What about chelation therapy for calcium deposits? EDTA and other chelating agents can remove significant amounts of calcium from the body. They are used by some doctors to clean plaque from the arteries. However, chelation is not part of development. Its problems are it always removes some essential minerals, the agents may be somewhat toxic to the kidneys, it does not respect the body’s natural order of healing and metal removal, and most important, it does not seem to be needed. Development seems able to remove most toxic metals at much deeper levels, at times faster, and in a safer fashion.

PTH and high hair calcium. Dr. Jeffrey Bland, PhD, states that a high hair calcium is due to hyperparathyroidism and excessive secretion of parathyroid hormone or PTH. This is an interesting theory. However, I would not agree with this in most cases for the following reasons:

- Calcium is very elevated in so many hair analyses that it would mean that parathyroid disease is epidemic, which it is not. Dr. Bland is correct if he only means extremely high calcium levels, but I believe he generalizes to most high tissue calcium.
- Calcium is low in the bones of most slow oxidizers. This should not be the case if PTH is high in all these individuals.
- PTH raises calcium in the blood, but not in the hair. This is not mentioned by Dr. Bland, but is an important fact.

CALCIUM SYNERGISTS. Magnesium balances calcium in many ways, some of which appear to be very subtle. One of its important roles is to help keep calcium in solution. This is a critical role, as calcium tends to form hard compounds with phosphorus and other minerals. Hardness is wonderful when needed, but in the wrong places it clogs the arteries, irritates the tissues and restricts blood flow to the kidneys and to other organs. This is why magnesium intake is so critical today, especially if one is supplementing calcium, as many people are doing. On hair analyses, magnesium usually moves in the same direction as calcium, especially when a person is healthy, and even in many disease states. If it does not, it usually indicates health problems. The hair calcium to magnesium ratio is kept within a tight range in healthy people, between about 4:1 and 9.5:1.

Phosphorus is synergistic with calcium in the bones and in many other compounds. **Silicon** is another calcium synergist. It may be transmuted into calcium, according to Dr. Louis Kervan, author of *Biological Transmutations*.

Adequate hydrochloric acid in the stomach and **adequate protein in the diet** are also required for calcium utilization. The body generally chelates calcium in the stomach. This means that the body links calcium to proteins or amino acids in the stomach so that it is absorbed

better. This process requires sufficient hydrochloric acid, as well as the presence of amino acids from protein foods.

Sodium and potassium enable calcium to remain in solution in the blood, according to Dr. Eck's research. Too much, however, leads to calcium loss from the blood through the urine. Sodium and potassium are also critical for calcium metabolism in many enzymes. In fact, a recent study found that potassium is required for bone strength or density. (Jehle, S., et al., Partial neutralization of the acidogenic Western diet with potassium citrate increases bone mass in women with osteopenia, *J Am Soc Nephrol.* 2006;17:3212.)

Copper is required to fix calcium in the bones and helps raise the tissue calcium level.

Iodine is required for thyroid activity. Deficiency can cause a hypothyroid condition and resultant calcium imbalance. Low thyroid activity is associated with bioavailable calcium and calcium deposition in the soft tissues.

Boron is also synergistic with calcium in subtle ways. Boron supplementation is known to help maintain the bones in some people. Its mechanism may be to improve adrenal gland activity, which makes copper and calcium more bioavailable.

Vitamin A is synergistic with calcium for cell membrane activity and perhaps for nervous system activity, as well.

Vitamins D assists the absorption of calcium from the intestinal tract and may assist the deposition of calcium into the bones. **Adequate adrenal hormone levels** are essential for proper calcium metabolism. **Infrared light** and **full-spectrum light** are also extremely beneficial for calcium metabolism. In part this is due to their effect on vitamin D levels. However, they may have more subtle benefits as well.

CALCIUM ANTAGONISTS. **Dietary sugars**, including fruit sugars, upset the calcium/phosphorus ratio in the blood more than most other factors. This was the research of Melvin Page, DDS, author of *Degeneration, Regeneration*. Sugars also tend to stress the adrenal glands and upset other hormone balances. These, in turn, may upset calcium metabolism as well. **Caffeine** stimulates the adrenals and eventually weakens them badly. **Phosphoric acid or fruit acids** bind to calcium from the diet and form insoluble compounds that are difficult to absorb. In this way, phosphoric acid causes calcium deficiencies. Soda pop containing sugars, caffeine and phosphoric acid is a deadly combination for this reason. Unfortunately, it is not true that all fruit acids are immediately changed to harmless compounds in the body.

Strontium. This is a toxic metal that competes to some degree with calcium for absorption. Some holistic doctors give strontium supplements, but Dr. Eck did not use them or need them. A better answer is to correct the calcium balance, which can be done with development. Calcium may be antagonistic in some instances with **magnesium, sodium, potassium, phosphorus** and other minerals that compete with it for absorption.

Lead can often easily replace calcium in certain enzyme binding sites throughout the body, and in certain parts of the bones. Hidden lead toxicity, for example, is an important cause of weak bones, osteoporosis and other bone problems, including some unexplained fractures and unexplained anemias. Bone density may appear normal. Toxic metal assays using blood, urine or hair may not reveal excessive lead when it is deeply buried inside the bones. Lead toxicity is still a major cause of illness in the world, although lead is used less in industry today.

Cadmium also replaces calcium in some enzyme binding sites and perhaps in the bones. Cadmium also antagonizes calcium in other ways. Among other effects, cadmium hardens and weakens the arteries and causes inflammation. The body then coats the arteries on the inside

with calcium and fatty plaques to protect them from rupturing. This is a pathological use of calcium, however, that causes cardiovascular disease and often death. **Fluorides** may assist calcium to a small degree in the bones. However, too much, as is found in most American drinking water supplies, competes with calcium for absorption and utilization, and tends to weaken the bones. It causes more hip fractures, for example, in those who drink fluoridated water and perhaps causes problems for those who use fluoridated toothpaste as well.

Phytates are phosphorus compounds found in uncooked grains, soy products, improperly prepared bean dishes and occasionally other foods. They bind calcium and prevent its absorption. **Excessive oxalic acid** found in spinach, cranberries, rhubarb and tea can interfere with calcium utilization if these foods are eaten in large enough quantities. In small quantities they are fine, however. **Low stomach acid and low protein diets** impair calcium utilization. Calcium must be bound to amino acids in the stomach and intestines to be properly utilized.

An alkaline pH in the stomach for any reason impairs calcium utilization. This is one of many reasons I do not recommend the very popular alkaline water machines. **Anti-acids and acid-blocking drugs** interfere with calcium absorption for the same reason.

MAGNESIUM (Mg)

Magnesium is another **structural** element, but has mainly to do with enzyme structures, not physical ones. Magnesium is involved in *every body function*, where it is required for thousands of critical enzymes everywhere in the body. It is also one of very few minerals that cannot be replaced by a less preferred mineral in many of these enzyme systems.

Magnesium is low in almost everyone today due primarily to low dietary intake. Refined grains, fruits, soda pop, coffee, teas and cows milk dairy products contain very little magnesium. These are also the most widely eaten foods, except for meats and eggs. Vegetables, nuts, seeds and whole grains are good sources, but most people do not eat enough of these.

Stress and too much exercise also use up magnesium quickly. Very few sports drinks replenish it in great enough quantity, for instance. In addition, most people cannot use the magnesium they have in their bodies due to its biounavailability. This is discussed below.

MAGNESIUM DEFICIENCY SYMPTOMS. These include anger, belligerence, irritability, fatigue and pain due to muscle tension, as seen in conditions such as fibromyalgia. However, magnesium activates and assists with so many enzymes that symptoms can include almost anything.

The Myers magnesium cocktail. The late John Myer, MD developed the now famous “Myers cocktail”. It consists of intravenous magnesium mixed with other minerals and vitamins. He wrote that this simple cocktail helps with a number of ailments, thanks to widespread deficiencies of magnesium and other vitamins and minerals. It can help with symptoms of asthma, migraines, fatigue, acute muscle spasms, upper respiratory infections, chronic sinusitis, seasonal allergies, rhinitis, cardiovascular disease and others. However, Myers cocktails and other IV minerals are not recommended in development because they are a “shotgun” approach, not nearly as safe, and not effective for delicately balancing body chemistry. Their value is in replenishing minerals and vitamins quickly, often in a few days. Once this is done, then one is better served, in our view, with a delicate and precise program of oral nutrients according to the principles in this textbook.

Intravenous (IV) or intramuscular (IM) magnesium are also widely used in hospitals for obstetric emergencies such as eclampsia and pre-eclampsia, heart attacks and many other emergencies, for which it is excellent. It is less effective, in my experience, for long-term use, as its effect tends to wear off after a few days to a few weeks. This tells us the magnesium shots or IVs fill a need, but they do not, on their own, restore the mineral balance. Magnesium oil has similar symptomatic effects, but is dangerous for longer-term use and should be avoided for all but short-term use.

MAGNESIUM AND HAIR ANALYSIS. An ideal hair magnesium level is about 6 mg% or 60 parts per million. This does not mean, however, that a magnesium deficiency is not present. In fact, most people need more magnesium, regardless of the hair level. Fast oxidizers often need the most, and their hair levels are usually low. Slow oxidizers tend to have higher hair levels, but it is often somewhat biounavailable. Dr. Eck supplemented most people with magnesium and gave more, at times, if the magnesium level was very high or very low.

Biounavailable magnesium on the hair analysis. When magnesium is above about 9 mg% it is at least partially biounavailable. This is a problem for millions of people. Symptoms of this imbalance may include fibromyalgia and other types of pain, irritability, insomnia, muscle weakness, depression, muscle cramps, especially after exercising, and possibly others.

MAGNESIUM SYNERGISTS. These are similar to those for calcium. They include **vitamins A, D, E, K** and perhaps a few others. Vitamin D, for example, appears to assist magnesium metabolism, not just calcium absorption. **Vitamin B6** or pyridoxine has a close relationship with magnesium. By taking B6, one can enhance magnesium effects and vice versa. Magnesium is thought to help vitamin B6 to be incorporated into some enzymes. **Vitamin B1** or thiamin is a synergist with magnesium in glucose metabolism. **Vitamin C** is a synergist in connective tissue synthesis. **Tetraiodothyronine** or **T4** increases cellular magnesium levels. In fact, many nutrients are synergistic with magnesium because magnesium is involved in almost all body functions.

MAGNESIUM ANTAGONISTS. Magnesium antagonists tend to be somewhat similar to those for calcium. Important ones include **calcium, sodium, potassium, phosphates, fluoride, all toxic metals** and others. **Alcohol** severely depletes magnesium. This is due, at least in part, to the fact that metabolizing alcohol uses up many magnesium-dependent enzymes. This requires them to be reconstituted, using up a lot of magnesium. Alcohol is also a diuretic that can remove magnesium from the body through the kidneys.

Diarrhea. Magnesium is rich in the stool as it passes through the digestive tract. If diarrhea occurs, significant amounts of water and magnesium are lost from the body. This can help deplete magnesium. Several days of diarrhea are not a severe problem. However, if one has chronic intermittent diarrhea, as can occur with irritable bowel syndrome or colitis, magnesium loss can be significant.

Soda pop and sugar in the diet lower magnesium levels. These contain phosphorus compounds that bind firmly to magnesium, along with calcium and zinc, and tend to remove these minerals from the body. Soda pop is the worst. Some of the 'high' that one gets from drinking soda pop is actually magnesium depletion that causes a form of anxiety and irritability. Even the high phosphorus content of meat, eggs, cheese and other animal proteins lowers magnesium to some degree, but not that much because these foods contain some magnesium.

Exercise. Exercise uses up some magnesium. This contributes to leg cramps, shin splints and other symptoms that come with exercise. It can explain the ‘high’ of exercise to some degree as well. **Ionizing radiation** can lower the body’s magnesium level significantly. It is not usually noticeable unless exposure is chronic and intense. Taking extra magnesium before radiation treatments may help protect one from some of the damage due to radiation therapy.

SODIUM (Na)

Sodium is the **solubility** and **volatility** mineral. It is found mainly outside the cells or *extracellularly*. Although sodium does not participate in a single enzyme in the body, it is the body’s great solvent, meaning it dissolves many chemicals. It is also a major regulator of the fluid balance, pH and other fluid-related aspects of the body. These are its major functions.

The great solvent. Sodium is a monovalent element, meaning it has one free electron. It dissolves many compounds made of calcium, magnesium, copper, iron, zinc and other minerals.

The great alkalizer. Sodium is a very alkaline-forming element. It is used to help maintain an alkaline medium for nutrient exchange in the blood and the interstitial fluid.

Sodium and the adrenals. Sodium is regulated primarily by the adrenal glands. High sodium is associated with excessive adrenal activity. Low hair tissue sodium is associated with adrenal weakness, fatigue and burnout.

Sodium, the electrical conductor. Sodium is one of finest conductors of electricity. The body is an electrochemical factory. Sodium represents one pole of the human “battery”. Sodium is outside of the cells while the other pole of the battery is potassium inside the cells. This can become complex. However, it can be summarized by stating that when the hair sodium/potassium ratio is normal or a little high, the electrical potential across the cell membranes are higher. When the ratio is low, an electrical discharge is occurring and the potential tends to be lower. This is why the hair sodium/potassium ratio is called the vitality ratio and so many illnesses are associated with a low sodium/potassium ratio. It can also help one understand why inflammation and an acute stress response are associated with an elevated sodium/potassium ratio.

Sodium, the great regulator. Sodium also regulates the pH to some degree, blood and other fluid viscosity, CO₂ transport, and the solubility of proteins and organic acids in the body. It influences stomach acid levels, blood pressure and even blood sugar through its effect on the adrenal glands. Its effects on cell membranes include the regulation of membrane permeability to a degree, sodium pump action, neuromuscular irritability and the speed and quality of nerve impulse conduction. Sodium also indirectly regulates parts of the brain, including the pituitary gland. It also directly and indirectly regulates thyroid, pancreas and other glandular activity.

Sodium and sweating. The body conserves sodium superbly. For example, if one sweats regularly, as occurs with sauna therapy, the sodium content of the sweat begins to decrease as the body acclimates to sweating. This is a survival mechanism that works well for those, for example, who do physical work and sweat often.

Sodium and high blood pressure. One of the problems in some cases of high blood pressure is too much sodium in the blood. This causes excessive water retention and higher blood volume that, in turn, increases the blood pressure. However, there are many other causes of high blood pressure discussed in Chapter 30. Common refined table salt is a poisonous junk food that should be avoided completely. A quality sea salt, such as Real Salt, often does not raise blood pressure and is helpful to remineralize the body. Reducing high blood pressure often

requires much more than salt restriction in order to reduce toxic metal accumulation in the arteries and especially in the kidneys.

Sodium and stomach acid. Sodium imbalance is related to stomach acid disturbances. Sodium chloride is required in the manufacture of hydrochloric acid in the parietal cells of the stomach lining. Dr. Paul Eck observed that when the sodium level is low in the hair tissue, hydrochloric acid is often low in the person's stomach. This helps explain widespread stomach acid deficiencies in the population, which can cause digestive problems. True fast oxidizers may have an opposite situation, with high tissue sodium levels, and too much stomach acid.

GERD and too much stomach acid in slow oxidizers. Gastric reflux disease, or GERD, is often not a problem of too much sodium or too much stomach acid. Eating wheat, or sometimes other grains such as rye, seems to be more of a problem. Eliminating these foods often helps with GERD. There can also be a *hiatal hernia*. This can often be resolved by stopping wheat or other grains, and reducing the hernia with one's fingers. Chapter 26 gives the basic procedure to reduce a hiatal hernia. Also avoid straining at the stool to prevent or correct a hiatal hernia.

Sodium as an addictive mineral. Sodium can cause a type of 'high' or elevated mood. This is related to aldosterone secretion and adrenal glandular activity. This can cause cravings for salt in some people and is one reason that salty food is served in restaurants and elsewhere.

SODIUM AND HAIR ANALYSIS. An ideal adult hair sodium level, according to Dr. Eck, is about 25 mg% or 250 parts per million. It tends to be higher in babies and small children. Women tend to have a lower value than men, in general, due to overall weaker adrenal glandular activity. The level can vary from 1 mg% to over 1200 mg%.

The adrenals and kidneys regulate the hair sodium level. The adrenal hormone aldosterone regulates the tissue sodium level in large part, along with the rennin-angiotensin mechanism of the kidneys. Other factors such as the kidney energy in Chinese terminology also regulates the sodium level, perhaps through the adrenal glands in some way. A low hair sodium level is associated with weak adrenal activity, slow oxidation and an exhaustion stage of stress. It indicates sodium loss through the kidneys and is usually affected little or not at all by eating salt, for example. Eating sea salt, however, will often make these individuals feel somewhat better as it replaces some of the sodium lost in the urine.

Elevated hair sodium. An elevated hair sodium level is a feature of fast oxidation and an alarm stage of stress. The cause is usually higher aldosterone secretion by the adrenal glands. This may be due to acute stress or to emotions such as anger or fright. Cadmium and other toxic metals in the kidneys, along with kidney infections, can also raise the hair tissue sodium level. The hair level of sodium can also increase due to *kidney stress* during the elimination of a toxic metal such as boron, or the elimination of a toxic chemical.

SODIUM SYNERGISTS AND ANTAGONISTS. Sodium is involved with every other mineral in the body. It can be both synergistic and antagonistic with most of them at one time or another. **Zinc** tends to lower sodium, while **copper** tends to raise sodium in relationship to potassium. **Potassium** always moves higher and lower with sodium in healthy people. However, sodium and potassium also antagonize each other electrically, for example, as explained above.

Calcium and magnesium are synergists in many biochemical reactions involving energy production and other body functions. However, in terms of the oxidation rate, they are sodium

antagonists. They are divalent elements while sodium is a monovalent element. When they decrease, sodium tends to increase in the hair tissue, and vice versa. **Phosphorus and other trace elements** are also closely related to sodium in many ways. They are synergists at some times and antagonists at others. Phosphorus is a synergist in pH regulation, for example.

Bicarbonate is also a synergist in carbon dioxide transport in the body because it forms NaHCO_3 (sodium bicarbonate) if adequate sodium is available. When sodium is low, carbon dioxide can build up in the tissues to a degree. This occurs in most slow oxidizers. One of Dr. George Watson's original ways to test the oxidation rate involved measuring the serum CO_2 level. **The toxic metals** are the only minerals that are almost exclusively sodium antagonists. Toxic metals have no place in the body, whereas sodium is one of its most essential minerals.

POTASSIUM (K)

Potassium is the other major monovalent element in the body, along with sodium. It is tied so closely with sodium that they form a pair. Potassium is mainly inside the cells, however, while sodium concentrates more in the blood, and interstitial fluid. Potassium has a single electrical charge. This makes it a good electrical conductor and tends to make it very water-soluble. It performs many essential functions ranging from regulating the heart to balancing the electrical potential of the body. Here are the main ones:

- *A potent solvent.* The monovalent elements are the body's solvents. Though less important than sodium, potassium also functions to dissolve many chemical compounds in the blood.
- *Association with cortisol levels.* Sodium is more associated with adrenalin and aldosterone, which are faster acting hormones. Potassium is more associated with cortisol and cortisone. These are slower-acting or later-stage stress hormones. The correlation on hair mineral tests is only a general one, however, as many factors can influence the hair levels.
- *Thyroid gland regulation.* Potassium sensitizes the cells to thyroid hormone, according to Dr. Eck's research. In addition, when sodium and potassium rise, tissue calcium tends to decrease. This causes the cells to become more permeable to thyroid hormone, in particular, and to other hormones such as insulin, as well.
- *Cancer fighter.* Max Gerson, MD pioneered a high potassium diet for cancer and other degenerative diseases. His rationale was that potassium leaking out of the cells causes depolarization of the cells and disease. His answer was to replenish potassium in the diet. Today, however, that diet, usually composed of many glasses of carrot and apple juice, appears to be less effective because the cancer problem is not so much about potassium as it is about toxic metals and toxic chemicals in the body that must be removed to restore health.

Dr. Gerson knew about toxic metals, also, but the situation is much worse today. Chapter 35 offers many more details about cancer.

- *Fluid balance and osmotic regulation.* Potassium does this along with sodium, calcium, magnesium and phosphorus.
- *Nerve conduction, especially in the heart.* Those who eat improperly with not enough vegetables, in particular, may feel weak or even experience palpitations, skipped beats, arrhythmias and rarely heart attacks from potassium depletion. This can be much worse, for example, if they do not replenish their minerals and they use saunas or hot tubs that induce intense sweating. This is why I recommend kelp and sea salt if one uses a sauna.

- *Regulation of blood viscosity, serum and cellular acidity, and CO₂ transport in the red blood cells.*
- *Regulation of cell membrane potential, cell permeability, sodium pump action, muscle contraction and relaxation, and nerve impulse conduction.* These are all in conjunction with sodium and other macrominerals in most cases.

POTASSIUM AND HAIR ANALYSIS. An ideal hair potassium level is about 10 mg% or 100 parts per million. Please note that hair potassium and sodium levels are extremely erratic and inaccurate if the hair has been washed at the laboratory.

Adrenal hormone levels are reflected in the hair potassium level. Low hair potassium tends to correspond to reduced adrenal and thyroid glandular activity. Elevated hair potassium tends to correspond to increased adrenal glandular activity and, at times, high cortisol in particular. However, the presence of toxic metals and other factors such as toxic metals in the kidneys, for example, can also either elevate or depress the hair potassium level.

Sympathetic dominance. A hair potassium level of 4 mg% or less is a pattern called *sympathetic dominance*. A secondary indicator is a high Na/K ratio. This pattern is explained in detail in Chapters 22 and 43. It indicates a person who “pushes” himself, either physically with excessive activities, or mentally with worry or fear. As a result, the person remains in a fight-or-flight mode of living too much, even when the body is very tired. One therapist phrased it as “acting as though you are being chased by a tiger all of the time”. Sympathetic dominance is mainly a lifestyle pattern. This means it is often more of a habit pattern, rather than a strictly physical illness or condition. However, the presence of excess copper, and excesses of toxic metals, along with possible zinc deficiency, can reinforce and hold one in the pattern.

Potassium affected by water softeners. In a few cases, showering and perhaps drinking water softened with potassium may elevate hair potassium levels considerably. To avoid this distortion, before sampling the hair, wash and rinse the hair thoroughly with distilled or reverse osmosis water two times if you regularly bath in tap or well water softened with potassium.

POTASSIUM SYNERGISTS. Potassium works closely with **sodium, calcium** and **magnesium** to regulate metabolism. Other synergists include **most vitamins**. These assist kidney activity and may therefore help regulate the potassium level in the blood and the tissues. **Most of the important trace minerals** are also synergists because they all regulate potassium levels to a degree. Dr. Paul Eck emphasized that **zinc** appears to raise potassium in the mineral system of the body. **Phosphorus**, along with zinc, are synergists in protein synthesis.

POTASSIUM ANTAGONISTS. **Calcium and magnesium** tend to rise in the hair as potassium falls. **Sodium** is pumped out of the cells and potassium must be pumped in to maintain the electrical balance of the cells. This antagonism with sodium is particularly important. **Copper**, in the mineral balancing system, lowers potassium to some degree. In fact, a low hair potassium level is an indicator for hidden copper toxicity. **Vitamin D** can raise the calcium level, which tends to lower potassium, as can too much **vitamin A**, in some people. **All the toxic metals**, once again, are antagonistic to all of the vital minerals in the body.

PHOSPHORUS (P)

Phosphorus may be called the **excitatory** mineral because of its role in the high energy

fuel system of the body. It is the only non-radioactive element that is not stable when in an atomic or singular form. Some readers may recall a high school science experiment demonstrating this fact. The teacher gently lifts a piece of pure phosphorus out of a jar filled with water. In less than a minute, it bursts into flame spontaneously. As a result of its instability in atomic form, all phosphorus in the body exists as phosphates (PO₄).

SOURCES OF PHOSPHORUS. Phosphorus is found in all protein foods. Cows milk is very high in phosphorus. Raw grains are high in phytates, which are phosphorus compounds. Soda pop often contains phosphoric acid to cut the sweetness. This can be absorbed to some degree. However, it is very acidic and can erode the teeth, for example.

FUNCTIONS OF PHOSPHORUS. About 85% is in the bone structure, where it interacts with calcium to form the hard part of the bones. The rest has several major functions, including:

- *Energy production.* This is probably its most important role. ATP or adenosine triphosphate is the high-energy molecule that is used as the “refined fuel” for every purpose in the body. It is somewhat like refined gasoline in today’s society.
- *Growth and development.* Phosphates are extremely important for growth of the body. For example, mother’s milk is rather low in phosphorus compared to cows milk. Cows, of course, grow much faster and larger than human beings. This is one of the problems with drinking cows milk. Milk from smaller animals such as goats and sheep tends to be more like human milk in their phosphorus content.
- *The nervous system.* The nervous system is extremely dependent on phosphorus compounds. These assist the production of the myelin sheath. Also, the brain uses so much energy that high-energy phosphorus compounds are critical for thinking and higher development of the human being. This is one of the reasons vegetarians may be prone to fatigue, anxiety and depression more than meat eaters. Meat is far higher in bioavailable phosphorus compounds.

Also, some vegetarian foods, especially raw grains, are high in another type of phosphorus compounds called *phytates* that bind vital minerals and remove them from the body. This is a problem with eating raw grains in such products as granola and unleavened bread. Certain ancient methods of food preparation, such as adding yeast to bread dough and adding lime to corn, were developed to reduce the high phytate content of grain foods. For this reason, some people deplete vital minerals when they try to eat differently, substituting raw or just soaked grains for baked bread, for example.

- *Cell membrane function.* Phospholipids are another type of phosphorus compounds that are absolutely essential for health. For example, omega-3 and other fatty acids are incorporated into phosphorus compounds to form cell membrane structures needed for the transfer of nutrients into the cells and to move waste products out of the cells.
- *All protein synthesis.* Phosphorus is involved in DNA and RNA synthesis. This, in turn, is needed to make all body proteins, enzymes, hormones and millions of other chemicals.
- *Bone formation, buffering the pH of the blood and maintaining the osmotic balance of the body fluids.* All of these involve phosphorus compounds. While they are all critical functions, they may be less important from an evolutionary standpoint than the ones above.

PHOSPHORUS AND HAIR ANALYSIS. Dr. Eck found that hair phosphorus mainly has to do with *protein synthesis*. In fact, it is a critical hair analysis indicator. Without sufficient protein synthesis, healing is definitely impaired. Thus, correcting the phosphorus level on a hair analysis is of primary importance.

An important vitality indicator. I also use phosphorus as a *vitality indicator*, although Dr. Eck did not. An ideal value of hair phosphorus is between about 15 and 18 mg% or 150-180 parts per million. The hair must not be washed at the laboratory for accurate readings. **Pubic hair** often gives much higher and more variable phosphorus readings. For this reason, head hair is far preferable. While most laboratories allow practitioners to submit pubic hair samples, I do not allow clients to use them, unless there are no alternatives.

High hair phosphorus. A phosphorus level greater than about 18 or 19 mg% indicates a milder form of protein breakdown or catabolism. However, it is usually not significant and corrects itself with development programs within a few months in most cases.

Low hair phosphorus. A level less than about 15 mg% indicates some degree of tissue catabolism or impaired protein synthesis. A level below 11 mg% indicates serious protein synthesis problems and, I believe, significantly lowered vitality. Causes for this include:

- *Not enough dietary protein, or too much of a lower quality protein such as tofu or beans.*
- *Incorrect eating habits.* These include fast-paced lifestyles, eating in the car and eating standing up or when upset.
- *Eating a less well utilized, incomplete, poorly absorbed, overcooked or spoiled protein food.* For example, overcooked meat or eggs are harder to digest. Most protein powders such as soy powders or others may also be poorly utilized in some people.
- *Problems in the digestive tract or elsewhere that interfere with the absorption or utilization of amino acids.* A common one is a chronic candida albicans infection, for example. Others might be leaky gut syndrome, an inflamed intestinal tract or an irritated bowel due to a parasitic infection.
- *Deficiencies of many minerals required for DNA and RNA synthesis such as zinc and magnesium, among others.*
- *The presence of toxic metals or high levels of biounavailable copper or other minerals that impair protein synthesis.* For example, an excess of biounavailable copper or other toxic metals can inflict oxidant and other types of damage on proteins in the body.

Phosphorus and zinc. A low hair phosphorus level frequently indicates a need for zinc or excess copper in the body, regardless of the hair zinc or copper levels. This was another of Dr. Eck's brilliant insights about the body and about hair mineral analysis. Zinc is required for several important enzymes involved in protein synthesis such as RNA transferase. Without adequate available zinc, protein synthesis is severely impaired.

Zinc spots. Zinc is required for protein synthesis. If zinc becomes deficient, the body prioritizes its zinc reserves and can reduce the synthesis less essential proteins such as the skin, hair and nails. This is one cause for baldness, skin diseases and "zinc spots", small whitish spots on the fingernails and toenails. One can even calculate when stress or another condition reduced the available zinc by the location of the spots relative to the distal end of the fingernails. The nails grow about one-fourth of an inch per month. Impaired protein synthesis due to low zinc or high copper is also why some women develop stretch marks, baldness at times, spider veins, varicose veins, digestive problems and many, many other telltale signs of low zinc. These

indicate stress and copper imbalance, at the very least, and may indicate other problems with protein synthesis.

A possible celebration pattern. A sudden increase in hair phosphorus on a retest when a person has followed a development program is often positive, even if the level rises to 25 or 30. It may reflect a breaking down old, diseased tissue. The level usually returns to a more normal level on the next retest.

PHOSPHORUS SYNERGISTS. These include most of the trace minerals and hundreds of other nutrients that are involved in energy production, cell membrane formation, protein synthesis, the nervous system and fluid balance. **Calcium** is absorbed with phosphorus and is a synergist in bone formation. **Magnesium** is a synergist in energy production and protein synthesis. **Vitamin D** assists phosphorus absorption, along with calcium absorption and utilization. **B-complex vitamins** require phosphorus for their activity, in many cases.

PHOSPHORUS ANTAGONISTS. These are many and include **cortisol** and **steroid-containing drugs** such as nasal sprays, pain remedies, cortisone shots and other steroid-containing products. In part, the devastating effects of these common remedies may be their detrimental effect on phosphorus metabolism in the body. This can help explain common side effects such as bone loss, thinning of the skin, exhaustion, adrenal damage and others.

Sodium and **potassium** are both synergistic and antagonistic with phosphorus. They are needed to absorb phosphates in the intestines. However, they also lower calcium and phosphorus in the blood. For example, children have more sodium and potassium in the hair and other tissues than adults. For this reason, children often have lower levels of phosphates in their blood and tissues than adults. However, their hair phosphorus level should be about the same as adults at about 15-18 mg%.

SULFUR (S)

Sulfur is a **fiery** mineral. It is found in gunpowder, for example. It burns very fast and hot. Historically, it is also associated with a fiery personality. Sulfur is one of the more abundant elements in the human body. It is found in most proteins in the sulfur-containing amino acids, along with **phosphorus** and **nitrogen**. These three elements form a triad of important elements needed as building blocks or structural components of all animal tissues. Sulfur, however, is not one of the important regulators of the body, so it is less important in development. Some laboratories measure its level in the hair. The level is always quite high in comparison with other minerals.

15. THE TRACE MINERALS – THE TWINS, ZINC AND COPPER

Terence, age 73, still has osteoarthritis, muscle cramps, sweet cravings, irritability before meals, arteriosclerosis, high cholesterol and triglycerides, allergies, glaucoma, macular degeneration, intestinal gas, easy bruising and some prostate enlargement. When he first consulted me, his breakfast was a mixture of pumpkin seeds, cranberries, walnuts and one-fourth of a cup of flaxseeds. For lunch, he was eating blueberries, cherries or an apple. Dinner was fish or a tofu burger with a vegetable, red wine and cheese-flavored almonds for dessert.

*This diet is better than most, but low in cooked vegetables and lacking in animal quality proteins. It also includes foods I find are harmful such as a too much fish, dried fruit and lots of tofu. These are fine once in a while, but not as staples. Also, red wine is high in iron and most men already have too much iron. In addition, alcohol can totally stop mental or spiritual development by poisoning certain brain centers. Terence's first hair analysis revealed a very slow oxidation rate with a calcium level of 220 mg%, or a **calcium shell**. Copper was elevated at 5.6 mg% and phosphorus was poor at 10 mg%. Mercury was also high at 0.05 mg%, perhaps from eating fish. Aluminum was extremely elevated at 1.38 mg% (ideal is about 0.1 mg%).*

***A vegetarian hair analysis.** Slow oxidation, elevated copper, low phosphorus and perhaps low zinc Dr. Eck called a 'vegetarian' hair test because this pattern is so common among vegetarians who are tired, consume too much copper and not enough zinc and, as a result, have impaired protein synthesis. Terence started to feel better almost immediately upon changing his diet and stopping a large number of supplements recommended by the Life Extension Foundation and other groups. All were good quality, but we find most are not needed and, in fact, slow or stop deeper healing because they were not exactly what he needed at the time. He also built a sauna and uses it regularly. This has helped him immensely. Terence's second hair analysis showed a much faster oxidation rate, half the copper level and less mercury. Phosphorus remained at 10 mg%, however.*

After two years, Terence slipped off the program and went back to his old eating and food supplement habits. A retest he did three years after the first one showed patterns similar to the first test, indicating most likely a worsening of his health. The point of this case is that even though Terence was willing to follow directions, he came to doubt the somewhat unusual nature of development science and decided to follow "standard" holistic nutritional recommendations, instead, including a largely vegetarian regimen and piles of nutritional supplements. Having tried many other nutritional systems, I keep coming back to development because it is much safer and more effective than the others. However, it is somewhat unusual and not in the mainstream of nutritional science or holistic medicine at this time.

THE TRACE MINERALS

The trace minerals are a group of about 20 elements needed in human and animal bodies in very small quantities. They are often toxic in higher amounts. As a group, they function almost exclusively as components or co-factors for millions of enzymes, many of which have yet to be identified. This differs from the macrominerals, which are needed more for pH, fluid and osmotic regulation. This section of the book on trace minerals is divided into three chapters:

- **Chapter 15** (this one) discusses what I have called the **twins** – zinc and copper.
- **Chapter 16** discusses **the friends or amigos** - manganese, iron, chromium and selenium. Aluminum is one of the amigos also, but is a toxic metal that is discussed in Chapter 18.
- **Chapter 17** discusses **other trace elements** – iodine, lithium, boron and molybdenum.

Additional trace minerals include silicon, germanium, rubidium, vanadium, tin, zirconium and several others. However, these are less important at this time for development science, so they have been omitted to save space.

THE TWINS - ZINC AND COPPER

Zinc and copper are called the twins because they have a very close and interesting relationship to each other in the body. They are synergists in that they are both involved in:

- *The stress response and regulating the levels of the macrominerals.*
- *Sexual and reproductive activity.*
- *The emotions and brain activity.* In particular, both are involved in what I have called Level Two and Level Three brain disorders. These are explained in Chapters 38 and 39.
- *Maintenance of connective tissue and the immune response.*
- *Both are transition elements in the periodic table.* This has special significance as well.

On the other hand, they are also important antagonistic elements in the following ways:

- *The stress response.* Zinc tends to raise potassium and lower sodium on a hair mineral analysis. Copper tends to raise sodium and lower potassium.
- *Brain activity.* Zinc can act as a calming neurotransmitter and is one of the ‘sedative’ minerals, with calcium and magnesium. In contrast, copper is an excitatory mineral that stimulates the production of the biogenic amines. These are stimulatory neurotransmitters such as epinephrine or adrenalin, norepinephrine or noradrenaline, and dopamine.
- *Emotions.* Zinc appears to activate the frontal lobes or neocortex of the brain, also called the ‘new brain’. Copper inhibits the activity of zinc, and thus appears to enhance the activity of the diencephalon. This part of our brain is also called the old brain, the ‘animal brain’ or the ‘emotional’ brain.
- *Sex and reproduction.* Zinc is more associated with the male reproductive tract, while copper is more associated with women’s sexual and reproductive activity.
- *Immune response.* Zinc is involved with fighting infections. While copper is important for this also, excessive copper is definitely associated with a tendency for more infections.
- *Zinc is a powerful anti-oxidant nutrient, while copper can be an oxidant nutrient.*

EVERYONE HAS ZINC AND COPPER IMBALANCE TODAY

This was an insight of Dr. Eck's. The reasons for widespread imbalances include:

- *Most parents-to-be are deficient in zinc and have excess copper.* This is easily passed on to their children in utero. The children's imbalance is *congenital*, or present at birth, but not *genetic* or inherited. This difference is crucial and not understood well today.
- *Stress.* This depletes zinc and copper. Lowering these minerals helps raise the sodium and potassium levels, preparing the body for the fight-or-flight reaction.
- *Chronic, ongoing stress depletes the adrenals and causes even more copper accumulation.*
- *Low zinc in the soil, and in hybrid crops today, causes low zinc in the food supply.*
- *Food refining tends to remove more zinc than copper, such as the refining of flour and sugar.*
- *Impaired digestion.* This is due to many factors such as chronic intestinal infections with candida albicans, unhealthy eating habits and other reasons.
- *More vegetarian-oriented diets.* These further reduce zinc intake and increase copper intake.
- *Some people eat a lot of high-copper foods such as dark chocolate, avocados, nuts and tea.*
- *Copper in birth control devices.* Copper exposure from a copper-7 IUD, and the effects of birth control pills, patches and the hormone-containing IUD, can drastically increase copper and reduce zinc levels in the bodies of some women.

COPPER

A friend's 76-year-old mother was under the care of a well-known holistic cardiologist for severe heart valve disease. Medical drugs were not helping, so she was trying a natural approach with various vitamins and minerals. However, her heart valve was getting worse by the day and she had been scheduled for a valve replacement operation in two weeks.

I asked my friend to send me a hair sample from his mother immediately. The result showed fast oxidation with a low sodium/potassium ratio. This is a common cardiovascular disease pattern and responds to copper alone in many instances. Her hair copper level was well within the normal range, but hair copper levels are often unreliable indicators for the need for copper. Her cardiologist had told her to take B-complex vitamins, vitamin C, coenzyme Q-10 and potassium. Not only was she not taking copper, but all of these excellent supplements can lower tissue copper. Her cardiologist was making her mineral balance and her health condition decidedly worse with these supplements, in my view.

By telephone, I suggested immediately stopping all her supplements, and instead, taking 3 mg of chelated copper 3 times daily, with nothing else. She did this and within a week she was so much stronger that surgery was postponed. By then, I had sent her a more complete development program, which also included a digestive enzyme, calcium and magnesium, and a metabolic pack for fast oxidizers with a low sodium/potassium ratio. She continued to become stronger on this regimen and never required heart valve replacement surgery. She visited me several years later and appeared to be in excellent health. This case illustrates:

- *The simplicity of development therapy in some cases.*
- *The dramatic effects of a simple chelated copper supplement, when taken in the right amount.*

- *A serious problem with nutritional therapy when done without using a properly performed and correctly interpreted hair analysis.* My friend's mother had had many other medical as well as holistic types of testing done in her travels from doctor to doctor.
- *While subtle, the case also shows the importance of not washing the hair at the laboratory. When washed, the macromineral readings are skewed in many cases and much less accurate.*

FUNCTIONS OF COPPER. Copper is a soft, reddish, malleable metal that is an excellent conductor of electricity. Among its many functions in the body are:

- *The bones and connective tissue.* Copper is required to fix calcium in the bones and to build and repair all connective tissue. This includes the tendons, ligaments, skin, hair, nails, arteries, veins and other soft tissues. Imbalances contribute to most skeletal, cardiovascular, muscular and other common conditions such as bone loss, scoliosis, kyphosis, fibromyalgia, and most conditions of the skin, hair and nails.
- *Energy production in the cells.* Copper, along with bioavailable iron, is needed in the final steps of the Krebs energy cycle called the *electron transport system*. This is where most cellular energy is produced in each cell.
- *The immune response.* Copper favors aerobic or oxygen-based respiration in the cells. Yeasts, fungal organisms and bacteria favor an anaerobic or glucose-based metabolism. When copper is deficient or biologically unavailable, infections often develop or worsen in the body, particularly fungal ones. Farmers make use of this principle and spray copper sulfate on many food crops to kill various fungi and other bugs. Copper is also used to disinfect swimming pools, hot tubs and municipal water supplies. People who have stubborn infections, especially yeast or candida infections, usually have a copper imbalance. Correct this and the yeast vanishes, often quickly.
- *The glandular system, particularly the thyroid and adrenal glands.* The thyroid gland is extremely sensitive to copper. It may build up in the thyroid gland, contributing to most types of thyroid difficulties.
- *Reproductive system.* Copper is intimately related to estrogen metabolism, and is required for women's fertility and to maintain pregnancy. Copper and estrogen tend to move up and down together in the body. Imbalance can contribute to every conceivable female organ difficulty such as premenstrual syndrome, ovarian cysts, uterine fibroid tumors, infertility, miscarriages, female organ cancers, sexual dysfunctions and others.
- *Nervous system.* Copper stimulates the production of the neurotransmitters epinephrine, norepinephrine and dopamine. It is also required for monoamine oxidase, an enzyme related to serotonin production. As a result, copper is involved with several aspects of the central nervous system. Copper imbalances are strongly associated with most psychological, emotional and often neurological conditions. These include memory loss, especially in young people, depression, anxiety, bipolar disorder, schizophrenia and many others.
- *Melanin production.* Copper is required for tyrosinase, an enzyme that converts tyrosine into melanin, the pigment that gives our skin and hair their color. Albinos, for example, may have a copper imbalance, as do those with other pigmentation problems such as vitiligo, a condition in which patches of skin lose their color. Dr. Eck felt that graying of hair may also have to do with copper imbalance. Hair loss is often related to copper imbalance as well.

- *Growth and development.* A severe copper deficiency seen in Menke's kinky hair syndrome shows how important copper is for growth and development. This rare condition of impaired copper absorption is fatal within the first year of life unless copper supplements are given.

SOURCES OF COPPER. These include:

- *Congenital copper imbalance.* Most children today are born with copper imbalances, primarily due to imbalances in their mothers.
- *Zinc deficiency from any cause.* This tends to cause a copper overload. Copper replaces zinc in some enzymes in the body. Causes for zinc deficiency include stress from any cause, low soil zinc, the use of hybrid crops that are lower in zinc, food refining and processing, impaired digestion, babies are born low in zinc, spraying vegetables with EDTA or other chelating agents to preserve the color, and possibly others.
- *Vegetarian diets.* Vegetarian foods are lower in zinc, as a rule, and may be higher in copper.
- *Eating high-copper foods.* These include dark chocolate, some teas, nuts, avocados, yeast, all soy products, dried fruits, mushrooms, shellfish and organ meats.
- *Stress and impaired adrenal gland activity.* Dr. Eck felt that adrenal insufficiency is an important cause for copper imbalance because adrenal weakness affects copper transport proteins such as ceruloplasmin and perhaps metallothionein.
- *Medical causes.* Copper in intra-uterine birth control devices can raise the tissue copper level. Hormone therapy, particularly the birth control pill, the patch or the birth control IUD with hormones can raise tissue copper significantly in some women. Steroid hormones such as prednisone and others can also raise tissue copper levels and deplete zinc. Other medical drugs may impair the liver's ability to remove copper.
- *Vitamin pills.* Many multivitamins contain too much copper. Prenatal vitamins are often the worst, with 2 to 4 mg of copper in each tablet.
- *Other.* Sources such as drinking water that passes through copper pipes, copper jewelry worn on the skin, copper added to tap water, fungicide residues on food, copper in swimming pools, dental materials and occupational exposures are often less important, but not always.

Prenatal vitamin problems – two cases. *Mrs. Robinson had given birth to a healthy boy six months ago. Her doctor told her to continue her prenatal vitamin that had 3 mg of copper per tablet. She called because both she and her baby were experiencing hair loss. Even without a hair analysis, I guessed the prenatal vitamin was to blame. Stopping it caused the hair loss problem to abate rapidly.*

Prenatal vitamin problems #2. *A young woman consulted me for post-partum depression. She casually mentioned she was continuing to take her prenatal vitamin that contained several milligrams of copper. I suggested stopping the prenatal vitamin at once.*

Two weeks later, she returned for a follow up visit. Her depression had gone away as soon as she had stopped the prenatal vitamin. However, another problem also went away. Apparently the prenatal vitamin with copper had made her so anxious she could not handle her baby when he cried. She had been beating the baby to get him to stop crying. Fortunately, since stopping the prenatal vitamin the doctor gave her, all was now better. Her hair test revealed copper toxicity, which was no doubt aggravated by the prenatal vitamin tablet.

COPPER IMBALANCE - THREE TYPES. One reason copper is complex to learn about is that it can be out of balance in several ways in the human body. These include:

- *A simple deficiency.* This is the case in fast oxidizers. Always supplement copper in fast oxidizers. Fast oxidizers with a low sodium/potassium ratio need even more copper.
- *A simple overload or excess.* Copper excess is present in most slow oxidizers. Perhaps this has to do with impaired adrenal activity, faulty elimination of it and/or a zinc deficiency.
- *Biological unavailability due to improper valence or perhaps other factors.* Copper, like iron and most metals, can have several valences. The unusable form may well be an oxide. Copper may also become biounavailable for other reasons, such as deficiency of a transport factor such as ceruloplasmin or perhaps metallothionein. Dr. Eck believed this is the main reason copper becomes biounavailable as the adrenal glands weaken. Adrenal activity, he learned, is needed for ceruloplasmin synthesis in the liver.

SYMPTOMS OF COPPER IMBALANCE

DEFICIENCY SYMPTOMS. These have to do with damage to connective tissue and with fast oxidation. They include aneurysms, heart valve problems, venous problems, artery wall weakness, low or high blood pressure, rashes, brittle nails, hair loss, stretch marks, scarring, and cancer, for example. Fast oxidizer symptoms may include anxiety, irritability, nervousness, muscle cramps and muscle tightness. Others include aggressive behavior, autism, ADD, ADHD and others.

ELEVATED COPPER. A simple excess of copper will produce different symptoms depending upon where the copper is lodged in the body. It tends to accumulate first in the liver, then the brain and female reproductive organs, and perhaps the testis as well. After that, it can accumulate in the joints and elsewhere. Excess copper is usually in a biounavailable form, where it acts as an inflammatory agent and causes severe oxidant damage in some cases as well. Symptoms may include inflammation, pain, menstrual problems in young women, testicular pain, cancers, allergies, brain fog, emotional and mental illnesses, thyroid and liver disorders and many others.

BIUNAVAILABLE COPPER SYMPTOMS. Biounavailable copper tends to produce a combination of symptoms of deficiency mixed with symptoms of overload.

NERVOUS SYSTEM SYMPTOMS. Dr. Eck called copper the ‘emotional’ or ‘love mineral’ because it has such a profound impact upon the central nervous system. The psychiatric implications of copper imbalance are tremendous. Most psychological and psychiatric conditions improve when copper is brought into a better balance in the body.

The overall effect of excess and biounavailable copper appears to be to increase most emotional activity in a human being, while zinc tends to balance the emotions. Dr. Eck read that copper stimulates the diencephalon, also called the ‘old’ or ‘animal brain’. This can enhance a tendency for most emotional conditions, from depression and anxieties to autism, ADD, ADHD, brain fog, insomnia, epilepsy, fears, phobias, loss of concentration, aggression, violence, obsessive-compulsive behavior, bipolar tendencies, Tourette’s syndrome and some schizophrenias. Other conditions discussed in the mental health section of this text are also related to copper imbalance. These are so common and respond so well to development science it is a wonder more doctors are not aware of the importance of copper in mental illness.

Copper and world violence. Violence around the world is more common in nations with the worst zinc and copper imbalance. For example, in the Middle East, the primary staple food is wheat. Today's wheat is higher in copper and also pro-inflammatory due to its glutamine content and other factors. Inflammation tends to use up zinc in the body, since zinc, along with calcium and magnesium, are sedative or anti-inflammatory minerals. Today's wheat is also low in zinc due to hybridization, low soil zinc and refining of whole grains to make white flour. America and parts of Europe and Asia also use wheat. However, people here eat more meat and fish, foods that are rich in zinc.

The Walsh studies of prisoners and copper. Chapter 38 discusses studies of criminals that indicate that many have copper imbalances. Young women also commit more violence just before the menstrual period, a time of the month when the tissue copper level rises.

Copper personality types. Dr. Eck identified personality qualities associated with each of the major minerals. There appear to exist several high copper personality types. These are discussed in Chapter 43. Positive copper personality traits include a humble, warm, caring, sensitive nature, often with an artistic and creative orientation. Such individuals may excel as writers, musicians, artists, engineers, psychologists and intuitives of various kinds. Often high-copper people are also young looking and can be child-like in their mannerisms. Many traditionally feminine traits are associated with copper such as softness, gentleness and intuitiveness.

When the personality is not fully integrated or the copper becomes too high, negative traits appear that may include spaciness, racing thoughts, living in a dream world, gullibility and naiveté. Others are childishness, excessive emotions, sentimentality, a tendency to depression, fearfulness, hidden anger and resentments, phobias, psychosis and violence.

The copper personality type tends to accumulate copper easily. The mineral may function as a psychological defense mechanism. It causes one to detach slightly from reality. This provides relief from stress for these usually very sensitive individuals. It can work well for a while, providing the copper does not become too high. Very high copper can cause panic attacks, nervous breakdowns or psychotic breaks with reality. As a result, artists, inventors and other high-copper types often "live on the edge", in part due to their high copper level. Schizophrenias related to elevated copper often respond excellently to development programs.

REPRODUCTIVE SYSTEM SYMPTOMS. Women are copper dominant, while men are zinc dominant. This means copper is more important for women, while zinc is somewhat more important for men. Adult women suffer much more from copper imbalance than men.

Premenstrual syndrome or PMS. Symptoms often mimic the symptoms of copper imbalance. This occurs because estrogen levels and copper levels correlate well, and both increase before the menstrual period. This can be why taking copper antagonists a week before the period such as zinc and vitamin B6 often reduces PMS symptoms. At times, the cause of PMS is more complex. Bioavailable copper may cause a different set of PMS symptoms than a simple high copper. Chapter 31 discusses PMS in more detail.

Other copper-related female symptoms include *amenorrhea, dysmenorrhea, fibroid tumors, ovarian cysts, pelvic inflammatory disease, fibrocystic breast disease, endometriosis, polycystic ovaries* and others.

Miscarriages, infertility and low libido. Copper is required to become pregnant and to maintain a pregnancy. Studies indicate that women with low estrogen and often low copper have more miscarriages. Correcting the copper balance can help female fertility and avoid miscarriages.

Sexual desire. Copper imbalance may reduce libido in both men and women due to:

- *Low energy levels.* This can be due to a slower oxidation rate that leads to less interest in sex.
- *Tissue numbness or insensitivity often occurs when the tissue calcium and magnesium rise high.* This may be related to an excessively high copper level, which is associated with the deposition of calcium in the body tissues. This may reduce sexual excitement, that, in turn, can cause less interest in sex.
- *Depression and negativity.* These can be side effects of low energy or high copper and may contribute to a reduced sex drive.
- *Estrogen imbalance may interfere with testosterone levels.* This can affect the sex drive in both men and women.
- *Pain on intercourse or vaginal dryness.* These may also be related to copper imbalance.

Excessive sexual desire and sexual dysfunctions in women. Another curious effect of copper excess in women can be excessive sexual interest. This has to do with excessive estrogen levels and liver toxicity in some women that probably increases testosterone levels.

Birth control pills and copper IUDs (intra-uterine devices for birth control). These two birth control methods definitely affect copper metabolism in the body. While some women can handle them, others experience depression, anxiety, personality changes and more serious side effects from them. Problems may take years to develop. This aspect of women's sexual revolution has probably caused more disasters in women's health than any other. Cancers and heart disease have increased drastically, in part due to these devices and drugs. Even if a woman stops the birth control pill after a number of years, her risk of cancer remains higher for the rest of her life.

Estrogen dominance. Higher-copper women are often diagnosed as *estrogen dominant*. Medically, this means they have more estrogen in their bodies, proportionately, than they have progesterone. However, from my perspective, they are usually just copper toxic. This does, indeed, increase estrogen in some cases. In others, the problem is impaired detoxification of estrogen by the liver due to toxicity of the liver with copper and other toxins.

Estrogen dominance usually resolves easily using development, without a need for hormone therapies. Hormones are supposed to be made in the body. Administering them orally or any other way tends to worsen the balance of the body chemistry. In this sense, both synthetic and natural or bio-identical hormones are drugs, no matter what anyone says to the contrary.

Copper and body shape. Higher copper women and men tend to have more fatty and often watery body tissues due to more estrogens and perhaps a higher tissue sodium level that causes some water retention. Men and women with low or bio-unavailable copper tend to be lower in estrogens and have a more linear body shape and often less watery tissues as well. However, copper is certainly not the only factor affecting hormones and body shapes. Some pesticides, for example, mimic the effects of estrogen and can affect the hormone balance.

Male sexual imbalances. Men should be zinc dominant. This means their copper levels should be somewhat lower than in women's bodies, though this is not reflected on their hair tests because copper does not primarily accumulate in the hair tissue. Among men, symptoms of copper toxicity include prostate enlargement, prostate infections and perhaps some prostate cancer. Others include ED or erectile dysfunction, testicular pain and testicular cancer in some cases. As copper is released from the testicles on a development program, men may experience temporary, sharp pain in the testicles for a few hours to a day or two.

Secondary sex characteristics and copper. Secondary sex characteristics are those aspects of sexuality that are more mental and emotional than they are physical. For example, attitudes, likes and dislikes of men and women, and other qualities we associate with men versus women are influenced by hormonal factors and at times, by copper. Dr. Eck noticed, for example, that homosexuality was more common among men with very high hair tissue copper levels.

CONNECTIVE TISSUE SYMPTOMS. Copper is required for collagen formation and for keratin, the material used to make *hair, skin and nails*. Copper, along with sulfur, is important for the disulfide bonds that give connective tissue its qualities of elasticity and strength. As a result, copper deficiency or bioavailability are associated with all *collagen and connective tissue conditions including loose ligaments, tendonitis, bursitis and many others*. Other serious ones include *aneurysms and heart valvular disease*.

Other disorders include *venous stasis, varicose veins, stretch marks, capillary fragility, easy bruising, bleeding problems*, and virtually any condition involving the hair, skin and nails. These include *alopecia or hair loss, dandruff or other fungal infections of the scalp, dermatitis, eczema, scarring such as keloid scarring, vitiligo or loss of skin color*, and others.

High copper and vitamin C deficiency. Vitamin C and copper are antagonists. Therefore, excessive copper can cause all the symptoms of low vitamin C. These include connective tissue disorders such as bleeding gums and others such as impaired healing and a tendency for infections.

Bone, joint, and skeletal problems. Other common conditions that are often related to copper include *osteoporosis and arthritis*. These often respond well to balancing the copper and zinc in the body. Others include *scoliosis* (lateral bending of the spine), *kyphosis* (hunch back) and most other back problems such as *slipped discs and degenerative disc disease*.

APPETITE AND EATING DISORDERS. Copper-toxic individuals may be drawn to sweets or salty foods due to adrenal insufficiency. Ingesting sea salt is often beneficial for these people. Avoid common table salt, however, as it is very deficient in trace elements. Sweets, including fruit juices, provide a temporary lift for many copper-toxic individuals. However, they worsen the underlying copper imbalance for a number of reasons. Sugars are deficient in zinc and tend to make zinc deficiency worse. Sweets also stimulate the adrenal glands, which eventually depletes them even more. Sugar has many other negative effects on metabolism as well.

Anorexia. Excessive copper and/or low zinc can interfere with normal appetite, in part by interfering with the senses of taste and smell to some degree. Teens are at greater risk for copper imbalances because they are often under a lot of stress, which depletes zinc even faster. Also, their diets are often of poor quality and too low in zinc-rich meats, for example. Instead, they eat a lot of carbohydrates such as pizza that actually interfere with zinc uptake in the intestines. This combination can be lethal for some teenage girls, in particular.

Vegetarianism. Vegetarian proteins are higher in copper and lower in zinc, so they tend to worsen copper toxicity. Fast oxidizers fare poorly on these diets, even though fast oxidizers require more copper. Fast oxidizers also need much more fats and oils, which tend to be low in these diets.

Obligatory vegetarians. Dr. Eck coined this term to describe people whose energy and digestion have declined so much they cannot digest meats well anymore. As a result, they gravitate toward vegetarian diets, thinking they are better for them. This occurs often today, especially among women and some teenagers who tend to be very slow oxidizers. Meat feels 'heavy' in their stomachs, especially if it is rich in fat such as steak or lamb.

Is vegetarianism more spiritual? Many people, including the author many years ago, felt they were becoming more “spiritual” by following a vegan diet. However, it was really destroying my health by causing copper toxicity and other nutrient deficiencies. This can make one feel calmer and somewhat spaced out. This, however, is not real mental development, I have since learned.

In fact, Dr. Eck found that as the copper balance improves and the liver and other organs regenerate, most people develop a craving for meat, as it is a rich source of many nutrients including zinc, copper, alpha-lipoic acid, B-complex vitamins, carnitine, taurine and others. Grass-fed meats and wild game are also usually excellent sources of zinc, omega-3 fatty acids and other nutrients.

Eating meat can cause uncomfortable symptoms. Dr. Eck found that when a vegetarian eats red meat, or even a lot of chicken or turkey, for example, it may cause a copper elimination. This can result in fatigue, a headache, acne, gas, bloating, an upset stomach, heaviness in the gut, and other symptoms. If the person does not understand why this occurs, he or she may feel this is proof that meat is not healthful, when it is not true.

The symptoms may occur because the body is not used to the food. It can also occur because eating meat increases the activity of the adrenal and thyroid glands, which in turn enhances the oxidation rate. This allows the body to eliminate some copper. The body must move the copper into the blood stream, where it causes the temporary symptoms until it is eliminated completely through the bile, urine or other routes. Solutions for this problem are:

- *Eat small portions of meat and don't worry about the symptoms, which will eventually subside.*
- *Enhance the eliminative organs with enemas, saunas or other means to improve copper elimination.*
- *Use a powerful digestive aid to assist digestion such as GB-3 from Endomet Labs.*
- *Rest after all meals.* Resting after a meal is always an excellent habit.

COPPER AND CANCER. A hair copper level that persists on several tests above about 10 mg% is often related to a tendency for infections and possibly cancer. Another indicator of hidden copper and a tendency for immune imbalance is a sodium/potassium ratio less than about 2:1. Copper imbalance may impair the immune response in many possible ways:

- *Tumor angiogenesis.* This is the ability of a cancer to grow new blood vessels so it can spread. Recall that copper excess or bioavailability damages connective tissue such as blood vessels. This might increase the chances that a cancer will spread more easily.
- *Vitamin C.* Copper lowers vitamin C, a substance known to protect against some cancers. This may lead to oxidant damage due to copper-induced vitamin C deficiency.
- *High estrogen levels.* Copper excess is associated with high levels of estrogens, which are potent carcinogens.
- *Impaired liver function.* Copper accumulates in the liver and can damage it.
- *Zinc deficiency.* High copper is associated with zinc deficiency. Zinc is vital for the immune response.
- *Impaired cell respiration.* Copper in the proper amount is needed for aerobic or oxygen-based cell respiration. As copper becomes less bioavailable, cells cannot use oxygen as well and may revert to a sugar-based respiration characteristic of cancer.
- *Low thyroid conditions.* Copper imbalance often affects the thyroid gland. Hypothyroid conditions are common in cancer patients.

CHILDREN'S HEALTH AND COPPER. Children are all born with high levels of copper. This may persist for several years. It gives babies and young children a spacey quality in which they live somewhat in their own little universe. As children grow, the copper level should decline. However, many children have so little zinc, as well as other mineral imbalances, that high or bioavailable copper persists into adulthood.

Why children have copper imbalances. Copper imbalance problems for a child often begin when still in the womb. High-copper mothers pass on excessive copper, along with low levels of zinc and other trace minerals, to the fetus through the placenta. This problem is called *congenital copper imbalance*. It is to be distinguished from a genetic or inherited error of the DNA. It is simply an imbalance present at birth that was passed from mother to child. The inherited copper storage disease, Wilson's disease, is discussed later in this section.

Once the child is born, causes for high copper include too much copper in the breast milk, possibly, which may even cause a baby to reject the breast milk. Infections, medical interventions such as vaccines, and stress may also further deplete zinc. This has the effect of causing the symptoms of high copper as well.

Symptoms of copper imbalance in babies and children. Copper has a powerful impact on children. Imbalances may cause diaper rashes, eczema, ear infections, delayed development syndromes, learning disorders, colic, ADD, ADHD, autistic tendencies, sleep problems and childhood cancers. Other conditions might also be related to copper imbalance that are discussed above in regards to adult symptoms of copper imbalance.

Prevention and correction. Congenital copper imbalance can often be prevented easily if a mother-to-be corrects her biochemical balance and oxidation rate before becoming pregnant. This is always best. If the problem in the mother is left unattended, serious birth defects can arise from copper and zinc imbalances. Zinc is known to help prevent neural tube defects, as well as others.

Most copper imbalance can also be corrected after a baby is born if the child is born normal in most regards. If there is a birth defect due to this cause that cannot be totally corrected, development can be superb to help minimize the damage and assist with rehabilitation.

Symptoms of a copper imbalance in a mother-to-be. Many times there are no symptoms at all. The mother may also look very well. This is unfortunate, but usually true. In my experience, only a properly performed and properly interpreted hair mineral analysis can assess the copper/zinc balance adequately. This can help explain why one of every 100 or even more children in America today is either born with or will develop a severe developmental, learning or behavioral disorder. It also helps explain the soaring rate of childhood cancers in America and elsewhere. Obviously, post-modern medicine is not caring adequately for pregnant women.

CARDIOVASCULAR SYMPTOMS. This has been discussed with connective tissue disorders above. In addition, high or bioavailable copper is associated with mitral valve prolapse, heart arrhythmias, palpitations and heart failure. It may also be involved with some cardiomyopathies, although others, such as Keshan's disease, have more to do with selenium.

ANEMIA, HYPOTENSION AND PYROLURIA ASSOCIATED WITH COPPER.

Iron deficiency anemia. Copper is required for the conversion of iron from Fe⁺² to Fe⁺³ and back again. This is an essential aspect of hemoglobin formation. When the copper level is excessive and bioavailable, it often causes a mild microchromic, microcytic anemia. This is most often misdiagnosed as an iron deficiency anemia when the real cause is a copper

imbalance. It does not respond too well to iron, although taking enough iron will lower copper somewhat because iron and copper are antagonists in many ways.

Beware that iron toxicity can be even worse than copper toxicity, so anyone with an iron deficiency type of anemia should be checked with a hair analysis for copper imbalance before taking iron. Recall that the hair copper level is NOT the way to evaluate copper. This is explained below. In our experience, few people need more iron except perhaps vegetarians, and some menstruating women who eat poorly or those who lose a lot of blood each month.

Hemolytic anemia. *Wilson's disease*, a rare inherited disorder of copper storage, is associated with a hemolytic anemia. According to *Harrison's Textbook of Internal Medicine*, this may be due to oxidant damage of the red blood cells due to copper or even a vitamin C deficiency.

Histapenia. Carl Pfeiffer, MD, PhD stated that copper destroys histamine. He identified a type of schizophrenia in which serum copper is elevated and histamines are low. Slow oxidizers may also have low histamines due to impaired cell permeability.

Pyroluria. This refers to the presence in the urine of "mauve factor" or kryptopyrroles. Dr. Eck stated this has to do with copper imbalance, usually high copper. Patients with pyroluria often display many symptoms of copper toxicity. These include migraine and other headaches, emotional sensitivity, fatigue, nervous exhaustion, fears, depression, anxieties, insomnia, anorexia and others.

In addition, these patients respond excellently to supplementary zinc and vitamin B6. These are well-known copper antagonists. Dr. Pfeiffer wrote that in cases of pyroluria, an oral dose of 50 mg of vitamin B6 "reduces excretion of zinc while increasing copper excretion". (*Mental And Elemental Nutrients*, p. 407)

ADDICTION AND COPPER. Addictions may involve copper in the following ways:

- *Addictions help some people avoid copper toxicity symptoms.* Copper imbalance frequently causes fatigue, depression, anxiety, spaciness, brain fog and other annoying or scary symptoms. A major reason people are attracted to some addictive substances or behaviors may be to stimulate the adrenals, in part to keep their copper in balance and prevent these symptoms. Any stimulant will tend to harmfully keep the adrenals pumping, from intense exercise, caffeine and sugar to loud music, spicy foods, excessive sex or cocaine.
- *The 'copper high'.* A friend, Alice, is a brilliant nutritional consultant. She tells me that she enjoys having a high hair copper level. When she tries to lower it with zinc, or worse, with molybdenum, she feels nervous, anxious and, in fact, depressed. Copper may give one a 'high' by causing a slight detachment from reality. Thus some people will be attracted to copper-enhancing foods or activities for this reason. These might include eating chocolate, vegetarianism, raw food diets and perhaps other high-copper foods such as avocados.
- *Copper, cadmium and addictions.* Dr. Eck stated that cadmium found in marijuana and tobacco cigarettes, and even in coffee, drives copper out of the blood and back into storage. These drugs may be addictive, in part, because by driving copper out of the blood, copper symptoms temporarily diminish. They will come back, however, when the drug wears off.

DETECTING COPPER IMBALANCE

Copper accumulates in the liver, brain, kidneys and other internal organs where it is not easy to measure without painful and invasive biopsies. Blood, urine, feces and hair testing are also used to detect copper imbalances. No direct test for copper tends to be totally reliable. The

liver biopsy is considered diagnostic for Wilson's disease. Carl Pfeiffer, MD, PhD used serum copper tests. Other doctors measure serum ceruloplasmin. However, these tests can be normal or low even when copper is excessive in the tissues.

Simple urine tests are not reliable because the body does not usually eliminate much copper in the urine. Urine challenge tests using penicillamine, (D-(-)-3-mercaptovaline), a somewhat toxic copper chelator, are better, but can still miss many copper problems.

HAIR MINERAL ANALYSIS TO DETECT COPPER. When performed and interpreted as described in this text, the hair mineral test is excellent to detect several copper imbalances. These include copper excess, copper deficiency and biounavailability, which is a combination of excess and deficiency.

Using the hair mineral analysis to assess copper is complex, at times. ***The hair copper level is not a reliable indicator, according to Dr. Eck's research. Instead, one must look elsewhere on the test for subtle indicators.*** First let us discuss the meaning of a high, normal and low hair copper level. Then let us discuss the interpretation of "hidden" or more subtle copper indicators on a hair analysis.

The hair copper level. An ideal hair copper level in an adult is probably about 2 mg% or 20 parts per million. However, the hair copper level often varies in a seemingly random fashion. This is why it is a poor indicator of copper metabolism.

High hair copper. On an initial hair analysis, a copper level greater than about 2.5 mg% indicates excessive and biounavailable copper in both fast and slow oxidizers. However, this is not true on retests. Very often, on retest hair analyses, copper may rise in the hair as it is being eliminated due to a development or other health program.

Low hair copper. In slow oxidizers, a hair copper less than 2.5 mg% is not significant. Most of the time, excess tissue copper is present. Often, a low copper in a slow oxidizer indicates biounavailable and *excessive* hidden copper. Therefore, ***be careful not to give copper to all those who have a low hair copper level.*** This is a common mistake. ***See below to determine who needs a copper supplement.***

All fast oxidizers are in need of copper, regardless of the copper reading. A low reading in a fast oxidizer is a true deficiency state. A high reading is a biounavailable copper, and supplementation is still needed.

Showing copper. When the hair copper is elevated, especially in a slow oxidizer, Dr. Eck and I call it "showing your copper". I am not sure why some people show their copper toxicity more than others. It may have to do with emotional openness or perhaps has to do with the bioavailability of the copper.

COPPER IMBALANCE INDICATORS. As stated above, the hair copper level is not a good indicator for many copper imbalances. Through years of research, Dr. Eck found that the following are excellent indicators for the major copper imbalances:

High tissue copper:

- *Copper level greater than about 2.5 mg%.*
- *Calcium level greater than about 70 mg%.*
- *Potassium level less than about 4 mg%.*
- *Zinc level less than about 13 mg%.*
- *Mercury level greater than 0.02 mg%.*

- *Calcium /potassium ratio greater than 10:1.*
- *Sodium/potassium ratio less than about 2:1.*
- *Phosphorus less than about 12 mg%. This is a newer indicator with less research behind it.*
- *Four low macrominerals.*
- *Perhaps a zinc level greater than about 20 mg%.*

The list above indicates that most people have a copper imbalance involving too much tissue copper. The reason Dr. Eck knew this was that as people progressed on a development program, copper would eventually start coming out and copper-related symptoms such as headaches or rashes would then disappear.

Biounavailable copper:

- *Copper level less than 1 mg% or greater than about 3 mg% in a slow oxidizer.*
- *Copper level greater than 2.5 mg% in a fast oxidizer.*
- *A sodium/potassium ratio less than about 2.5:1 in either a fast, slow or mixed oxidizer.*

A need for copper supplementation:

- *All cases of a sodium/potassium ratio less than about 2.5 mg%.*
- *All fast oxidizers.*
- *Perhaps in those with a low calcium/magnesium ratio, but only in a fast oxidizer or a four lows pattern.*
- *Combinations. Fast oxidizers with a low sodium/potassium ratio require more copper than if only one of the above patterns is present. Even more copper may be needed for a *step up pattern*, which has all three of the above situations combined on one chart.*

THE BLESSING OF COPPER TOXICITY. Copper toxicity, though it causes many unpleasant symptoms, can be a blessing in disguise. It may force one to slow down, relax more, and review one's lifestyle, diet, attitudes, occupations and other aspects of life, in order to make changes that promote a more healthful life. Those with a copper personality type may use copper to detach or "space out" to some degree because they either do not know how to handle the world or they are in a situation such as a job or relationship that is not working well for them. It can be a blessing to really see this and make necessary changes.

Many of those with a copper imbalance are sensitive people who must live their lives in a peaceful and directed manner, and not just "follow the crowd". A copper imbalance is a wakeup call for these people that something is out of balance in their lives. In these ways, the scourge of copper imbalance can be one of the most positive events in a person's life. The only popular book on the subject that I know of is *Why Am I Always So Tired?* by Ann Louise Gittleman (1999).

COPPER SYNERGISTS. These include **calcium and magnesium**, which often move in the same direction as copper on hair mineral analyses. Others are dietary factors that help balance fast oxidation including **vitamins A, D, B12, choline, inositol, fat in the diet** and a **low-carbohydrate diet**. For connective tissue and a few other functions, **zinc** and **vitamin C** are synergists as well. **Iron** is needed with copper for energy production in the electron transport system. Many other nutrients are also required with copper in other body functions.

COPPER ANTAGONISTS. These include most **B-complex vitamins, vitamins C and E, protein** in the diet, **molybdenum, manganese, chromium, selenium, zinc, iron** and perhaps other trace elements. **Sulfur-containing foods, herbs and amino acids** are also often used as copper antagonists such as L-taurine, methionine, cysteine and others.

WILSON'S DISEASE, AN INHERITED COPPER DISORDER. This very rare disorder (about 1 in 200,000) is often confused with acquired copper overload. I have never actually seen a client with Wilson's disease. I wonder if it is a real entity, or if it is just a severe case of acquired copper imbalance.

The two might not be easy to tell apart because acquired copper toxicity can cause similar symptoms as Wilson's disease including low ceruloplasmin, chronic hepatitis, anemia, kidney damage and brain damage. These symptoms of Wilson's disease, however, can teach us a lot about the long-term effects of copper overload on the body. Mental symptoms similar to Parkinsonism and some resembling multiple sclerosis may also occur. These can provide important clues as to the causes of these common diseases of our time.

A sign of Wilson's disease that is easy to check for is the Keyser-Fleischer ring. This is a golden-brown or sometimes gray-green pigment ring around the edge of the cornea or the inner part of the eye. This is present in about 50% of cases. Wilson's disease has nothing to do with a newer syndrome called Wilson's syndrome. This is a failure to adequately convert tetraiodothyronine or T4 to triiodothyronine or T3.

BALANCING COPPER. As more practitioners discover the extent and importance of copper imbalance, they are using various means to correct it. Dr. Eck spent years analyzing mineral analyses and working with clients to come up with his protocols for copper imbalance. He designed protocols that address this problem very successfully, without side effects, at low cost, and quite permanently in most cases. He also observed other methods of treatment. Here are a few comments on all these methods of balancing copper:

Development science. This works superbly for copper imbalance. In keeping with the principles, however, one must always focus on balancing the entire body chemistry, rather than focus mainly on copper. When this is done, copper imbalances usually go away on their own, permanently, without adverse effects and without upsetting other parameters of health.

Chelation therapy. Practitioners may use synthetic agents that bind copper and remove it forcefully. These include DMSA, DMPS, perhaps EDTA or D-penicillamine (Cupramine or Depen). Among the natural chelating products are those containing chlorella, cilantro, zeolite, yellow dock, bugleweed and others. Dr. Eck never used or recommended these methods. In fact, he found that EDTA and other drugs worsened the sodium/potassium ratio on clients' hair tests, which tends to indicate a decreased vitality level. Problems with all chelators include:

- *Removing zinc and other vital trace elements.* This is the most serious problem, and tends to make the client worse in subtle ways. It occurs even if one supplements the trace minerals.
- *Chelation alone does not address the underlying causes of copper imbalance.* This can slow progress and cause a recurrence of the copper toxicity.
- *Single-agent methods such as chelation often upset the overall balance of the body in subtle ways, such as unbalancing the oxidation rate.*
- *Toxicity of the chelating agent, in some cases.*

- *Removing copper before the body is ready to release it, especially in sensitive people.* This is not as common, but does occur.

Antagonist therapy. Another way to reduce a high copper level is with copper antagonists such as zinc, manganese, B-complex vitamins, vitamin C or molybdenum. This approach is helpful and safer than chelation, but still limited and may not work too well. Problems with this method are that it often does not address deeper causes for the problem such as slow oxidation, adrenal exhaustion or liver toxicity. It also often unbalances the body in subtle ways. For example, giving high doses of chelating drugs or any supplements is extremely yin in Chinese medical terminology. This can affect the oxidation rate and many other aspects of body chemistry.

Dietary methods. One can also limit the amount of copper in one's diet. This approach is somewhat helpful. One must stop eating most nuts, seeds, whole grains, chocolate and avocados. Even more important is to add enough nutritious meats, eggs and other protein foods, along with plenty of cooked vegetables to supply zinc and the many other nutrients that everyone needs today.

Mistakes that practitioners make regarding copper supplementation. These include:

- *Giving copper based just on a low test reading.* This is often harmful. Only give copper supplements to fast oxidizers or when the hair sodium/potassium ratio is low.
- *Not supplementing copper when it is really needed, as in the cases discussed above.* As a reminder, the hair, serum or other copper tests are not reliable indicators in most cases.

COPPER DETOXIFICATION SYMPTOMS. As copper is removed from the tissues, one may experience minor symptoms. These occur because high levels of copper, as they are being eliminated through the bile and urine, may temporarily upset the balance of minerals in the blood or in the tissues. The symptoms often include headaches, skin rashes, racing thoughts, strange odors, digestive upset, mood swings and energy fluctuations. Women may experience menstrual changes and occasionally ovarian pain. In men, testicular pain is possible.

To minimize symptoms, drink more distilled water, take extra coffee enemas, rub the feet more, use a near infrared sauna more often and be sure to rest and eat lightly of the correct foods such as cooked vegetables, rather than a lot of grains, for example. One may also stop a development program, except for the GB-3, for a day or two until symptoms subside. Extra vitamin B6, zinc, bile acids and perhaps milk thistle and dandelion root may also mitigate elimination symptoms. Rarely, I will use molybdenum to lower a high copper, but it is usually not needed and is slightly toxic, so it is best used very sparingly.

ZINC – A CRITICAL MINERAL TODAY

Zinc is a very alkaline-forming, rather soft, white-colored metal. It is perhaps the most amazing single mineral in the human body. Dr. Eck called it the *gentle strength mineral*. I suggest also calling it the *balancing mineral* because of its unique actions in the body.

FUNCTIONS OF ZINC. Zinc has many roles, including:

- *Protein synthesis.* Zinc is required for RNA transferase and other enzymes involved in the synthesis of all proteins, enzymes, hormones and other tissues.
- *Carbohydrate metabolism.* Zinc is required for insulin production and secretion, and to extend the action of insulin.
- *Male and female sexual and reproductive activity.* Zinc is especially helpful for male sexual activity. Both the male and female sexual secretions are rich in zinc. The prostate gland is a reservoir for zinc.
- *Vision.* Zinc concentrates in the retina and other structures of the eyes, where it acts as an anti-oxidant and has other functions as well.
- *Cardiovascular system.* Zinc is essential to maintain the flexibility of the arterial walls and thus to maintain normal blood pressure. Cadmium can replace zinc in the arteries, leading to hardening of the arteries.
- *Acid-base balance.* Zinc is an important alkaline mineral in the body.
- *Oxygen and carbon dioxide balance.* Zinc is needed for carbonic anhydrase, an enzyme that helps remove CO₂ from the body.
- *Digestive system.* Zinc is required to produce all digestive enzymes.
- *Nervous system.* Zinc is intimately involved in the central nervous system as a calming neurotransmitter and has other subtle roles as well. Some are described below.
- *Appetite, taste and smell.* Zinc is needed for the sense of taste and smell, and helps regulate the appetite as well. Low zinc is associated with anorexia and other eating disorders.
- *Endocrine system.* Zinc is needed for the synthesis of most hormones in the body.
- *Blood disorders.* Low zinc can lead to anemias due to lead or copper toxicity.
- *Musculo-skeletal system.* Zinc is required for bone and muscle proteins and strength.
- *Connective tissues.* Zinc is required for the skin, hair, nails and other soft tissues.
- *Immune response and wound healing.* These are other functions that involve zinc.
- *Inflammation.* Zinc is the primary anti-inflammatory mineral. Deficiency is associated with many painful and inflammatory symptoms.
- *Detoxification.* Adequate zinc helps prevent cadmium and mercury toxicity. Zinc appears to help the elimination of copper, mercury and other toxic metals in many ways.

SOURCES OF ZINC. The best sources of zinc are red meats, chicken, turkey, eggs and seafood. Vegetarian sources are not as good, such as pumpkin and sunflower seeds, and to a lesser extent brewer's yeast and a few cheeses. Far less important sources of zinc include skin ointments such as zinc oxide, Caladril and perhaps other skin creams. Zinc is used in these products for its soothing and healing effect on the skin. *Head & Shoulders* shampoo is also high in zinc. It is not the best form of zinc, but some is absorbed from the product. Zinc is used in this product to overcome dandruff, a fungal infection of the scalp that causes itchiness and flaking of the skin.

Reasons for an almost universal zinc deficiency today include:

- *Soils low in zinc.* The zinc has been farmed out in many areas of the world. This is a serious worldwide problem that is aggravated by modern farming methods that do not return all the human and animal manures to the land.

- *Hybrid crops.* Newer crop varieties do well on zinc-depleted soils, but contain much less zinc. Wheat, for example, is now much lower in zinc. This makes it a much more inflammatory food item today, for which reason I do not recommend eating any at all.
- *Food processing.* Milling whole grains often removes most of the zinc in the food. Spraying frozen vegetables with EDTA to retain color also removes more zinc.
- *Diets high in sugars and carbohydrates.* Zinc is essential for insulin and carbohydrate metabolism. Eating a high-carbohydrate diet stresses this system and depletes zinc faster.
- *Stress.* Zinc is lost often within minutes as part of the fight-or-flight response.
- *Less meat in the diet.* One of the few good sources of zinc is meats. In general, people are eating less meats. This may have other benefits, such as reducing iron intake, but it also reduces zinc intake and can cause disease for this reason. Low zinc may be one reason vegetarians do not live as long as meat eaters, in general.

SYMPTOMS OF ZINC IMBALANCE. *The symptoms and conditions associated with zinc deficiency are practically identical to the symptoms of copper toxicity. They may include:*

- *White spots on the fingernails, although there are a few other causes of this symptom.*
- *Stretch marks, varicose veins and most cases of dermatitis, eczema, acne, psoriasis, dandruff, hair loss and many other skin disorders.*
- *Most conditions related to the male and the female reproductive systems.* These include menstrual problems, prostate difficulties, erectile dysfunction and most others.
- *Most birth defects directly or indirectly involve a zinc deficiency.*
- *Delayed development, short stature, undescended testicles, and many other problems related to growth and development.*
- *Brain-related disorders such as autism, ADD, ADHD, dyslexia and many others.*
- *Most vision disorders such as macular degeneration, near and farsightedness, retinitis, keratitis, blepharitis and other infections.* Glaucoma, cataracts and other eye problems may also involve zinc deficiency. Eye doctors are among the few medical practitioners who use zinc and other nutrients to prevent and treat vision-related problems.
- *Nervous system disorders.* Zinc may be considered a calming neurotransmitter in its own right. Deficiencies, in particular, often result in hyperkinesis, anxiety, irritability, nervousness, emotional instability, mood swings, bipolar disorder, violence and most other mental and emotional symptoms. Other neurological conditions such as epilepsy or seizures, schizophrenia and other severe emotional disturbances often involve zinc deficiencies.
- *Immune response disorders.* This includes infections and cancers.

ZINC AND HIGHER THOUGHT. Zinc is critical for higher level mental functioning. This is its most amazing property. It does this by helping to activate the higher nerve centers of the neocortex or new brain. The neocortex is the crowning achievement of mankind. This is why zinc is such a special mineral. Exactly how zinc interacts with the brain matter is mysterious and not fully understood. However, zinc seems to be able to activate advanced mental activity and more advanced attitudes such as compassion, love and others.

When zinc becomes deficient, all types of criminal and anti-social behaviors increase drastically. As a result, zinc supplements and diets with meats such as lamb have a special importance in development science and are part of every program. Vegetarian nations such as China and India may have less cancer and heart disease than America, Australia, New Zealand

and the nations of Europe. However the vegetarian nations do not show the same degree of mental and/or spiritual development, in part due to lower zinc levels in their diets.

DETECTING ZINC IMBALANCE. Urine, blood and feces assessment are not considered reliable ways to check zinc status. Some doctors measure the zinc level in white or red blood cells. However, these cells are in contact with the blood, so they may reflect blood levels more than they reflect tissue levels of zinc. However, even if they reflect tissue levels, they are not a tissue that is an important zinc target organ such as the eyes, prostate or the brain.

Zinc assessment in development science. To cope with the problem of measuring zinc, development uses a different approach as follows:

- *Dr. Eck believed that everyone today requires supplementary zinc.* Reasons for this have been mentioned above having to do with the soil, our food supply, modern diets and stress.
- *Instead of worrying about the total body load of zinc, one need only know how much zinc each person needs at a particular time.*
- *He found that the hair zinc level is often not a reliable indicator of how much zinc is needed.*
- *Instead, he found the sodium/potassium ratio is generally the best basis for recommending supplementary zinc.* When the ratio is less than 2.5:1 the amount of zinc given is about 25-50 mg, with a little more given for a lower ratio. Copper must be given along with it because copper is generally biounavailable in this situation.
- *When the sodium/potassium ratio is greater than 2.5:1, more zinc is needed.* The amount varies from 50 mg if the ratio is up to about 6:1, up to about 130 mg daily if the ratio is over 12:1. This should not be continued for more than a few months, however. A retest hair analysis will show if one should continue these high levels of zinc supplementation.

Care with zinc supplementation. Too much zinc lowers copper, reduces the sodium/potassium ratio and can even lower the hair zinc level, according to Dr. Eck's research. It can cause some depression, prostate problems and others. This has to do with the complicated mineral balancing system of the body. Avoid random zinc supplementation for this reason.

HAIR ANALYSIS AND ZINC ASSESSMENT. An ideal hair zinc level is about 16-20 mg% or 160-200 parts per million. The level in fast oxidizers is usually lower than in slow oxidizers, perhaps due to the essential antagonism between sodium and zinc in the body.

Low hair zinc. On an initial hair test, a zinc level below about 13 mg% indicates either a serious zinc deficiency, or at times, zinc will be low because it is acting as a *defender* to keep the sodium level or the sodium/potassium ratio higher. On a retest hair analysis, zinc may decrease when toxic metals are removed. The zinc may replace the toxic metal in enzyme binding sites throughout the body, and does not deposit in the hair for a few weeks or months. This is always a temporary decline in the zinc level and not a concern. On a retest, zinc may also decline because it was *displaced upward* on the first test by the presence of lead, cadmium or other toxic metals. Defenders and displacement are discussed in Chapter 21.

High hair zinc. An elevated hair zinc does not indicate an elevated total body zinc. A high zinc often indicates the presence of toxic metals, such as copper. The zinc somehow reduces their negative effects. The copper or other toxin need not show up on the test itself. As the copper or other toxic metal levels decrease, the hair zinc level decreases toward its ideal level.

Zinc overload. This is rare, and usually due to taking more than 100 mg of supplemental zinc for several months without taking copper. In these cases, however, the hair zinc level may not be elevated. Zinc overload could occur rarely in occupations such as mining and manufacturing such as galvanizing, in which a zinc/cadmium coating is applied to metals.

Use of Head & Shoulders shampoo. The hair zinc level can become very high in people who use Head & Shoulders shampoo regularly. It declines quickly, however, upon changing one's shampoo or at least reducing the frequency of its use. In these cases, I have never seen clinical signs or symptoms of zinc overload. Most likely, the form of zinc used in the product is not well absorbed and just affects the scalp and hair, not the entire body.

ZINC SYNERGISTS. Zinc is involved in so many enzyme systems that most of the other vital minerals are synergists with zinc in one or more enzyme systems. Particular synergists include:

- **Selenium, chromium** and **magnesium** in many enzyme systems.
- **Insulin** and **testosterone**.
- **Calcium, magnesium** and zinc function together as 'the sedative elements'. They calm the sympathetic nervous system.
- In some situations, zinc raises **sodium** and **potassium** levels by supporting adrenal glandular activity and perhaps for other reasons.
- Most **B-complex vitamins** and others. In particular, zinc and **pyridoxine** or vitamin B6 have a close relationship due to their roles in essential enzymes in the brain and elsewhere.
- In fast oxidizers, zinc causes **calcium** and **copper** to rise by reducing the stress response.
- **Copper** is also synergistic with zinc in many enzyme systems as well.

ZINC ANTAGONISTS. **Copper** is sometimes antagonistic with zinc. Zinc may also lower **estrogen** for this reason. It also lowers **aldosterone** as part of its anti-inflammatory response. Zinc can lower **sodium** on a hair tissue mineral analysis, especially if given in high doses. **Most toxic metals** are able to replace or displace zinc in various enzyme binding sites. One reason for this is that zinc is involved in so many enzymes systems.

Zinc often lowers the hair **calcium** in slow oxidizers. This occurs because zinc helps to restore adrenal activity in slow oxidizers. It also occurs because zinc lowers copper, which is often directly related to the level of calcium. Too much zinc in slow oxidizers, however, may raise hair calcium by lowering sodium excessively. Zinc competes with most **trace minerals** for intestinal absorption. This means that the same transporters that adsorb zinc through the intestines are used by the body to adsorb the other trace minerals. Therefore, taking extra zinc may inhibit the adsorption of the others.

A balancing mineral. Zinc appears to be able to help raise a low level of calcium, magnesium, sodium and potassium. It also appears to help reduce elevated levels of these same minerals. Few other elements have this special balancing property, sometimes called an *adaptogen*. This word means the substance helps the body regulate itself in the face of different kinds of stress. Zinc is definitely such a substance.

16.

THE AMIGOS OR FRIENDS – IRON, MANGANESE, CHROMIUM AND SELENIUM

Carol, age 55, suffered from tinnitus or ringing in the ears. This is known to be associated with a chronic ear infection, perhaps manganese or arsenic toxicity, or arteriosclerosis affecting the ear structures. She also had memory loss and was angry, which is often associated with iron toxicity. Her first hair analysis revealed a four highs pattern and an aluminum of 0.6 mg%. Otherwise, few imbalances were present. High aluminum is an indicator that a person has high levels of the 'three amigos' - aluminum, iron and manganese.

Carol started a development program and began to feel better as well. Four months later, a retest mineral analysis revealed a slow oxidation pattern without four highs. In addition, her manganese, iron and aluminum levels were all very high. A rise in these minerals on a retest indicates an elimination in progress. Often, though not always, aluminum, iron and manganese rise and fall in the hair together. This is why they are called the 'friends' or 'amigos'. Their function, apparently, is to support the sodium level and the adrenals, probably by irritating them in some way or irritating the nervous system. On the next hair test, these levels declined once again. As this occurred, Carol felt even better.

This chapter discusses some of the most critical trace elements for our health today. Most people are somewhat deficient in all of them except iron, which is present in excess in most people. Most people also have excessive amounts of *biounavailable* manganese and often chromium and selenium. This chapter is titled "The Amigos or Friends" because usually iron, manganese and perhaps chromium and selenium appear together in a biounavailable form, particularly in slow oxidizers. ***The principle of the amigos is if any one is present in excess on a hair analysis, most likely all of them are present in excess in the body, in a biounavailable form.***

IRON

Iron may be called the **hardness** or **rigidity** mineral. Like the metal itself, iron tends to be associated with hardness and strength, but a rigid and brittle strength. It is a highly acid-forming mineral and one of the most plentiful minerals on earth with many critical roles in the body. Today, acquired iron overload is a major hidden health condition. It accumulates pathologically in most Americans and Europeans, contributing to health problems mainly related to infection and inflammation. These ailments include arthritis, cancer, cardiovascular disease, diabetes, and many others. When it accumulates, it is often in a biounavailable iron oxide form.

FUNCTIONS OF IRON. Iron is critical for every cell. Its many functions include:

- *Oxygen transport.* Iron is the central atom in hemoglobin, which carries oxygen in the blood.
- *Muscle function.* Myoglobin, the main muscle protein, requires iron.
- *Energy production.* Iron is required in the cytochrome enzyme system in the electron transport section of the Krebs energy cycle. Copper is also involved in this enzyme system.
- *Purine metabolism.* Iron is required for xanthine oxidase and purine catabolism. This is the breakdown of certain proteins and amino acids in the body.
- *Detoxification and protection from free radicals.* Iron is also needed for the superoxide, peroxidase, glutathione and catalase enzyme systems. Glutathione peroxidase is a primary enzyme in the liver detoxification pathways. The catalase, superoxide and peroxidase systems have to do with removing free radicals from the body to prevent oxidant damage.
- *The brain.* Iron is used in animals and probably humans for the sense of direction. Tiny magnetic particles of iron or manganese guide animals and perhaps humans, acting like compasses that respond to the magnetic poles of the earth. This may be a reason for jet lag when traveling through time zones and even when traveling north to south.
- *Sexuality and emotions.* Iron is a lower 'male' element and associated with anger and rage.
- *Hormones.* In animals, at least, iron is also involved in the synthesis of the catecholamines such as epinephrine, norepinephrine and dopamine.

SOURCES OF IRON. Meats, poultry and foods from the sea are the best source of readily absorbable iron. Red meats contain iron in the form of myoglobin, an iron-containing protein that gives the meat the reddish color. Vegetarian sources of iron are less absorbable and include green vegetables, blackstrap molasses, brewer's yeast, bone meal, soybeans, sunflower and pumpkin seeds.

Poorly absorbed iron. Most white, refined and bleached flour is enriched with a poorly absorbed form of iron. This can be an important source of iron in poor nations, and for those who consume baked goods, soups thickened with flour and other flour products. Most other trace minerals have been removed from this flour, so the added iron makes it quite unbalanced nutritionally. This is a reason to avoid all white flour products.

Iron contamination of wells and ground water occurs often in certain areas. One should filter out the iron if it is high in the water supply. Iron cookware can supply a little poorly-absorbed iron if it is used regularly.

Occupational exposure. Those in the building trades and especially metalworking trades such as welders, steelmakers, sheet metal workers, auto repairmen and others may absorb iron dust through the skin and by inhalation. Iron is also used in fertilizer manufacture, wood preservatives, weed killers, pesticides, inks, dyes and other assorted chemical processes.

Anger and iron buildup. Interestingly, holding onto anger may cause the body to retain much more iron. Iron settles in the amygdala, a part of the brain associated with rage and anger.

Adrenal exhaustion, of itself, may cause the retention of a bioavailable form of iron, perhaps as a way to boost the hair sodium level by stimulating the adrenal glands. This may be an oxide or other toxic form of iron. It might also irritate the pituitary gland or other areas of the brain that can activate the sympathetic nervous system.

LOW IRON SYMPTOMS. Common symptoms include fatigue, weakness, shortness of breath, a pale complexion and a microchromic, microcytic anemia. However, these symptoms may be due to a *copper imbalance and copper-related anemia*, which is far more common today.

CAUSES FOR IRON DEFICIENCY. Among the most important ones are:

- *Diets low in meat and eggs.* Children, in particular, need more iron because they are growing fast and building muscle and blood. In less-developed nations, meat-deficient diets combined with parasitic diseases that cause subtle internal bleeding can result in severe iron problems in children and adults.
- *Heavy menstrual periods.* Young woman can develop iron deficiency if the periods are heavy and if the women do not eat enough iron-rich meat or eggs.
- *Vegetarian diets.* These are lower in iron, and the iron is less absorbable, in general.
- *Over-the-counter and prescription pain killers.* Tylenol, Aleve, Excedrin, Anacin, aspirin, ibuprofen and many others irritate the stomach and intestines and cause hidden bleeding into the intestines. Often it is not discovered until a person is severely anemic.
- *Blood loss from other causes such as a bleeding ulcer, an accident or other possible causes.*

IRON TOXICITY. Genetically determined iron toxicity. The classic iron storage diseases, hemosiderosis and hemochromatosis, are well known in medicine. *Hemosiderosis* refers to iron deposition in body tissues. *Hemochromatosis* is a later stage of it associated with tissue injury. Medically, the cause is usually unknown.

Acquired iron overload. The body conserves iron very well. This is helpful at times, but is now contributing to iron overload in many people. Symptoms are vague, routine blood tests are often normal, and liver biopsies are somewhat invasive and even dangerous.

Symptoms of iron toxicity. Iron can replace zinc, manganese and perhaps even magnesium in many enzyme systems of the body. Common symptoms and conditions that may occur are:

- *Inflammation.* Biologically available iron is protective against oxidant damage. However, toxic or bioavailable iron is highly pro-inflammatory. One may develop arthritis, cardiovascular disease, other aches and pains, liver disease, eye diseases such as macular degeneration, glaucoma and others, high blood pressure and other common conditions.
- *Diabetes, hypoglycemia and prostate disease.* If iron replaces zinc in the pancreas, it may cause diabetes. If it builds up in the prostate, it can cause symptoms here.
- *Cancers.* Toxic forms of iron, perhaps oxides, can interfere with energy production and detoxification, and lead to cancers.
- *Emotional problems.* Iron accumulates in the amygdala, a part of the brain associated with feelings of rage. Dr. Eck read that in Europe, bar room brawls occurred after customers had consumed large quantities of beer brewed in iron vats. Informal questioning of clients indicates that those with elevated hair iron levels often report feeling angry or enraged. Arrogance is another symptom associated with excessive iron in the brain.
- *Infections.* Iron feeds certain bacteria and can enhance a tendency for bacterial infections.
- *Other.* Symptoms are often vague and confusing, and can mimic many conditions.

DETECTION OF IRON OVERLOAD. Serum iron, ferritin, and total iron binding capacity or TIBC may not detect iron overload, particularly in its early stages. However, serum ferritin is sometimes helpful, and a level greater than about 60 is suspicious. A liver biopsy is diagnostic, but is rarely recommended due to its cost and danger. *Hair analysis is very helpful, but the hair iron level is not a good indicator.* See below for hair mineral evaluation of iron.

IRON AND HAIR MINERAL ANALYSIS. An ideal iron level on a hair mineral analysis is about 1.8 - 2 mg%. A higher hair level is associated with iron toxicity. A lower level, however, is not significant. This is because iron does not tend to accumulate in the hair. A reliable and newly recognized indicator for iron toxicity is excess aluminum or manganese. ***Iron toxicity appears to be indicated on a hair mineral analysis whenever the iron, manganese or aluminum are elevated above their ideal levels of about 2 mg% for iron, 0.04 mg% for manganese and about 0.1 mg% for aluminum.***

This is a recent addition to Dr. Eck's work. In the last few years, and with the help of the use of near infrared saunas, I noticed that whenever aluminum or manganese are elevated, clients following a well-designed development program eventually begin to eliminate iron from their tissues, causing the hair iron level to rise as it is removed. The level then settles down to normal once the elimination process is over.

Iron buildup is a homeostatic mechanism to help support adrenal activity. The body appears to accumulate some biounavailable iron because it irritates the tissues and raises the sodium and perhaps the potassium levels to some degree, supporting weak adrenal glands.

Most people are iron-toxic. Using the criteria above of high manganese, iron or aluminum, *most people have some iron toxicity today.* This should not be too surprising, given the common use of iron-enriched flour in thousands of food items, the iron found in meat, eggs, and some vegetables, along with the difficulty in removing iron from the body.

Acquired iron overload with iron deficiency. In most cases, a diet containing meat, eggs, and green vegetables supplies plenty of available iron. Very rarely, a person has both an acquired iron overload, and yet requires iron supplementation. These are usually vegetarians, those who abuse anti-inflammatory drugs, and a few women with very heavy menstrual periods.

IRON REMOVAL. Removing excess iron is not easy. Medical methods are blood-letting or the use of iron chelating drugs such as deferoxamine. Neither method works too well for the following reasons:

- They both remove other vital nutrients along with iron.
- They both remove bioavailable iron along with biounavailable or the toxic form of iron.
- They may not remove enough of the toxic or oxide form of iron.
- They can both unbalance the body chemistry, at times severely.
- Neither method addresses the causes of iron overload, so the problem tends to recur and requires repeated treatments for life.
- Deferoxamine or Depen is toxic and can damage the kidneys. As a result, it is rarely used.

In contrast, a properly designed development programs can lower elevated tissue iron easily and safely, in my experience. This is quite amazing for experienced doctors to see. The body removes it naturally as the chemistry becomes more balanced. It is revealed, often without any warning, on a retest hair analysis as an elevated iron level when the iron is released from

storage sites. Symptomatic improvement generally occurs at the same time, with a reduction of inflammatory symptoms such as aches and pains, or improvement in one's diabetes and cancer. NOTE: Near infrared saunas and coffee enemas may be needed to accomplish iron removal.

IRON SYNERGISTS. Many elements act as synergists in various enzyme systems. **Copper** assists in energy production and heme synthesis. **Molybdenum** assists in xanthine oxidase, **selenium** in glutathione peroxidase and **cobalt** in vitamin B12 and heme synthesis. **Vitamin C** increases iron absorption. This is one reason I don't recommend prolonged use of high-dose vitamin C. **B-complex vitamins** assist in energy production.

IRON ANTAGONISTS. Many elements compete with iron for absorption, including **cobalt, zinc, cadmium, copper, nickel** and **manganese**. **Lead** directly interferes with hemoglobin synthesis, as can an imbalance of **copper**. **Other toxic metals** can compete with iron as well, in some cases.

MANGANESE

Manganese is another amazing mineral. Dr. Eck called manganese **the maternal element** because a deficiency of it in some animals causes reduced maternal behavior. However, I have not heard this reported in human beings, where manganese imbalance is quite common. The functions of manganese include:

- *Energy production.* Each cell requires manganese in the mitochondria to produce energy.
- *Musculo-skeletal system.* The health of the skeleton and soft tissues such as the skin, hair, ligaments, tendons and muscles requires manganese.
- *Mucopolysaccharide production.* These are jelly-like compounds that buffer many substances that flow between the cells. They also keep fluid in the spaces between the cells.
- *Cell membranes.* Manganese is required in animals for the cell membranes of the heart, pancreas, liver and kidneys.
- *Detoxification.* Manganese is part of the superoxide dismutase enzyme system in each cell that helps rid the body of harmful free radicals to stop oxidant damage.
- *Sensory organs.* It plays a role in vision and hearing.
- *Liver function.* It has to do with cholesterol metabolism and blood clotting.
- *Carbohydrate tolerance.* Manganese is deficient in those with hypoglycemia and diabetes.
- *Neurotransmitter synthesis.*
- *Endocrine system.* Manganese is important for thyroid hormone production (T4).

SOURCES OF MANGANESE. Manganese occurs in several valences, and +2 and +3 are the most common. The biologically active form is +3. It is poorly absorbed in the +2 form and toxic in the +6 form. Bioavailable manganese is found in many foods. Among the highest are tea, kelp, nuts, grains, bran, wheat germ, corn and parsley. Many other foods have some as well, though the overall levels are low, as they are today with all the vital trace minerals. This commonly causes a deficiency of manganese in most people today

Environmental sources are less bioavailable and usually toxic. Drinking water contaminated with manganese is common in some areas of America due to industrial pollution or water flowing over certain rock formations. Manganese excess does not have to be reported by

municipalities, according to United States EPA rules. As a result, most people who are drinking it are not aware of the contamination. It is revealed often on hair mineral tests, however.

Gasoline and manganese. Since the early 1970s, manganese compounds have replaced lead as a gasoline octane booster. Manganese is an improvement over lead, but both are harmful. Occupational exposure includes those in the welding and metalworking industries, manganese miners and a few other industries. Manganese is used industrially in paint pigments, varnishes, fertilizers, battery manufacture and in the production of all steel.

SYMPTOMS OF MANGANESE DEFICIENCY AND TOXICITY. Deficiency symptoms are usually vague and may include fatigue, depression, hypothyroidism, glucose intolerance, tendon and ligament disorders, and other poorly defined symptoms. Deficiency is widespread in America and Europe due to refined food diets and impaired digestion and absorption of minerals. This may contribute to widespread fatigue, obesity and diabetes.

Toxicity symptoms. Most people have too much biounavailable manganese in their bodies. It is one of the 'three amigos', meaning it is found in a biounavailable form along with iron and often aluminum. All of them appear to help bolster the sodium level and increase adrenal activity, probably by irritating the adrenals or the nervous system.

The symptoms of mild manganese overload include irritability, anxiety, and some degree of emotional detachment. Often there can be a somewhat skeptical attitude and not enough joy in one's life. This attitude is very prevalent in modern societies, as is manganese toxicity, in our experience. It is seen the clearest in many people raised on the East coast of the United States. It gives them a certain hesitancy and distance from others. This is helpful to a degree, but ultimately not so. Those with less manganese tend to be more relaxed and less 'uptight'.

Severe toxicity. Welders, machinists and others in the metalworking trades can absorb a lot of manganese through inhalation or contact. It can cause severe symptoms including diabetes, cancer and even criminality and psychopathic or sociopathic behavior. Manganese was very high in the hair of a number of psychopathic murderers. Manganese miners can develop a condition called *manganese madness*. It shares certain features with Parkinson's disease such as an impaired gait, tremors and often a fixed or silly facial expression. It may also be related to *mad cow disease*, or *bovine spongiform encephalitis* or *BSE*. Most cases of BSE were traced to a pesticide sprayed on the spines of cows in England that impaired manganese utilization.

MANGANESE AND HAIR ANALYSIS. The ideal manganese level on a hair analysis when the sample is not washed at the laboratory is about 0.04 mg% or 0.4 parts per million. However, hair manganese readings are often deceptive because most people need more bioavailable manganese, and most people have too much biounavailable manganese, regardless of the manganese reading. This always appears to be the case in very slow oxidizers and in slow oxidizers with a low sodium/potassium ratio.

Assessing manganese. A *low* hair manganese level means very little, in my experience. A *high* hair manganese is indicative of severe manganese overload in some cases. In others, it is due to bathing in high-manganese water. On retests, a higher manganese level may indicate an elimination of some biounavailable manganese via the hair and skin. To assess the degree of biounavailable manganese overload, I have found it is best to look to the levels of aluminum and iron. This was discovered since Dr. Eck's passing. An aluminum level greater than about 0.1 or iron greater than about 2 mg% are the indicators for biounavailable manganese overload. The higher either of these are, the more excess manganese is often present.

Supplementing manganese when the hair level is high. I have also found that when manganese is elevated in the hair, supplementing the person with bioavailable manganese will not raise the hair level further, and usually will help it to decrease to normal.

MANGANESE SYNERGISTS. **Zinc** and **chromium** are involved with manganese in glucose metabolism in the body. **Iron** is involved with manganese in superoxide dismutase and other superoxide enzymes. Many other nutrients are synergistic with manganese such as **copper** in connective tissue, **B-complex vitamins** in energy production and others.

MANGANESE ANTAGONISTS. **Iron, zinc, copper, calcium, magnesium, cobalt, vanadium** and perhaps other trace elements all compete with manganese for absorption. This is why high-dose manganese therapy is dangerous if continued for more than a few weeks, at the most. Development never recommends high-dose manganese supplementation, but others use it occasionally for muscle and ligament problems.

CHROMIUM

Chromium may be called the **blood sugar** mineral. Its functions include:

- *Glucose regulation.* Chromium may assist insulin to move sugar through the cell membranes.
- *Protein synthesis.* Chromium may also be involved in RNA and DNA replication.
- *Cholesterol synthesis.* Chromium supplements often lower an elevated cholesterol.

SOURCES OF CHROMIUM. Excellent food sources include egg yolks, peanuts, grapes, organic dairy products, wheat, wheat germ, brewer's yeast, molasses, kelp, seafood, liver and black pepper. I do not recommend any wheat, seafood, liver or peanuts. These are less healthful products for various reasons.

Many metalworkers are exposed to toxic forms of chromium such as chromates, dichromates and hexavalent chromium used in steel-making, welding and electroplating or making "chrome" car bumpers. Some powerful detergents contain chromium compounds, as do gasoline fumes, paints, dyes and a few other products. Some chromium is highly toxic. Trivalent chromium is essential for our health and is sold as a chelate, hexaniacinate and picolinate. A form called GTF chromium derived from brewer's yeast is probably the best absorbed supplemental form.

CHROMIUM DEFICIENCY IS UNIVERSAL. Chromium levels in most foods are low. The amounts in refined foods, such as white flour, are extremely low. Widespread chromium deficiency may be one reason for the epidemic of diabetes, obesity, high cholesterol and hypoglycemia today. Most people must supplement chromium, just as they must supplement zinc, selenium and magnesium because all are low in most diets today. Chromium levels decline with age. This may be due to a low intake from the diet and perhaps a reduced ability to absorb chromium with aging. Taking a digestive enzyme can help prevent the reduction in chromium and other trace elements that comes with age.

Babies low in chromium today. Most babies are born with lower levels of chromium than in the past due to deficiencies in their mothers. This can cause young children to crave sweets, for example, or develop diabetes at an early age, even though they are fed well.

HAIR ANALYSIS AND CHROMIUM. Hair appears to be fairly reliable to assess overall chromium levels. An ideal hair chromium level is probably about 0.12-0.14 mg% or higher.

Chromium assessment. A *low* hair chromium is very common and probably reflects a chromium deficiency. A *high* hair level on an initial hair test is rare and may be due to an occupational exposure, bathing water contamination or rarely to the use of old or poor quality chrome-plated scissors that cause a little chromium to flake off and mix with the hair sample. On retests, a high chromium level is often a release of stored bioavailable and toxic chromium. Many times, aluminum, iron, manganese or selenium will also elevate at this time. These minerals are called the *amigos* or *friends*, because they often shift together on hair mineral analyses. When the elimination is over, the hair chromium level will return to normal or, more often, becomes low on later hair analyses.

CHROMIUM SYNERGISTS. **Magnesium, zinc, manganese** and possibly **vanadium** are synergetic in the enzymatic reactions involved in glucose metabolism. Adequate **stomach acid** and **digestive enzymes** are helpful for chromium absorption from food or supplements. All the **B-complex vitamins** assist chromium in glucose metabolism to some degree. Among hormones, **insulin** is perhaps the most critical synergist. Many other nutrients are needed along with chromium in energy production and cholesterol metabolism.

CHROMIUM ANTAGONISTS. **Zinc, manganese, vanadium, iron** and other trace minerals compete with **chromium** for absorption. This is one of the problems with **white bread**, for example, that is loaded with too much iron and has had its chromium stripped away. **Sugars, fruit, fruit juices** and **starches in the diet, stress** and resultant **cortisol and insulin secretion** can further deplete chromium.

SELENIUM

Selenium is highly alkaline-forming and an amazing mineral. It is important today for many reasons, including its important mental and spiritual effects upon human beings. It may be called the **spiritual mineral** because it helps develop centers in the brain that lead to mental development. Its functions include:

- *Detoxification.* Selenium complexes with toxic metals and assists their removal, especially mercury, cadmium, arsenic and perhaps nickel. It is also required for the cytochrome P450 detoxification system in the liver.
- *Respiration.* It is involved in red blood cell oxygen transport.
- *The digestive system.* It is needed for pancreatic homeostasis.
- *The reproductive system.* Selenium may prevent birth defects due to cadmium and zinc deficiencies. It is also helpful for sperm motility, maturation, fertility and viability.
- *Thyroid activity.* Selenium is required for the formation of tetraiodothyronine or T4 in the thyroid gland. It is also required for the conversion of T4 to T3 in the tissues. T3 or triiodothyronine is the much more active form of the hormone.
- *The skeletal system.* Selenium may help maintain the bones and teeth free of decay.
- *Glutathione synthesis.* Glutathione is required for liver detoxification. Selenium is required for its production in the enzyme *glutathione peroxidase*, along with iron.

- *An antioxidant.* Selenium is involved in removing singlet oxygen atoms called free radicals that damage body tissues.
- *Cardiovascular health and energy production.* Selenium is required to produce coenzyme Q-10. Low tissue selenium may be why older people, in particular, are often low in this important compound that is important for many tissues, and often boosts the energy level.
- *Connective tissue.* It helps maintain the hair, skin, keratin and other connective tissues.
- *The immune response.* It is considered preventive for cancer and maybe for other disorders.
- *Metabolic.* It is involved in lipid and sulfhydryl metabolism. It is also an alkalinizing mineral because it is required for lactic acid dehydrogenase, the enzyme that removes lactic acid.
- *Prostaglandin synthesis.* Selenium is required for the conversion of prostaglandin G to prostaglandin E and F. The prostaglandins are anti-inflammatory substances that may play important roles in reducing inflammation throughout the body.
- *Protein synthesis.* Like zinc and chromium, selenium is involved in human transfer RNA as the compound Se-uridine. Thus, it plays a role in the synthesis of all proteins in the body.
- *Mental health.* Selenium, along with silicon, give a silky, smooth quality to the personality. Foods high in selenium, such as corn silk, also have a silky quality. Those who are deficient in selenium and silicon tend to be irritable, crabby, and often unpleasant to be around.

MENTAL DEVELOPMENT AND SELENIUM. As human beings develop spiritually and mentally, selenium and silicon replace iron in certain brain areas. These ‘lighter’ minerals appear to assist higher reasoning and more refined emotional expression. Selenium is associated with what may be called the ‘higher’ emotions such as compassion, peacefulness and joy.

SOURCES OF SELENIUM. Bioavailable selenium is found in few foods today. Corn has an absorbable form, especially blue corn chips and blue corn tortillas made in the traditional way. These are highly recommended, since everyone needs selenium. Be sure to ingest a source of omega-3 fatty acids if one eats a lot of corn chips because the vegetable oil in the chips is too high in omega-6 fatty acids. Other sources include yellow organic corn chips and tortillas, garlic, goat and cow milk and a few other foods such as Brazil nuts. However, nuts are very yin in Chinese terminology so they are not recommended as a staple food, as is blue corn, for example. Astragalus is an accumulator of selenium. This excellent herb is often used for infections and other immune symptoms. Depending on the soil levels of selenium, astragalus can accumulate up to 15 mg/gram of selenium.

Supplements. The best way to ingest selenium is through foods. However, due to low levels in foods, supplements are needed. The best appear to be food-based ones. The next best are probably yeast-based selenium or selenomethionine.

SELENIUM DEFICIENCY SYMPTOMS. Common symptoms include cancers, depression, irritability, anger, sluggish liver detoxification and hypothyroidism. Symptoms are often vague because they may involve sluggish detoxification of all the toxic metals and impaired glandular activity. Interestingly, low selenium also seems to impair brain development in the human being. Societies that eat more selenium in products such as wheat and corn, such as Americans and Europeans, often have better developed nervous systems. Most Mexicans, unfortunately, eat mainly the inferior white corn.

TOXICITY OF SELENIUM. Selenium can be toxic if consumed in large quantities in a toxic form. This is very rare in humans, however, unless one is exposed to selenium salts due to

industrial pollution, or in one's occupation or drinking water supply.

Selsun Blue shampoo has a lot of selenium in it. This will cause elevated hair selenium levels. It can cause minor selenium toxicity. If the hair selenium is elevated, ask the client about shampoo. If Selsun Blue is used, have the client reduce it to once a week or less, and the elevated hair reading usually goes away promptly, indicating that toxicity was probably not severe.

HAIR ANALYSIS AND SELENIUM. Selenium accumulates in the hair tissue and can be assessed with hair analysis. The ideal level is about 0.1 mg% or 1 part per million. *Low* hair selenium is very common because selenium is deficient in most people. Selenium is also used up rapidly in the process of detoxification. In addition, on development program, selenium and other trace minerals are sometimes retained elsewhere in the body if they replace or complex with toxic metals, or are being used in some other way. This can cause the hair level to decline, even when it is being supplemented. When this occurs, the level usually rises again on the next hair mineral analysis.

High hair selenium. This is often due to the use of Selsun Blue shampoo, as described above. On retests, it may also be due to an elimination of toxic and bioavailable selenium during a development program.

SELENIUM ONE OF THE 'AMIGOS. Selenium and chromium are lesser members of the '*friends*' or '*amigos*'. These are elements that form toxic compounds, probably oxides, that may stimulate adrenal gland activity by irritating the glands or by some other toxic mechanism. Apparently, the toxic form of selenium cannot be easily converted to a bioavailable form, so the body will eliminate it through the hair during the healing process as part of a development program. If this occurs, the selenium level on a retest hair analysis will rise above the ideal in most cases. On the next test, the level will usually decrease again into the normal range, indicating that the elimination process through the hair and skin is over.

SELENIUM SYNERGISTS. **Vitamins C, E** and others work with selenium as critical parts of the anti-oxidant system of the body. **Iron** is needed with selenium for the synthesis of glutathione peroxidase. **Iodine, manganese, copper** and perhaps other elements are needed with selenium for thyroid hormone synthesis. **Manganese, zinc** and **other trace elements** are required along with selenium for proper functioning of the liver detoxification systems and for mental and emotional balance in the nervous system.

SELENIUM ANTAGONISTS. All of the toxic metals such as **mercury, cadmium, gold, silver, titanium, arsenic, aluminum** and others are antagonistic to selenium for absorption and in their metabolic roles in the body. Interestingly, **sulfates** increase the excretion of selenium. This may be because sulfates assist with detoxification and may work with selenium in some way to help remove toxic metals.

17. OTHER TRACE ELEMENTS IMPORTANT FOR DEVELOPMENT – IODINE, LITHIUM, BORON AND MOLYBDENUM

Victor, age 49, had many symptoms related to obesity. His weight was as high as 350 pounds and he suffered from Barrett's esophagus, a severe form of gastric reflux disease or GERD. He also had a diagnosis of secondary hyperparathyroidism, kidney stones, esophageal ulcers, chronic stiff neck, stress, irritability before meals and an inability to skip meals. He was also anxious and did not enjoy his job.

Victor's first hair analysis was somewhat unusual, with a four lows pattern and a low sodium/potassium ratio. It also revealed high levels of lead, mercury, arsenic and aluminum. Victor read and studied about development on the internet and became thoroughly committed to the program. He especially followed the diet without wheat and sugar, and with plenty of steamed vegetables. Within eight months, his weight decreased by 150 pounds. The next time he visited his doctor, the Barrett's esophagus was completely healed, much to the doctor's surprise. The hyperparathyroidism also improved, as did most other symptoms. Weight loss is simple and safe for almost everyone on a properly designed development program. If one follows the diet and the targeted supplement program faithfully, most who are significantly overweight can safely lose 100 pounds or more, often within a year or even less.

IODINE

Iodine is a slightly acid-forming mineral that may be referred to as the **thyroid** mineral. However, every cell of the body utilizes iodine in some form. The main problem involving iodine today is not a simple deficiency, but environmental contamination with iodine antagonists. This is explained below.

SOURCES OF IODINE. All fish, seafood and sea vegetables contain plenty of bioavailable iodine compounds. Other sources are quality eggs, onions and garlic. A less than ideal form of iodine is added to all table salt in most Westernized nations. Other sources of iodine include natural thyroid glandular products, thyroid extracts such as Westroid and Naturthroid, and mineral supplements containing iodine. Sea salt sold in health food stores is an unrefined salt that may or may not contain added iodine. Most do not need added iodine, as they contain a little iodine naturally.

Environmental sources include some iodine-containing soaps and antiseptics, although most have unfortunately been removed from the market. Radioactive iodine is produced by all nuclear power plants and A-bomb tests, and it is used medically to destroy overactive thyroid glands. This is a barbaric treatment for hyperthyroidism that is never required, in our experience.

THE PROBLEM OF THE IODINE ANTAGONISTS. Fluorides, bromides and chlorine compounds in the food, air and water compete with iodine for absorption and utilization in many enzymes. This is the major reason for iodine deficiency today, even in those who eat iodine-rich foods and use iodized salt. The antagonists are creating severe iodine deficiencies in most Americans and in some Europeans. Let us examine this situation.

- *Fluorides.* These are the worst iodine antagonists. The main source today is fluoridated water supplies. Artificial fluoridation with toxic fluoride compounds for over 50 years has contaminated all the groundwater in America. This means it is in the irrigation water used to grow food. Also, foods prepared with water, which include breads and thousands of other prepared foods, often also have high levels of fluoride in them.

Ignorant public health and water authorities keep adding more fluoride to the water supplies, even though people now get too much of it. Adding it to toothpaste, mouthwash and dental fluoride treatments are even more toxic and insane. More information about the many serious problems associated with adding toxic fluorides to drinking water and to products such as toothpaste and mouth washes is available at www.drlwilson.com.

- *Bromine and bromides.* Bromine is another highly toxic element used, by law, to help bread rise. Previously, iodine was used in bread-making. Foolish health authorities believed that people might get too much iodine so they now force bakers to use bromine instead. This is another reason to avoid most baked goods if one values one's health.

Often, when iodine is supplemented, one eliminates bromine from the body. This can be measured in the urine or perhaps in the hair. This occurs because iodine replaces the bromine in enzyme binding sites. Health often improves as this occurs.

- *Chlorine and chlorinated compounds such as chloramines.* Another insane practice is the addition of highly toxic chlorine to most water supplies. A much safer alternative is hydrogen peroxide or ozone sanitization of water, which is used in some locations. Chlorine is also used to whiten various food products, at times, such as flour and perhaps some sugars. It is also used widely in industry as a bleaching agent and an anti-bacterial and anti-viral agent used to sterilize or sanitize many products. Thus most people are exposed to large amounts of toxic chlorine compounds every day.

SYMPTOMS OF IODINE DEFICIENCY. These include:

- *Fatigue, frustration, depression, hypothyroidism and hypoglycemia.*
- *Cold hands and feet, slow oxidation and often sympathetic dominance pattern on a hair analysis.*
- *Weight gain and disorders of calcium metabolism due to their thyroid imbalances.*
- *If iodine deficiency occurs during gestation or in early life, it causes cretinism.* Symptoms include a short stature, mental retardation and a general delayed development syndrome. While the full-blown condition is rare, mild forms of it are common, due mainly to iodine antagonists in the environment.
- *Possibly goiter or a swollen thyroid gland.* This is quite common, but hard to diagnose in many people unless one carefully palpates the thyroid gland. It usually clears up easily with iodine supplementation.
- *Irritability, anxiety and infertility in women and perhaps in men.*

- *Electrical imbalance in the cells, brittle or falling hair, difficulties with the skin and nails, and at times pneumonias and other respiratory problems.*
- *Other.* Dr. David Brownstein, in his book entitled ***Iodine, Why You Need It, Why You Can't Live Without It*** (2008) mentions many other symptoms that have responded to iodine treatment. These include ADD, atherosclerosis, autoimmune problems, breast cancers, Dupuytren's contracture, excess mucus production, fatigue, fibrocystic breasts, hemorrhoids, headaches, hypertension, infections, infertility, keloid scars, liver diseases, ovarian diseases, parotid duct stones, Peyronie's disease, prostate disorders, sebaceous cysts, thyroid disorders and vaginal infections. Lower iodine levels are also associated with a generally higher mortality rate.

IODINE TOXICITY. Too much iodine can inhibit thyroid gland activity. However, an overdose from food sources is rare. Japanese people who eat a lot of fish and seaweed often consume high amounts of iodine with no apparent ill effects at all. The most common type of overdose is from radioactive iodine. Causes include nuclear fallout in the air from power plants or A-bombs tests, or from medical uses of RAI. Symptoms include all of those associated with destruction of the thyroid gland, as well as thyroid cancers.

DETECTING IODINE IMBALANCES. As with all the trace minerals, accurate detection of deficiencies is not that easy. Dr. Brownstein recommends an iodine loading test in which the person is given a dose of Iodoral and then urine is collected for 24 hours. The degree of deficiency is measured by how much is absorbed from the loading dose. A more crude test involves painting an iodine solution on the skin and observing how quickly it is absorbed. This test is not considered nearly as accurate.

Most people in America, Europe and inland Africa and Asia need more iodine, especially slow oxidizers. Using kelp, as explained below, there is little danger of taking too much. Therefore, I do not feel the need to test for iodine.

Iodine and hair mineral analysis. Iodine is often not read on hair tests. The reason, I am told, is difficulty in measuring it accurately.

IODINE SYNERGISTS. **Selenium** is probably the most important synergist. The conversion of iodide into iodine in the thyroid gland involves an oxidation reaction that requires an enzyme called TPO or thyroperoxidase. It also requires hydrogen peroxide. If too much hydrogen peroxide is left in the thyroid, however, it leads to Hashimoto's disease, a common thyroid problem. Selenium helps control the level of hydrogen peroxide. It is needed to make glutathione peroxidase, whose function, among many others, is to detoxify hydrogen peroxide after it has done its job in the thyroid gland.

Selenium is also required for iodothyronine deiodinase, the enzyme needed to convert the relatively inactive T4 to the much more active form of thyroid hormone - T3. Any deficiency of selenium in the body will impair T3 production and thus cause hypothyroidism symptoms, even if the body is producing plenty of T4. **Manganese, magnesium, copper** and perhaps other nutrients, assist iodine in connection with thyroid activity. Many other nutrients work with iodine in other enzymes.

SUPPLEMENTING WITH IODINE. In America and Europe, iodine deficiency may be causing an epidemic of obesity, cancer, thyroid problems and others. Solutions are to:

- *Eat some fish or sea vegetables.* However, limit fish intake to only twice weekly, due to mercury contamination, and eat only small fish as these contain less mercury, in general. The best may be sardines or salmon, even in cans, as these contain the most omega-3 fatty acids, which most people need. Kelp is also an excellent iodine source.
- *Avoid iodine antagonists.* This means eating few baked goods and drinking only distilled or spring water. Carbon filters take out some chlorine, but only as long as they are quite clean. They will not remove most fluorides and bromides. Only distilling water or the use of reverse osmosis will remove most fluorides and bromides. Never drink reverse osmosis water, however, because it does not appear to hydrate the body well enough. It will also leach vital minerals from the body. Limit the drinking of distilled water to a few months at the beginning of a development program because it, too, will begin to remove too many vital minerals from the body if it is used for extended periods of time.
- *Take an iodine supplement such as kelp.* Kelp is an excellent supplement because it:
 - Contains many trace elements that our bodies need, in addition to iodine. It thus acts as a very high-quality general mineral supplement.
 - Contains alginates. All products from the sea contain some toxic metals, as does kelp. However, kelp, among all the sea vegetables and other sea products, contains the most substances that bind and remove the toxic metals in the kelp.
 - Very inexpensive and available without a prescription.
 - A natural food. This means it is safer, easily absorbed and easy for the body to regulate how much it will absorb. In contrast, single-mineral products such as Iodoral or Lugol's solution, if used for more than a month or so, can tend to unbalance the body's mineral system by antagonizing or competing with the absorption or utilization of other elements.

Some doctors say that one must give iodine in both the iodide form and elemental iodine forms. However, I am not convinced of this, since food sources may not contain both forms and have nourished humanity for millions of years.

LITHIUM

Lithium is a very alkaline-forming mineral. It may be called the **relaxing** mineral because it helps some cases of bipolar disorder, both the manic and the depressive phases. The main function of lithium seems to be to protect the brain from oxidant and perhaps other kinds of damage. It appears to be a powerful anti-oxidant substance, especially within the brain.

It is thus an anti-aging nutrient for human brains that may slow the progression of diseases such as Alzheimer's disease, other dementias and Parkinson's disease. Lithium may also help generate new brain cells by enhancing DNA replication in the brain. This may be of help with mental development, in particular. Lithium also increases the production of a major brain protective protein called bcl-2 in both human and animal brain cells.

Lithium also appears able to protect against the effects of ischemic strokes. In one study, researchers blocked a brain artery in rats. Some of the animals were pre-treated with lithium for 16 days, while the other were not so treated. The researchers reported that the lithium-treated rats experienced 56 percent less cell death and many fewer neurologic deficits than the controls.

In fact, low-dose lithium is so neuroprotective that some researchers suggest it should be used along with any drug being used for depression, anxiety, or any other mood-altering reason to protect brain cells against any toxic effects of the drugs. Some speculate that lithium may

have other roles as well. Research indicates it may control symptoms of gout and relieve rashes caused by seborrheic dermatitis or dandruff. It may even help prevent diabetes and anorexia.

SOURCES OF LITHIUM. Small amounts of lithium are present in most foods. Modern refined food diets, however, may be quite low in lithium, along with most of the essential trace elements. Safe, low-dose lithium supplements such as lithium orotate are inexpensive and appear to be well-utilized.

DEFICIENCY AND TOXICITY SYMPTOMS. A lithium deficiency may contribute to some cases of depression, manic-depressive disorder and perhaps to some cases of aggressiveness. Lithium deficiency may also be a factor in some cases of Alzheimer's disease and other dementias.

Lithium toxicity is almost always related to high-dose lithium given for bipolar disorder. Symptoms include nausea, vomiting, tremors, confusion, liver problems, delirium, seizures, coma and even death. Patients on high-dose lithium must be tested regularly for elevated liver enzymes, indicating liver irritation or damage. However, toxic symptoms can appear long before liver enzyme levels elevate.

HAIR ANALYSIS AND LITHIUM. An ideal hair level of lithium is about 0.001 mg%. Hair lithium levels may not be that helpful or reliable indicators for supplementation. Those on high-dose medical lithium therapy always eventually show an elevated hair lithium. Lithium appears to both raise or lower the sodium level in the mineral balancing system, and perhaps it balances it. Dr. John S. Carman noted that lithium therapy may help regulate serum calcium and magnesium levels. If this is the case, it could be because it regulates the oxidation rate. Lithium is not used regularly in development for several reasons:

- *It does not appear to be needed as much as many other trace elements such as zinc, chromium, selenium, magnesium and others.*
- *It is found in most natural foods to some degree. If one eats well and takes a digestive aid, supplementation is usually not needed.*
- *Continued usage could be toxic, although it is probably safe if the supplement dose is small.*
- *Lithium appears to be less critical at this stage of human evolution, though it is very helpful for particular conditions and symptoms.*

LITHIUM SYNERGISTS. Lithium synergists in the brain, particularly in the hypothalamus, are too numerous to list. They include **all the vitamins, particularly B-complex vitamins, vitamin C, E** and others. Synergists also include most of the other trace elements such as **zinc, chromium, manganese, selenium** and **iodine**. Lithium is also synergistic with most **hormones** and **neurotransmitters**.

LITHIUM ANTAGONISTS. Antagonists include all **toxic metals, all drugs that affect the brain**, and other substances that oppose lithium utilization in the brain and elsewhere.

BORON

Boron is a very alkaline-forming mineral. It may be called the **plant** mineral because it is

very important for the vegetable kingdom. It appears to be less important for most human beings. The functions of boron in human beings are not well understood. However, it appears to affect the adrenal glands, the stomach and perhaps the skeletal system. Boron is helpful for hot flashes in some women, perhaps because of its effect on the adrenal glands or on the hormonal balance of estrogen and progesterone in some way. Boron, along with lithium, may be an anti-aging mineral.

SOURCES OF BORON. Food sources include meats, most vegetables, nuts, legumes, fruits, wine, cider, beer and bone extracts. Boron is widely used in industry as a cleansing agent, a water softener and an antiseptic. It is also widely used in fertilizers and for some drugs. It was formerly used as a food preservative, but is somewhat toxic. It is also found in enamel, glass, shellac, plastics and is used to shield control rods in nuclear power plants. For these reasons, boron contamination may occur in some water supplies.

DEFICIENCY SYMPTOMS. Deficiency symptoms may include hot flashes, vaginal dryness, low blood sugar and osteoporosis. In plants, boron is a very essential nutrient. Less is known about the need for it in human beings.

TOXICITY SYMPTOMS. Toxicity only occurs due to ingestion of borate, boric acid and other toxic forms of boron. Symptoms include fears, irritability, noise sensitivity and back, leg and chest pain. Others include nausea, vomiting, headache, diarrhea, hypothermia, restlessness, skin loss, kidney damage and if very severe, death. Chronic overload can cause a poor appetite, nausea, weight loss, decreased sexual activity in men, low seminal volume and low sperm count.

HAIR ANALYSIS AND BORON. Hair analysis is helpful to assess boron levels. An ideal hair level is probably about 0.5 mg%. Boron, however, is not used in development science at this time, except for symptoms of hot flashes, and then only when the use of Thyro-complex from Endomet Labs is not effective.

BORON SYNERGISTS AND ANTAGONISTS. Boron synergists include **calcium, magnesium, strontium, cobalt, inositol, choline, vitamins A, D, E and B12**. Antagonists may include **nitrogen** and **phosphorus**.

MOLYBDENUM

Molybdenum is an alkaline-forming mineral that is a **copper antagonist**. It may help eliminate copper through the kidneys, though I am not sure of the route of excretion. Although it is a powerful copper antagonist, Dr. Eck used it very sparingly because it is somewhat toxic. We consider it one of the “amigos”. Also, it does not correct the cause of copper imbalance, but just helps lower copper. For this reason, it can easily cause a low copper level if used for too long or in a careless manner. For both these reasons, it is not used in development science.

FUNCTIONS OF MOLYBDENUM. Molybdenum is found in all human cells. Its many functions are still a topic of research. Most likely they include:

- *An electron transfer agent.* This means it is involved in energy production in the Krebs energy cycle in the cells.
- *A cofactor in at least five redox reactions.*
- *A ligand binding agent.*
- *The oxidation of aldehydes.*
- *Sulfate metabolism, specifically the oxidation of sulfites.*
- *Fat metabolism and purine metabolism (needed for xanthine oxidase).*
- *Detoxification reactions involving SO₄.*
- *Iron and copper metabolism (a powerful copper and perhaps iron chelator).*

In some animals, molybdenum is also required for thyroid activity, but this has not been proven in humans, to my knowledge. Also in animals, molybdenum is required for reproduction. I do not believe this has been proven in human beings.

SOURCES OF MOLYBDENUM. Excellent sources are lamb, sunflower seeds, lima beans, lentils, peas, buckwheat, oats and barley. Others that are not recommended foods include wheat germ, sorghum, pork (a dangerous food due to parasitic infections), soybeans and beef liver. Some molybdenum is found in many natural foods.

Environmental sources. Molybdenum is used in steel alloys, lubricants and red pigments. Human toxicity from these sources, however, is rare.

DEFICIENCY AND TOXICITY SYMPTOMS. Deficiency may be associated with copper toxicity and dental decay. Otherwise, clear deficiency symptoms are not known.

Molybdenum toxicity is called *molybdenosis*. Acute poisoning causes severe diarrhea and, in animals, it can cause coma and death. Chronic toxicity causes copper deficiency symptoms in animals including anemia, alopecia, loss of hair color, growth retardation, bone and joint abnormalities, weight loss, anorexia, osteoporosis, diarrhea, testicular degeneration, dermatitis and gout. Interestingly, copper supplements often reduce gout.

MOLYBDENUM AND HAIR ANALYSIS. An ideal hair molybdenum level is probably 0.005 mg% or 0.05 parts per million. This is quite approximate, however. The significance of the hair level of molybdenum is not clear and more research is needed about this unusual mineral.

MOLYBDENUM SYNERGISTS AND ANTAGONISTS. The main synergists are **iron, sulfur and phosphate (PO₄)** in the xanthine oxidase enzyme system. Other synergists are **zinc, manganese, vitamins B-complex and C,** and **sulfur-containing amino acids** in balancing copper in the body. Other synergists are all the nutrients needed for adequate thyroid function such as **iodine, selenium, manganese** and others.

MOLYBDENUM ANTAGONISTS. A major antagonist is **copper**. **Zinc** is both a synergist and antagonist in certain cases. Other trace elements may compete with molybdenum for absorption. Any toxin that interferes with thyroid activity such as **fluoride** or **chlorine** may be considered a molybdenum antagonist. Any condition that weakens the thyroid gland, and more so adrenal glands, also tends to oppose molybdenum. The reasoning here is that thyroid and moreso adrenal weakness are the most important causes for an elevated copper level in the

body. **Sulfates** (SO₄) and **phosphates** (PO₄) may be other molybdenum antagonists in some situations, though they can be synergists as well.

OTHER TRACE MINERALS

Other trace elements include barium, cobalt, germanium, zirconium, rubidium, strontium, vanadium, tin and others. They are not included in this book for several reasons:

- *They are not as important physiologically.*
- *They are not used in development science.*
- *Less research exists about them.* Perhaps in the future more will be discovered about their use for healing.
- *Most are a little toxic and none are recommended for clinical use at this time.*

CLINICALLY SIGNIFICANT MINERAL RANGES

Almost all hair testing labs list *mathematically-determined* mineral ranges on their reports. These are often standard deviations from an average or mean laboratory value. Dr. Eck preferred a different concept of ***clinically significant ranges***. This idea is important, along with the mineral ratios and patterns discussed in Chapters 23 and 43.

The importance of clinically significant ranges is that optimum health seems to require that certain hair mineral levels be kept at or near ideal levels. Other mineral levels may vary more widely, even in a state of good health. For example, phosphorus must be kept in a tight range in head hair samples. Calcium, in contrast, may vary more widely.

The chart below lists these ranges for adults. Variations occur with children, men versus women and even possibly for various races. However, these are less important for development science at this time. Hair must not be washed at the laboratory for accurate readings.

CLINICALLY SIGNIFICANT HAIR MINERAL RANGES FOR ADULTS

Mineral	Very Low	Low	Decreased	Normal	Sl. High	High	Very High
Calcium	4-7	8-14	15-37	38-80	81-170	170-500	500 +
Magnesium	1	2	3-4.9	5-12	12.1-24	24-60	60 +
Sodium	1	2-3	4-19	20-40	41-80	81-250	250 +
Potassium	1	2-4	5-7	8-15	16-30	31-100	100 +
Zinc	1-3	4-10	11-15	16-20	21-30	31-60	60 +
Iron	hidden		hidden	1-2	2.1-5	5.1-10	10 +
Copper	< 0.6	0.7-0.8	0.9	1-2.6	2.7-5	5.1-20	20 +
Manganese	hidden		hidden	0.03-0.05	0.51-0.1	0.11-0.5	0.5 +
Chromium	0.01	0.02-0.04	0.05-.08	0.09-0.14	0.15 +	contamination	
Selenium	0.01	0.02-0.04	0.05-0.08	0.08-0.12	0.12 +	or biounavailable	
Phosphorus	6-8	9-11	12-15	16-20	21-30	30 -60	60 +

18. TOXIC METALS

Jim, age 55, was a bright, energetic doctor of Ayurvedic medicine. He was also a friend. He consulted me because he was having difficulty focusing his mind. Recently, while driving in the right lane of a freeway, he had accidentally followed another driver off an exit ramp. He knew the road and knew that it was not his exit.

Jim's hair levels of lead, cadmium, arsenic and aluminum were among the highest I had ever seen. I knew that Jim was a careful eater and had no obvious exposure to metals. The source turned out to be very high-quality Ayurvedic herbs imported from India. He had taken them for many years under the guidance of a well-respected physician in the Western USA.

I advised Jim that he must do something quickly to reduce his toxic metal levels. Jim, however, does not like Western sciences and ignored the advice. His dementia soon worsened until he could no longer function on his own, and he now lives disabled in a nursing home.

Toxic metals have no known positive role in the body. They are everywhere and affect everyone. They have become a major cause for birth defects, ADHD, autism, disability, aging, mental illness, divorce, criminality and all the killer diseases of our day. The study of toxic metals is sadly mostly ignored in post-modern medical care. Most holistic doctors also do not pay enough attention to them, or they would all begin with hair analysis, sauna therapy and coffee enemas in an attempt to reduce the load in everyone.

All of the toxic metals are extremely acid-forming, physically toxic and neurotoxic. This chapter begins with general information that applies to all the toxic metals. The second part of the chapter discusses the sources and symptoms of each of the major toxic metals. Additional information about each toxic metal is in the *Mineral Reference Guide* in Appendix II.

THE TOXIC METAL HAZARD TODAY

Today, everyone has excessive levels of toxic metals. In fact, humanity today is exposed to the highest levels of them in recorded history, up to several thousand times higher than even several hundred years ago. The main reason is industrialization. The toxic metals are persistent and cumulative. The late Dr. Henry Schroeder, MD, a world authority on minerals, wrote that “most organic substances are degradable by natural processes. However, no metal is degradable...they are here to stay for a long time”. Toxic metals are a major cause of inflammation, infection, irritation and tissue damage because they can and do:

- *Replace nutrient minerals in enzyme binding sites.* This, in turn, inhibits, overstimulates or otherwise alters the activity of the affected enzyme. This occurs with trillions of enzymes. An affected enzyme may operate at 5-10% of its normal activity, or it may function at twice the normal rate. Either way, this can contribute to every imaginable health condition.
- *Replace other minerals in tissue structures.* These tissues, such as the arteries, joints, bones and muscles, are weakened and slowly destroyed by the replacement process.
- *Cause irritation, necrosis, inflammation, atrophy and other toxic effects.*
- *Support development of fungal, bacterial and viral infections that are difficult or impossible to eradicate until the toxic metal is eliminated.*
- *“Short-circuit” and otherwise damage the brain and nervous system in many ways, leading to most mental and neurological disorders.*

MODERN FOODS AND TOXIC METALS

The danger of toxic metals in the environment is greatly aggravated by 1) the low overall mineral content of most of the food supply and 2) contamination of the food supply. The way this works is that ***an abundance of essential minerals in the diet protects the body against toxic metals.*** This occurs because minerals are needed for enzyme systems. If the *preferred* minerals are not available in the food, the body picks up whatever minerals it can from the food, air and water as substitutes. Causes for the low trace mineral content of most foods include:

- *Much of the world’s crop-growing areas have been farmed for hundreds of years in ways that deplete the soil of vital minerals.* Newer farming practices may be even worse.
- *Hybrid crops grown today are designed for today’s mineral deficient soils and contain much less vital minerals than crops grown even 50 years ago.*
- *Toxic sprays used the world over damage soil microorganisms needed to help plants absorb minerals from the soil.* Organic food is a big step in the right direction for this reason.
- *Once crops are harvested, food refining and processing almost always reduce the trace mineral content of the food.* For example, whole wheat flour, when milled to make white flour, loses 40% of its chromium, 86% of its manganese, 89% of its cobalt, 78% of its zinc and 48% of its molybdenum. Refining cane into sugar causes even greater losses.

In fact, according to Weston Price, DDS, author of *Nutrition and Physical Degeneration*, primitive man often ate 5 to 11 times the amount of the essential minerals in his diet as modern man. Dr. Price lived over 100 years ago. Today, I would guess modern man is eating half again as much vital minerals in the same food items due to the reasons listed above, many of which are new. ***The term 'empty calories' aptly describes most of our food today, not just the white flour and white sugar products.***

Causes for toxic metal contamination of food, including even organic food, include:

- *Irrigation water is often contaminated.*
- *Sewage sludge, fish meal, seaweed and other contaminated products are commonly used as fertilizers, even at organic farms.*
- *Food grown near highways or downwind of industrial plants may contain too much lead and contaminants.* Even organic home gardens may be contaminated if, for example, old house paint containing lead leaches lead into the soil.

- *Food preservation, processing, refining, transportation and packaging usually add contaminants to the food to some degree.* For example, copper, aluminum and other toxic substances are found in the water used to produce breads, cooked rice, cakes, pickles and thousands of other prepared foods. Most companies, even health food companies, only filter the water with carbon. Carbon does not remove most toxic metals.

Aluminum is often found in table salt used in food processing. Antimony may be found in cardboard juice, soup and milk containers. Iron, bromides, fluorides and other metal compounds are often added to food during processing.

Impaired digestion adds to our toxic metal woes. Impaired digestion and reduced absorption of essential minerals, discussed in Chapter 26, creates even more mineral deficiencies. The bodies are then even more prone to absorbing toxic metals.

AIRBORNE SOURCES OF TOXIC METALS

In addition to water and food-borne toxic metal poisoning, air pollution is a less important, but sometimes a critical source of toxic metals. Common sources include:

- *Aircraft exhaust.* Burned high in the atmosphere, aircraft fuel residues often contain some metals and deposit everywhere, affecting everyone on earth.
- *Coal-fired power plants.* Burning coal can release mercury, lead, cadmium and other toxic metals. Coal-fired plants in America have scrubbers, but all the plants in India, China, Mexico, Malaysia, Singapore and hundreds of other nations may not, and it can affect us all.
- *Oil.* Iranian and Venezuelan oil are high in vanadium. Some other oil is excessive in toxic sulfur compounds. Tetraethyl lead was added to gasoline for many years. Residues are present on pavement and may settle on buildings, cropland and elsewhere. Today, manganese is added to gasoline. This is quite an improvement over lead, but is not helpful, either. There is no need for these compounds in gasoline today.
- *Radioactive minerals.* Uranium exposure is largely from airborne sources such as nuclear tests, accidental nuclear releases and radon gas in some sealed buildings.
- *Incineration can be clean.* Older methods of incineration released toxic metals into the air. Scrubbers and higher temperature incineration take care of this today. However, few controls are used with incinerators in most developing nations.
- *Smoking.* Cadmium, arsenic, lead and nickel are in pesticides sprayed on most tobacco and marijuana, even “organic”. Cadmium is used in cigarette papers to keep them lit.

OTHER SOURCES OF TOXIC METALS

Prescription and over-the-counter drugs. Many patent drugs contain toxic metals. Cipro (fluoroquinolones) and Prozac (fluoxetine) are fluoride-containing chemicals. Thiazide diuretics contain mercury. These include Maxzide, Diazide and many others. Antacids such as Ryopan, Gaviscon, Maalox, Mylanta and many others are very high in aluminum.

Thimerosal or sodium ethylmercurithiosalicylate, a mercury-containing preservative, is used in most vaccines, including flu shots. Independent evaluation of a large study that is part of the Centers For Disease Control Vaccine Safety Datalink concluded that “children are 27 times as likely to develop autism after exposure to three thimerosal-containing vaccines than those who

receive thimerosal-free versions”. Although the studies were taxpayer-funded, the results are being intentionally withheld from the public.

Vaccines given to babies and young children can be a major source of toxic metals. The toxic metals are incorporated easily into the brain and other vital organs during early childhood and cause serious nervous system problems in most cases.

Vitamin and mineral preparations. Fulvic acid, humic acid and other supplements from “natural mineral deposits” frequently contain some toxic metals. Clay products such as bentonite, zeolite, azomite, montmorillonite and others usually contain high amounts of aluminum and should be used for a limited time only, if at all. Geritol contains too much iron and many prenatal vitamins contain a lot of copper. While these are not technically toxic metals, most people have too much and the amount in the vitamins is excessive for them. Alkaline water machines contaminate the water with platinum, titanium and other extremely toxic metals.

DIRECT CONTACT SOURCES

Anti-perspirants and many cosmetics contain aluminum. Dental amalgams contain mercury, copper, cadmium and other metals. Some dental bridges, and especially older crowns, contain very high amounts of nickel, an extremely toxic metal. Prostheses and pins used to hold bones together may contain nickel and other toxic metals. Copper intra-uterine devices, if left in place for years, may release a lot of copper into the body. Soaps, body lotions and other cosmetics often contain toxic compounds. A few hair dyes and even lipsticks contain lead. Household lawn and garden chemicals may contain lead, arsenic and other compounds. Mercury-treated seeds and arsenic-treated wood are other common sources of toxic metals.

Occupational exposure is important for millions of industrial and other workers. Among the most toxic occupations are the building trades, particularly plumbers, electricians, painters, welders and others. Auto repair, printing, ironwork, farming and selected other occupations also may expose one to high levels of toxic metals. Workers need to wear gloves and masks, and take other precautions when handling inks, metals and other toxic materials. Unfortunately, most occupational exposure occurs without the knowledge of either the worker or even the employer, in some cases. Happily, the world has improved a lot in this area in the past 50 years. An important reason for this is the development of hair mineral testing for metals.

CONGENITAL TOXIC METALS

Congenital means present at birth. Hair mineral analyses of newborns and infants usually reveal high levels of toxic metals in **all babies**. This is very, very unfortunate. Most have never eaten regular food or even drank tap water. The only explanation is that these infants receive their toxic exposures in utero during gestation. Indeed, hair analyses of the mothers confirm the presence of the metals in the mothers, though often not on the initial hair tests. The mother must remain on a development program long enough to eliminate the metals, at which time they will be revealed on repeat hair mineral analyses as the body releases them.

Congenital toxic metals is one of the most important subjects of our day. This book only touches briefly on it in a few places. However, it is an important cause of childhood cancers, autism, ADD, ADHD and children’s infections. Toxic metals children are born with may also cause delayed development syndromes, higher birth defect rates and high infant mortality rates. This vital topic deserves its own separate book.

DETECTING TOXIC METALS IN THE BODY

The detection of toxic metals is not easy. Indeed, no method of detection that I am aware of will detect anywhere near all of them scattered throughout the body. Fortunately, detection of toxic metals is not that important in development science. Instead, *we assume everyone has excessive amounts of all of them*. Development programs can slowly remove **all** the toxic metals, along with several hundred or more toxic chemicals.

Common detection methods. *Blood, urine and feces tests.* Blood tests are mainly helpful for acute exposures because many toxic metals are removed quickly from the blood and stored in the tissues, where they do less damage. Simple urine or feces tests are not too helpful as they depend a lot on the last meal one ate, for example.

Urine challenge tests with EDTA, DMPS or other chelating agents are not much better. In this test, the doctor gives a chelating agent that binds to the metal the doctor is looking for. The patient collects his urine for up to 24 hours afterwards, which is analyzed for toxic metals. *This will still miss most toxic metals* because the metals are lodged deep within organs and tissues and are not reached by the chelating drug. Most chelating agents only circulate in the blood, so they miss most toxic metals hidden in organs and tissues such as the liver and the brain.

Testing with kinesiology, pendulums, electrodermal screening, radionic machines and other methods can help, but are not considered too reliable, as they depend a lot on the skill of the operator, for example. MRI testing for toxic metals is a future technology that is accurate.

DETECTION OF METALS WITH HAIR ANALYSIS

Hair mineral analysis reveals toxic metals that are deposited in the skin and hair tissue during the time the hair grew. In other words, it is a **biopsy** or tissue reading, unlike blood, urine or feces testing for heavy metals. This seems to be an advantage, in many cases. For accurate toxic metal assessment using a hair mineral test, one **must** combine 1) *elevated toxic metal levels* and 2) *poor eliminator levels*. The latter indicate hidden toxic metals. Poor eliminators are explained in more detail on page 274, and in much more depth in an article of the same name at WWW.DRLWILSON.COM. It is one of the most interesting hair analysis patterns.

Using the combination of elevated toxic metal levels and poor eliminator patterns, one can obtain a decent, but not a perfect indication of some of a person's or an animal's toxic metal problems. Repeated hair tests during a development program will reveal more toxic metals as they are thrown off by the body into the hair and skin.

In 1979, The United States Environmental Protection Agency reviewed over 400 studies of the use of hair analysis for toxic metal detection. They concluded that "hair is a meaningful and representative tissue for (biological monitoring for) antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, vanadium and perhaps selenium and tin."

Ideal toxic metal levels. Earlier editions of this book listed the ideal ranges for the toxic metals that I use. However, these are no longer correct due to newer research and improvements in the complete development programs that allow us to reduce the toxic metal levels further than in the past.

Since the ideal toxic metal levels are changing, for the most current values please visit WWW.DRLWILSON.COM. Scroll down near to the bottom of the home page. On the right side, click on the article entitled ***Human Hair Mineral Levels – Ideals, Ranges, Toxicity And Poor Eliminators***.

Warning: *Ideal hair mineral values can vary between laboratories.* This is because most hair testing labs wash the hair, some washing it more than others, and with different chemicals. This definitely affects the readings, and is confusing for doctors. I currently recommend only Analytical Research Labs for hair testing, as they do not wash the hair at all. However, toxic metals are less affected than the the more water-soluble electrolytes (Ca, Mg, Na, K, & P).

TOXIC METALS AND DISEASE STATES

Many diseases are simply metal toxicity. Toxic metals can contribute to any imaginable symptom or illness. Many cases of diabetes, cancer, multiple sclerosis, Parkinson's disease and many others may be mainly toxic metal poisoning. Let us use diabetes as an example. Iron, manganese or other metals can replace zinc in the pancreas. This will impair the production and secretion of insulin. Others may cause the production of a lower quality insulin that is less effective in regulating blood sugar, causing so-called "insulin resistance".

Combinations of toxic metals can be even worse. Most people have too much of up to two dozen toxic metals. Symptoms are often due to combinations of metals acting on the body in many ways at once. This can cause many "varieties" of cancers, heart disease, diabetes, pain syndromes, arthritis and other so-called "diseases".

Toxic metals cause aging. Toxic metals slowly deactivate enzyme systems, weaken body structures and have other degenerative effects. The process quickly becomes a vicious cycle. As more of the toxic metals accumulate, digestion and absorption of the essential minerals worsens. This causes the body to replace them with more toxic metals. Also, as the metals build up, the body's ability to eliminate them decreases, causing even faster rates of metal buildup. This results in death unless the cycle can be reversed. In a sense, everyone dies of toxicity, even if it is called cancer, heart disease or kidney failure.

Toxic metals and gene expression. Genetic defects may be due to toxic metals. The gene may be okay, but the metal interferes with gene expression. This type of defect is called a *polymorphism*. An article in the *American Journal of Clinical Nutrition* (2002, 75:4;616-658) discussed this hidden cause of genetic defects.

For example, zinc is required for RNA transferase, a key enzyme in gene expression. Not surprisingly, zinc deficiency and its replacement by cadmium, perhaps, is associated with neural tube defects and other birth defects and developmental delays.

Removal of toxic metals. Chapters 5, 44 and 45 discuss this extensive topic.

INDIVIDUAL TOXIC METALS - LEAD

Lead may be called the ***violence and horror*** toxic metal. It is the most researched toxic metal and has been mined and used for thousands of years. Common sources of lead include:

- *Printing, inks, lubricants, paints and dyes.*
- *Gasoline.* Lead was added to gasoline for over 50 years. High levels may still be found on some city streets and city buildings. Lead-containing dust may blow around on windy days.
- *Ceramic dishes from other nations may contain leaded glazes that may scratch off or chip off into the food.*
- *Pesticides.* These are sprayed on most agricultural crops. Lead arsenate is a common one.
- *Cosmetics and skin care products.* These can include lipstick and dark hair dyes.

Symptoms. Lead is associated with over 100 symptoms. Of all the toxic metals, lead has been studied most extensively, perhaps because the dangers of lead poisoning have been known since biblical times. Lead replaces calcium in the body, leading to problems ranging from thyroid and adrenal problems to nervous system disorders and many neuromuscular symptoms. Conditions such as Parkinson's disease, Alzheimer's disease, osteoporosis and other types of bone diseases are often related to lead toxicity to some degree.

Anemia. Lead causes an anemia that can be fatal, as well as epileptic seizures, tremors, reproductive disorders, glandular problems, tooth decay and much more. Lead also causes severe mental and emotional symptoms. These include a decline in IQ and other measures of intelligence in children and adults.

Children and lead. Lead is a severe problem for poorly-nourished children because their growing bodies need a lot of calcium. When calcium is deficient or if the environment is high in lead, it easily replaces calcium in the body. Also, lead passes easily through the placenta from mother to child, causing congenital problems including birth defects in children. It is also associated with ADD, ADHD, autism, delayed development and practically every other childhood mental and even physical problem.

Interestingly, high lead rarely shows up on early hair tests. This may be because it replaces calcium in the bones, where it is held in place tightly and not easily released. Later, during development programs, the lead level will often rise on a hair test as the lead is released from the bones or other tissues.

Lead and violence. Lead is intimately connected with violence on earth. Lead is used in bullets, and those who make and use bullets can become toxic with lead. This can cause or worsen a violent tendency in some cases. Lead affects children this way the most and is responsible for much of the childhood hyperactive behavior at deep levels. Lead replaces calcium and even magnesium and zinc, which are the sedative elements. This means that the brain is lacking in these essential calming minerals.

Lead and horror. Cadmium and lead are associated with feelings of horror and disgust. Those who perpetrate horrible or disgusting crimes are often high in these toxic metals.

Lead in history. *Beethoven's Hair* is an investigation of lead poisoning that was found in a lock of hair from the famous composer, Ludwig Von Beethoven. The Roman empire may have decayed, in part, due to poisoning of the people with lead due to the use of lead water pipes.

MERCURY

Mercury may be called the *mad hatters* toxic metal, as it was used in hat making 150 years ago and caused a form of madness, though not a violent type of mental disorder. It is even more widely dispersed than lead, perhaps. Major sources of mercury include eating contaminated fish, dental amalgams, congenital mercury that comes from one's mother during gestation, and a few other environmental and occupational sources.

Fish. *All fish is toxic with mercury.* For the latest report on this, see the report *Mercury in Fish, Bed Sediment, and Water from Streams Across The United States, 1998-2005* by the US Geological Survey, Scientific Investigations Report 2009-5109. The hair tests of everyone who eats a lot of any fish reveal high mercury. Some rivers and streams are better than others, but figuring out which are best is nearly impossible. Small fish have less mercury. Sadly, I can only recommend eating a few small, cold-water fish such as salmon and sardines, no more than

twice weekly. Large fish like tuna concentrate mercury a million times or more and are basically poisonous today for this reason alone. The federal government recently issued a warning that pregnant and lactating women should avoid tuna, shark, king mackerel, mahi-mahi, ahi and sashimi used in sushi. *Sushi is one of the worst dishes because it often combines raw fish (parasitic and other infections), with tuna, mahi mahi or ahi, and nori (mercury toxicity).*

Shellfish worse than ocean fish. In addition to mercury, most shellfish contain excessive cadmium, arsenic and other toxic metals. *Please do not eat any shrimp, muscles, crab, scallops, lobster, oysters, eel or other shellfish.* The problem is just getting much worse in most areas.

Dental amalgams. These are slowly being banned or phased out. However, millions are still placed in people's mouths each year in America and elsewhere. The mercury slowly leaches out into the body every time one takes a bite of food. This outdated method of dental repair needs to stop now. It is one of the worst features of so-called modern medical care.

Do not remove amalgams with active cancers. If you have dental amalgams, have them removed as soon as possible. The exception is if one has active cancer. Some mercury will be vaporized and absorbed during removal, no matter how careful and knowledgeable the dentist is. The extra toxicity has caused the death of a few cancer patients. Therefore, if cancer is active, reduce its activity with the Kelley metabolic program, Protocol or some other method first before removing amalgams. Chapter 35 discusses cancer in much more detail.

Other mercury sources. Mercury is used in mining, fungicides, paper-making, pesticides and even contact lens solutions and other OTC remedies. Air pollution from factories, old incinerators and coal-fired power plants spew mercury into the air. American power plants have scrubbers to remove most mercury, but many other nations do not use them due to their cost. The mercury blows from nation to nation, landing in waterways and on food crops everywhere, poisoning the entire world with mercury. This is sad but true.

Mercury symptoms. These are extremely varied. Mercury particularly affects the kidneys, liver, brain, endocrine glands and muscular system. However, it can affect any organ and system of the body. Most neuromuscular diseases such as multiple sclerosis, most mental illness and hundreds of other conditions are related to mercury toxicity. A list of common symptoms of mercury toxicity are given in *The Mineral Reference Guide* in Appendix II.

Mercury and the mind. Mercury enhances thinking speed in many people. It may have an adaptive role in some way. Also, to release mercury it is helpful to slow the mind and be willing to surrender or change one's mind. This is a spiritual exercise, mainly, that will assist mercury removal. Otherwise, elimination can be slow and often causes many symptoms.

NICKEL

Nickel is a hard and very toxic metal. It can be called the *cancer* metal. It is found in some metal dental crowns and in dental wires used in bridges and braces. Have any nickel dental materials removed at once. **I suggest avoiding all metal braces on the teeth!**

Nickel is also used as a catalyst in the manufacture of margarine, commercial peanut butter, and other food products made with hydrogenated oils.

Rooibos tea, or red tea, is very high in nickel. This tea is often part of the *cult diet* or rape diet. This important topic is explained in an article at WWW.DRLWILSON.COM.

Nickel is found in small amounts in alcoholic beverages, hydrogenated oils found in commercial peanut butter, margarines, including soy margarine, and vegetable shortening. It can

contaminate wells and other waters supplies, as can all the toxic metals. Nickel fumes that are accidentally inhaled are also very toxic and associated with the development of lung cancer. Cigarette smoke and other types of smoke may contain some nickel. Nickel is also used for plating jewelry. Some women's skin, for example, reacts with metals such as nickel and silver and causes it to come off and leave a mark on the skin. This can be avoided in most cases by painting the part of the jewelry that contacts the skin with clear nail polish or clear polyurethane varnish. Jewelry that pierces the body may release more nickel. Steel workers and those in a few other occupations may be exposed to nickel as well.

Symptoms of nickel toxicity. Nickel is subtle in its toxicity. It is associated mainly with depression, lung problems and cancers. It is an enzyme inhibitor, as are all the toxic metals, and nickel can replace vital minerals in enzyme binding sites.

ALUMINUM

Aluminum is the *soft in the head* metal because it is a soft metal that affects the brain. It is very widely distributed in the environment in industrialized nations. Common sources are:

- *Antacids and antiperspirants.* Most contain aluminum compounds. Beware of “natural crystal deodorants” and “deodorant stones”, as these often contain a lot of aluminum and can be quite toxic, no matter what the manufacturer or sales person may claim.
- *Cosmetics often use aluminum as a base.* It gives makeup a sparkly look.
- *Tap water and all prepared foods made with tap water.* Aluminum, at times along with copper, chlorine and fluoride, are added to almost all municipal water supplies. Aluminum causes dirt to settle out of the water to clarify it. Alternatives exist for all these toxic practices.
- *Table salt.* Aluminum is added to this mineral-deficient product as an anti-caking agent.
- *Aluminum cans, foils, and other packaging can cause some aluminum to rub off into the food unless the can or package is coated on the inside.*
- *Uncoated aluminum cookware.* Some aluminum will leach from this common restaurant cookware. Cooking acidic foods such as tomatoes in it is the worst. Steel spoons or spatulas used on aluminum cookware may cause significant etching of aluminum to occur into foods.
- *Handling aluminum in building materials, household items, tapes, insulating materials and other products will cause a little to rub off and be absorbed through the skin.*
- *Herbs such as peppermint, spearmint and wintergreen are naturally high in aluminum.*
- *Food grown on clay soils can contain high amounts of aluminum.*
- *Food items or drugs processed with aluminum machinery can become contaminated with aluminum.* Many dry animal feeds commonly are contaminated for this reason, as well.

Aluminum toxicity symptoms. The skin, the nervous system and the digestive tract are often most affected. Aluminum toxicity can affect memory and cognition, and is associated with some dementias. I have seen memory loss in teenagers that improves dramatically when the aluminum is removed with a development program. The sources of aluminum might be too much acidic soda pop in aluminum cans and lots of salty junk food. Aluminum is an astringent and used in medications to calm the stomach. Too much, however, is very toxic for the intestine. It is effective as an anti-perspirant because it is a drying agent and appears to inhibit sweating. Reducing sweating is an unhealthy effect of aluminum, however.

Aluminum is one of the easier metals to eliminate from the body with development programs. Lead, mercury, cadmium, arsenic and nickel take longer to be removed.

FLUORIDE

Fluoride may be called the *bone destroyer*. A tiny amount in food can be helpful for the bones. However, today everyone in America and Great Britain, gets far too much. The toxic dose is also very close to any therapeutic dose. The main source is adding fluorides to water supplies. The source of the fluoride is often smokestack effluent from plants that make fertilizers or refine aluminum and uranium. This waste product also adds a little cadmium, lead, benzene, radiation and other toxic chemicals to your tap water. Water fluoridation has been shown to be ineffective against tooth decay around the world, and has been phased out in almost all nations except America and Great Britain, where powerful lobbies hold sway over health authorities.

Other sources are fluoridated toothpastes and mouth washes, and fluoride treatments done at dental offices. These may be given to children without parental consent. All are very toxic and unnecessary for tooth decay prevention. Fluoride added to drinking water has found its way into all the groundwater, the food and the food chain in America and Great Britain. The idea that more is needed is insane, in my view. Studies indicate that some foods, such as reconstituted fruit juices and baby foods, can have as much as 40 parts per million fluoride. A 'recommended safe level' in drinking water is 1 ppm, which is too high, according to many studies.

Symptoms of fluoride toxicity. Fluoride is a powerful enzyme inhibitor. It replaces iodine in the thyroid gland and it forms calcium fluoride in the bones, which weakens them. A very common symptom is *fluorosis*, a brown discoloration and brittleness of the teeth. More serious symptoms include an increased risk of hip and other fractures, higher incidence of cancers in areas with fluoridated water, and a higher incidence of birth defects such as Down's syndrome. Everyone in America has too much fluoride in their bones and elsewhere in their bodies as a result of stupid public health policies.

Another extremely common symptom is hypothyroidism from fluoride's effect on iodine metabolism. A very unfortunate symptom is a lowering of the I.Q. of many people. This may have to do with iodine as well, since low iodine affects every organ of the body, not just the thyroid. Fluoride poisoning also has to do with cancer, other neuromuscular conditions, nervous system imbalances and bone diseases. Fluoride also decreases melatonin secretion and has other neurotoxic effects. Any mineral that interferes with calcium and iodine metabolism will have significant neurotoxic effects. I have mountains of research on the dangers of fluorides in the water, and it is amazing that the dental and public health community still believe the old lies that it decreases cavities and is safe. The recent research just does not support these ideas.

Fluoride is corrosive. Boiling fluoridated water in aluminum pots increases the etching of aluminum 600%. Fluoride in the drinking water also increases leaching of lead from solder in water pipes and increases lead toxicity. The only water free of it is distilled, RO or spring water. RO water, however, is not suitable for drinking as it does not appear to hydrate the body nearly as well as a good quality spring water or as well as most distilled water.

CADMIUM

Dr. Eck called cadmium the *pseudo-masculine* mineral. It is extremely poisonous, with a toxic level an order of magnitude higher than most of the other toxic metals. It is used industrially in plating and other applications such as galvanizing. It is found with zinc in foods, and replaces zinc in many enzyme binding sites. Zinc, a healthy masculine mineral, is protective against cadmium, as is calcium. This means that as zinc and calcium deficiencies develop, the body absorbs more cadmium from the food, air or water. The main cause of calcium deficiency today is pasteurization and homogenization of dairy products.

Common sources of cadmium exposure are 1) refined and “junk” foods that have been stripped of their protective zinc and calcium, 2) contaminated well or tap water and 3) cigarette and marijuana smoke. Cadmium is used in cigarette papers. A little is also found in coffee, and in higher amounts in most shellfish. Galvanized and black plastic pipes can be a source of cadmium in drinking water in a few cases, particularly in soft water areas.

Symptoms of cadmium toxicity. Cadmium is associated with all of the modern ‘killer’ diseases. It tends to harden and inflame the arteries leading to arteriosclerosis, atherosclerosis, impaired circulation, hypertension and heart failure. Elevated hair cadmium is highly correlated with cancer, in my experience. It is also important for hypoglycemia, diabetes, mental illness and many other problems. Its neurotoxic effects are critical and are discussed in later chapters. It is called the *pseudo-masculine element* because it toughens, “hardens” and inflames the personality, just as it hardens and inflames the arteries and other tissues of the body. It does this by replacing zinc, a mineral known to help prevent inflammation. Other symptoms include bone pain, osteoporosis and other bone and tendon problems. It damages the kidneys, liver, bones and, in fact, all body organs.

ARSENIC

Arsenic may be called the *slow death* metal. It is used commonly in pesticides. It kills certain insects, but is also deadly for human beings. Even organically grown food may have residues because the crops were often grown on land that was formerly sprayed with arsenic-containing pesticides. Also, “organic” fertilizers today are allowed to contain a certain amount of sewage sludge that contains toxic metals. This needs to change, though it would increase the cost of organic food significantly. Chicken feed may still contain arsenic in the form of Roxarsone, an anti-parasite medication used on millions of chickens in America and around the world since the 1960s. This compound is not as bad as some, but still adds arsenic to the diet and sickens some people. The arsenic is excreted with the chicken manure, which is often sold as “organic fertilizer”. In this way, arsenic has spread throughout the food chain. To a greater or lesser degree, it now contaminates most water systems around the world.

Arsenic is used industrially in glass-making, insecticides, rat poison, tanning leather and to preserve wood. Lumber that is greenish in color has often been treated with arsenic to resist insect infestation. Arsenic was the poison of choice for many murderers years ago. It is not used much for this purpose today because it is now easily detectable with hair and even blood testing.

Symptoms of arsenic poisoning. Many are vague, which is why it was an excellent way to poison a person. They include weakness, malaise, aches and pains, sore throat, diarrhea, ringing in the ears, headaches, vertigo, pallor, coma and death.

URANIUM AND THE OTHER RADIOACTIVE ELEMENTS

The radioactive minerals may be called the *stealth killers* because they offer no signs or symptoms in low doses. They include about 60 radioactive variants or *isotopes* of common elements that are either shorter or longer-term emitters of radioactive particles. They include iodine-131, platinum-190 and -192, samarium-147, -148 and -149, rubidium -87, rhenium -187, thorium-231 and -232, strontium-90, uranium-235 and -238, potassium-90, vanadium-50, zirconium-96, lead-211 and others.

Sources. Environmental sources include nuclear bomb tests, medical use of radioactive materials, waste from nuclear plants such as runoff water used to cool the plant, cesium-containing smoke detectors, perhaps food irradiation equipment, and war-related nuclear material such as depleted uranium used as ammunition. Radioactive minerals are the most damaging to human health in that they damage tissue at the DNA level. However, they are not as toxic chemically as lead, mercury or cadmium, fortunately. All babies are born with some radioactive elements in their bodies, though they may be hard to detect.

Radiation toxicity receives little attention today even from holistic doctors. Reasons for this are that it is so silent, so subtle and hard to detect. Also, few methods exist to remove them.

Development can help radiation toxicity. Interesting benefits of development are its ability to 1) protect a person from some radiation, 2) remove radioactive minerals from the body, and 3) kill or weaken cells that have become mutated due to radiation toxicity. It does this better than any other method I am aware of, by the following methods:

- *Remineralizing the body* reduces the absorption of some radioactive minerals such as iodine-131 from the air. This has to do with the concept of *preferred minerals*.
- *Deep removal of toxic metals.* Development can go far deeper than chelation therapy and other methods to remove more of the radioactive minerals. This can be done quickly, sometimes within weeks to months.
- *Removal of ALL the toxic metals* gets rid of many unusual ones. In contrast, chelation, for example, mainly removes just a few toxic metals.
- *Improving adaptive energy or vitality.* This enables the deep removal of the metals.
- *Eating a very yang diet.* Radiation is extremely yin in Chinese terminology. By forcing the cells to be more yang, cells that contain radioactive particles are either killed or inactivated.
- *Sauna therapy.* This is extremely helpful to reduce radiation damage. Heating the body several degrees helps kill or disable mutated and weaker body cells. This can prevent them from reproducing, so the mutated cells are slowly eliminated. Other frequencies from the near infrared heat lamps may also be of help in reducing radiation toxicity.
- *Distilled water.* A unique property of distilled water is an ability to bind to some radioactive minerals. This is one of the reasons it is used in the beginning of development programs, though this was not part of Dr. Eck's original research.
- *The use of kelp, along with other products.* Kelp, with its high alginate content, helps remove some radioactive minerals.

19. HAIR MINERAL ANALYSIS OVERVIEW

Tim, age 69, consulted me because he had been diagnosed with prostate cancer. He had already been to a clinic in Switzerland and to many holistic physicians who had given him many therapies and remedies. However, his PSA remained high, and he was tired and very worried about his prostate situation. He did not want to use conventional therapies.

I usually do not work with cancer using development, but made an exception in this case. Tim's first hair mineral analysis revealed a very slow oxidation rate, a four lows pattern and a low sodium/potassium ratio. This is a very unhealthy combination of patterns that indicate extreme exhaustion, frustration, and "spinning one's wheels and getting nowhere". This was an apt description of Tim's state of mind. However, he embraced a development program with complete dedication, and did well following the supplement program, the diet and doing coffee enemas and daily near infrared saunas.

Four months into the program, Tim had a severe healing reaction involving an infected tooth. I thought he would quit the program, but I was incorrect. He stayed with it, and the crisis soon passed. A deep and chronic infection had been cleared, and Tim's mood and test results started to improve quite dramatically. His second hair mineral test showed he was no longer in a four lows pattern. On the following hair test, the sodium/potassium ratio normalized.

Three years later, Tim went through another healing crisis in which his shoulder froze. His medical doctor did x-rays and told him the shoulder was arthritic and he must have surgery. A deep bronchial infection from years before also flared up. These retracings took almost a year to completely go away, but healed completely with just some chiropractic care and natural methods. Tim slowly transformed from a sickly client until one day, at age 73, he told me he had so much energy and felt so young again he didn't know what to do with himself.

This chapter begins a more detailed section of this text concerned with hair mineral analysis. It is a complex subject and I have only presented the basics for this reason. It is important to know that most doctors and nutritionists do not use hair analysis in the way described in this chapter. They use the test mostly to assess toxic metals and often little else. Dr. Eck pioneered a completely different way to interpret and utilize hair mineral analysis for the purpose of doing what may be called a *stress analysis* on the human body. This is an engineering method and not part of the current paradigm of medical care, though it uses all of their scientific knowledge and much more.

With a medical background, I was very skeptical about hair analysis, especially as Dr. Eck made use of it. It was confusing and a lot went against all my previous knowledge of biochemistry, nutrition and other subjects I had studied. I am glad, however, that I stuck with it,

as the method has, over time, proven itself again and again as an incredible breakthrough in science and healing.

WHAT IS A HAIR MINERAL ANALYSIS?

A tissue mineral biopsy. A hair mineral analysis is a *tissue mineral biopsy*. Biopsies are cellular tests. Some, such as liver biopsies, are used to find cancer or to check for high levels of iron and other metals that collect in the liver.

Testing the hair tissue for minerals has been used for at least 100 years worldwide for biological monitoring of almost all species on planet earth. For example, mineral levels and toxin levels can be easily measured in both domesticated and wild animals without inflicting harm by simply snipping a piece of hair and analyzing its mineral content.

A screening test. Hair mineral analysis is generally considered a screening test, rather than a diagnostic test. Screening tests are inexpensive, non-invasive and provide a lot of information rapidly. This is a good description of a hair mineral analysis. When performed and interpreted correctly, hair mineral testing is an extremely sophisticated method for assessing, monitoring and guiding the correction of body chemistry. Hair is also excellent for testing many drugs, toxic chemicals and is used constantly for genetic testing of DNA. These, however, are not the focus of this book.

Biological monitoring. At times, I hear doctors pronounce that mineral analysis by mass spectroscopy is not helpful for testing the body. This is laughable. Minerals are the basis for life and for all physical creations on earth. The identical test is used hundreds of times each day for:

- *Testing for toxic metals and nutrient minerals in dozens of animal species around the world.*
- *Testing minerals in the soil for farmers and ranchers everywhere in the world.*
- *Testing the content of mineral ores for mining purposes.*
- *Testing the mineral content of plants of every kind.*
- *Even testing the mineral content of distant planets and stars.*

Dr. Eck figured out that deep healing requires balancing the tissue minerals. This is the single most important science on planet earth if humanity is to survive into the near future.

WHY USE HAIR FOR ANALYSIS?

Hair is an excellent tissue for sampling for the following reasons:

- *Hair provides a unique cellular reading and a 'window' into the inner workings of the body cells.* The cells, not the blood or urine, are the major site of metabolic activity. This cellular reading is critical for development science.
- *Hair is a very stable biopsy material, very easy to sample, and requires no special handling other than to keep samples clean.* The cost is also very reasonable.
- *The test is very accurate and reliable when performed properly.* Computer-controlled mass spectrometer technology can easily assess parts per million and often parts per billion with excellent reliability. The controversy concerning the reliability of hair testing has to do with

the laboratory procedure in preparing the hair samples, not the testing of minerals itself. This topic is discussed later in this chapter.

- *Hair mineral values vary in the hair by a factor of ten or more.* By contrast, mineral levels are kept relatively constant in the blood, even when pathology is present. Hair is thus an excellent and very early indicator of metabolic imbalances.
- *Toxic metals are easier and more accurately detected in the hair tissue than in most other sites.* However, no test can reveal all the body's toxic metals. This is important to recall.

BASIC INFORMATION ABOUT HAIR

Hair generally grows about one-fourth of an inch per month or more. All hair grows for a while, and then falls out. It goes through a resting period, and then grows once again. For this reason, some hair loss is normal. Some people experience seasonal hair loss or shedding, to a degree. This is normal, as well.

Hair color varies from light blond to black, with black the most common color. Selenium is slightly higher in blondes, while copper may be slightly higher in red hair, and iron or manganese slightly higher in black hair. However, these differences are rarely noticeable.

Grey hair. A recent study revealed that the concentrations of calcium, magnesium, sodium, potassium, zinc, manganese, copper and iron were somewhat lower in grey hairs compared to black hairs on the same person's head (*J Health Science*, 2000, 46(1):46-48). However, the differences were small. This may help us understand graying of hair as a symptom of mineral depletion. However, I believe there is more to the problem of graying hair.

WHAT DOES HAIR TESTING MEASURE?

Hair mineral analysis assesses the chemical elements deposited in the **cells** and the **spaces between the cells**, also called the **interstitial spaces**. It provides a reading of the deposition of minerals in the hair tissue during the months during which the hair grew. *It does not measure the total body load of any mineral, as some claim.* At least 20 or so elements are measured, depending on the laboratory. They are in three groups:

- *The macrominerals* include calcium, magnesium, sodium, potassium and phosphorus.
- *The trace minerals* include iron, zinc, copper, manganese, selenium, chromium, and perhaps others, depending on the laboratory.
- *The toxic minerals* include lead, mercury, cadmium, arsenic, aluminum, nickel and perhaps antimony, beryllium, bismuth, tin, uranium and perhaps others depending on the laboratory.

Ratios and patterns. The hair mineral levels are just a small part of the value of the test. The *ratios* and *patterns* of the minerals, while more complex, provide far more information than the mineral levels. This is discussed in the next few chapters.

HOW ARE THE READINGS REPORTED?

A somewhat confusing situation is that different hair mineral testing laboratories report the mineral values in different units. The most common ones include:

- *Milligrams per 100 grams*, written as mg%.
- *Parts per million*, written as ppm. The numbers will be 10 times higher than those in mg%.
- *Micrograms per gram*, also written as ug/g. The readings are the same as parts per million.

Converting the units. To convert parts per million to milligrams per 100 grams, divide the parts per million reading by 10 or move the decimal point one number to the left. To convert mg% to parts per million, simply multiply the number by 10 or move the decimal point one place to the right. For example, a level of 16 mg% is equal to 160 parts per million or ppm or ug/g. Ppm and ug/g are the same, in terms of the numbers, and need no conversion.

ACCURACY AND RELIABILITY

Hair is analyzed for minerals using atomic absorption spectroscopy, induction-coupled plasma or the newest method, mass spectroscopy. These are standard laboratory procedures. Newer, computer-controlled testing instruments easily measure in parts per million or parts per billion with accuracy of about plus or minus 3%. This is equal to and often significantly better than most blood tests, for example. Controversy involving hair testing is not due to the testing method, but rather to the hair preparation procedure.

In a 300-page review completed in August 1979, *The United States Environmental Protection Agency* reviewed over 400 studies of hair mineral testing. The authors concluded that hair is a "meaningful and representative tissue for biological monitoring for most of the toxic metals". Some of those studies, along with many recent ones, are listed in the references. Anyone who suggests that hair mineral analysis is "inaccurate", "unreliable", "unproven" or that it "lacks documentation" is not knowledgeable regarding the test.

How often do laboratory errors affect hair mineral readings? In my experience, the answer is extremely rarely when one uses Analytical Research Laboratories. The testing is done very carefully, the laboratory director is a stickler for accuracy and their quality control procedures are superb. I cannot say the same for all the laboratories, although overall the accuracy is not bad in my limited experience with some of the other labs that offer hair testing.

HOW IS THE HAIR ANALYZED?

The procedure described here is used at Analytical Research Laboratories in Phoenix, Arizona. Most of the other labs probably use somewhat similar procedures. However, almost all of them add another step. They wash the hair in various ways. This ruins the accuracy according to a number of studies that are discussed below. The basic analysis procedure is:

- *Hair samples arriving at the laboratory are first cut into small pieces with surgical scissors.*
- *A precisely weighed amount of hair is placed in a test tube with nitric and perchloric acid and left overnight to dissolve.* The acids dissolve away all of the hair except the minerals.
- *The following day the sample is rehydrated precisely and placed in the measuring instrument, which is often an ICP-mass spectrometer.*
- *Inside the test instrument, the dissolved sample is burned at a high temperature.* Each mineral gives off a characteristic spectrum or frequency of light. This is picked up by

detectors in the instrument. Precision calibration and control of the flame temperature are essential to obtain accurate readings.

- *The ICP-mass spectrometer is a highly sophisticated hybrid, computer-controlled machine costing several hundred thousand dollars. This is not a home or office unit. Any doctor who runs this test in his office is not using the same equipment and results will not be as accurate.*

LICENSING AND QUALITY CONTROL

In America, hair mineral analysis laboratories are inspected annually by the U.S. Department of Health and Human Services, Health Care Financing Administration, Division of Health Standards and Quality. An operating license is issued only if personnel and procedures meet their standards. They must have certified personnel in charge of the lab, and the lab is required to run blind test samples and submit them periodically to the government for checking the lab's equipment.

Other quality control at the lab. Analytical Research Laboratories runs control samples and blank samples at the beginning, middle and end of every batch. *Control samples* are samples whose value is known. *Blank samples* contain only pure, triple-distilled water.

All licensed labs must also participate in an industry-wide quality control program. In addition, ARL offers automatic retesting of any mineral value that is far out of range, at no extra cost. This service is not provided by any other laboratory that I am aware of.

HAIR MINERAL ANALYSIS FOR ANIMALS AND VETERINARY CARE

Development is superb for animals and veterinary care. All the principles in this book apply to most animal species. Animals are much easier to work with because their diets are easy to control, their mental and emotional makeup is simpler, and their stress levels are lower in most cases. For those who work with animals, a few pointers may be helpful:

- *Normal mineral values differ for each species and, at times, for different breeds of animals.*
- *Be sure to obtain a clean hair or fur sample.* A simple way is to wipe the sampling area with rubbing alcohol first to clean it. Do not use water, as this may wash out some water-soluble minerals.
- *Sodium/potassium ratios are lower in animals for complex reasons.* They can rise very high in some pets when the animal is under stress, however.
- *Often changing the feed is enough to cause significant changes in the body chemistry of animals.* This, plus a few simple supplements, often causes rapid healing. The fine-tuning and years of retracing required with some people are rarely required, greatly simplifying the application of development therapy.
- *In my experience, development veterinary science would save farmers, ranchers, livestock and pet owners billions of dollars in unnecessary disability and cost.* It would also greatly extend the lifespan of many animals.

Contact people for veterinary use of hair mineral analysis. To locate veterinarians and others who offer development and hair analysis for both small and large animals, please visit www.drlwilson.com.

CONTROVERSIES WITH HAIR MINERAL ANALYSIS

IS HAIR DIRTY AND THEREFORE UNRELIABLE AS A BIOPSY MATERIAL?

Some say hair is not a good biopsy material because it is inherently dirty, greasy and otherwise contaminated by contact with shampoo, soaps, hair brushes and other implements. This is not our experience, assuming the hair is washed with a mild shampoo no more than 24 hours before sampling it. Any sample that is obviously dirty should be rejected, and a new sample requested of the client. Research indicates that:

- *Light sweating and air pollution do not significantly affect hair readings.*
- *A lot of the sample comes from inside the hair shaft, which is insulated from contamination.*
- *Most shampoos, conditioners, tints and dyes do not contain minerals that can contaminate the sample.* In fact, many shampoos contain EDTA or other chelating agents that *remove* minerals. This is why I only recommend using a simple shampoo before sampling the hair.
- *If one just had a bleach or permanent on the hair, wash it at least five times before cutting the hair sample for mineral analysis.* Bleaching and permanents can damage the hair slightly.

Occasional sources of environmental contamination include:

- *Swimming in pools regularly can raise the sodium and/or copper levels.*
- *Heavy sweating immediately before cutting the sample can raise the sodium and potassium readings somewhat.*
- *Rarely, bathing in water treated with a water softener may increase the levels of sodium or potassium, depending upon which mineral is used in the water softening equipment.*
- *'Grecian Formula' and 'Youth Hair' hair dye contain lead.* They will elevate the lead level (and should absolutely be avoided!). Other dark hair dyes may also contain lead.
- *Head & Shoulders shampoo can elevate the zinc level.*
- *Selsun Blue shampoo can elevate the selenium level.*
- *Very rarely, occupational exposure to dust and grime is a problem.* This can be avoided by washing the hair shortly before sampling it after one has been exposed to metal or other dusts.

Asking the client which products are on the hair will usually be sufficient to rule out abnormal readings due to hair products. Other than the situations above, which are easy to identify in most cases, the hair is a very stable and clean biopsy material.

SHOULD PUBIC HAIR BE USED FOR HAIR MINERAL TESTING?

Most labs allow public hair to be used for sampling. However, it should be used only as a last resort, in my view, as it appears to be less accurate. Phosphorus levels, in particular, are often extremely high in pubic hair. However, other readings may be affected as well.

SHOULD THE LABORATORY PROCEDURE INCLUDE WASHING THE HAIR?

The biggest area of problems with hair mineral testing center around how the hair is

handled prior to testing its mineral content. Dr. Eck learned early on that one must not wash the hair at the lab for accurate results. However, the danger of environmental contamination prompts most hair testing laboratories to wash the hair before analyzing it. This removes up to 50% of the water-soluble minerals, and can affect all the levels to some degree. Studies that show this include those by:

- *Leroy, R. (J Ortho Med., 1986;1(2)).* These studies are found in Appendix V.
- *Seidel, et al. (JAMA, 2001, 285, #1).* The authors compared hair test results from about six labs. The results of the two laboratories that do not wash the hair samples showed excellent correlation, unlike some of the others. One must obtain the actual test numbers to realize this, as it is not mentioned in the study.
- *Assarian, GS and Oberleas, D., (Clin Chem., 1977;23(9):1771-1772).*

The arguments in favor of washing the hair at the laboratory include:

1. Only ‘exogenous’ minerals are being removed. These are minerals that are on the surface, and not really part of the hair shaft itself. However, the argument is incorrect because hair is 10-15% porous, so chemicals used on it will penetrate inside the hair to some degree.

2. Washing at the lab is no different from taking a shower at home to clean the hair. This argument is flawed for a number of important reasons:

- *Washing chemicals.* Most shampoo, clarifiers, and rinses are mild to avoid irritating the skin. In contrast, laboratory cleansing agents include pure alcohol, intense solvents such as acetone, and harsh detergents such as Triton-X used at Doctor’s Data, for example. These penetrate the hair far more than plain shampoo and tap water.
- *Distilled versus mineralized water.* Most water used for bathing has minerals in it. Most labs wash the hair with laboratory-quality, double or triple distilled water. This removes many more minerals from the hair, as this is one property of distilled water.
- *Duration.* A less important factor is that during showering, the hair may only be washed for a minute or less. The laboratories, however, often wash the hair for 3-10 minutes.

ARE REFERENCE RANGES OR IDEAL VALUES BEST FOR HAIR ANALYSIS?

Most laboratories offer mathematical reference ranges on their graphs, such as one or two standard deviations from a normal. Development science depends on the use of *ideal* or *optimum mineral values* rather than reference ranges. The reasons for this include:

- *Average or normal levels are not helpful because they are based on “average” people who are often unhealthy.* Development seeks optimal or ideal health, not average health.
- *Higher standards are needed.* A healthy future of mankind on earth requires tighter or higher standards than are currently used in post-modern medical care.
- *Normal ranges are not precise enough.* In development, subtle imbalances are often very important.
- *False confidence.* With mathematically-defined reference ranges, if the numbers fall in the “normal range”, doctors may assume their patient is healthy, when this is often not the case.

Sadly, Analytical Research Labs is the only hair testing laboratory at this time that even offers ideal hair mineral values on their graphs.

CAN ONE REALLY RECOMMEND FOODS AND NUTRIENTS BASED SOLELY ON A HAIR ANALYSIS?

Some uninformed doctors object to the use of hair testing to suggest diets, lifestyle changes, vitamin doses, drinking water and other healing modalities such as sauna therapy. However, the explanation is simple. For example, if copper is too high one may suggest methods and remedies such as vitamin C to reduce the level of copper. Other ways to lower the copper might include distilled water, coffee enemas, sauna therapy and changing the diet to reduce copper intake.

WHY ARE HAIR TEST RESULTS OFTEN DIFFERENT FROM BLOOD AND URINE TEST RESULTS?

Their meaning is not different, but requires that one interpret the hair and blood tests correctly to understand what is occurring. Few understand both types of tests well enough to do this. Some of the major differences between hair testing and blood or others tests include:

- *The hair and the blood measure different body compartments, each with their own metabolism.*
- *The blood is maintained at the expense of tissues such as the hair. This means the hair will change first, often years before the blood.*
- *The hair is a storage and to some degree, an excretory tissue. The blood is a transport medium.*
- *Blood, urine and saliva provide short-term or even instantaneous readings, whereas a hair test provides an average and a longer-term reading.*
- *Homeostatic mechanisms at work in the blood such as buffering of pH and osmotic balance are extremely different from homeostatic mechanisms at work in the tissues and at the cellular level.*

IF HAIR TESTING IS SO HELPFUL, WHY IS IT NOT USED MORE?

Hair testing is used hundreds of times daily throughout the world for biological monitoring, forensic testing, drug testing and other purposes. Mineral analysis by mass spectroscopy is also the standard method of measuring minerals in geology, mining, astronomy, environmental sciences, all chemical laboratories and hundreds of other industrial and governmental applications.

It is not used more in post-modern medical care because allopathic licensing boards may not approve of it, doctors are not trained in its use, and most doctors and other medical personnel are horribly ignorant in general about nutrition, toxicology, biological monitoring, screening tests and the use of this excellent test for these purposes.

HOW VALID ARE SEVERAL WELL-PUBLICIZED NEGATIVE REPORTS ON HAIR ANALYSIS?

Over the past 25 years, the *Journal of the American Medical Association* published two very biased studies about hair analysis. They were widely publicized and are still referred to as “definitive proof” that hair testing is unreliable and fraudulent. The reader can decide for himself:

The August 1985 study. (*JAMA*, 254:8). Fifty-six hair samples were sent to 13 different laboratories and the results analyzed for consistency. Based on the fact that some results correlated excellently, but others did not, the author claimed that **all** hair analysis was probably a fraud. The results were highly publicized in the media. Flaws in this study included:

- *Long hair was used.* To obtain the hair samples, the study's author cut several very long strands of hair from his two teenage daughters. He then cut them into small pieces to obtain 56 supposedly identical samples. This violates standard protocol because hair should be cut close to the scalp and samples should be no more than 1 to 1.5 inches long. The ends of long hair are far less reliable for testing because they are several years old and are often severely damaged by repeated washing, bleach treatments, coloring and other factors.
- *Mixing pieces of hair together by hand does not produce identical samples.* Hair is very electrostatic and cannot be mixed easily by hand. The correct protocol to obtain identical samples is to powder the samples in a special machine, and then mix the powdered samples.
- *Hair was "washed" under the kitchen tap after it was cut.* This violates hair analysis protocol from all laboratories that I am aware of. Standard protocol that all labs insist upon is to wash the hair before sampling, but not afterwards. Even if washing were a good idea after sampling, one would never dream of using tap water, as it is often rich in minerals that can be absorbed into the hair upon washing. This should have ended any interest in the study by the editors of the *Journal of the AMA*, had they been interested in a quality study.
- *The study compared different procedures that always yield different results.* Hair was sent to 13 different laboratories. Some do not wash the hair at the lab, while others wash it in various chemicals for differing lengths of time. This has to produce differing results. However, no mention was made of the fact that labs prepare the hair samples differently and the author did not discuss the results in terms of the labs that wash in alcohol, those that wash with detergents or acetone, and those that do not wash the samples at all. Either the study's author was unfamiliar with hair analysis protocols or he did not care.
- *The author admitted in the study that he had no expertise in hair mineral testing, and had never run a hair test.* This seems extremely odd. Would this journal print a study of brain surgery by a doctor with no experience in this field? I strongly doubt it.
- *Very poor referencing.* The author cites 8 references and, among them, at least three were not scientific studies. Two referred to a legal case involving a testing laboratory and one was a book about statistical methods. This should have disqualified the study for publication if it were truly peer-reviewed. As mentioned earlier in this chapter, the US Environmental Protection Agency had completed a study of hair analysis only six years earlier in which they reviewed over 400 scientific papers on hair analysis. Traditional medical doctors are often quick to criticize non-mainstream studies if the references are scanty, but somehow this one passed muster and was spread far and wide.
- *The author of the study had a clear conflict of interest.* At the time he did the study, and I believe presently as well, this author is affiliated with and has been the director of Quackwatch, an organization paid for by mainstream drug and other interests that regularly denounces newer, holistic methods of health care.

The January 2001 study. A second study that claimed to "revisit" the 1985 study was published in 2001 (*JAMA*, 285:1). Some of the flaws in the old study were corrected, but there were other problems with it. Six hair samples were cut from one woman's head hair and sent to

six laboratories for analysis. The samples were the right length and were not washed under the kitchen tap before being sent to the laboratory. The authors again concluded that hair analysis is unreliable and probably a fraud. Flaws in this study included:

- *Only one patient was involved.* I learned in medical school that the use of one person to draw any conclusion is merely anecdotal, and does not constitute a study at all. Mainstream medical groups often criticize small studies by alternative practitioners. Somehow, this “study” managed to be peer-reviewed and printed in a leading mainstream medical journal.
- *An illegally-operating laboratory was included in the study.* This is so bizarre it is almost unbelievable, and of course, should invalidate the study. Imagine a study of a brain surgery technique that deliberately used an illegally-operating hospital or a doctor who was not properly qualified to do the work. Would this have ever gotten published anywhere? I highly doubt it.

Oddly, the use of the illegal lab was noted in the study, but no explanation for it was given. Several other legally-licensed laboratories could have been used, instead. The illegally-operating laboratory also happened to report the worst results, which caused the authors to draw their conclusion about hair analysis. Using an illegally-operating laboratory only makes sense if the goal was a deliberate attempt to discredit hair mineral analysis.

- *Very poor referencing.* Only 39 references for hair analysis are given. Of these, at least two had nothing at all to do with hair analysis, but were books or papers on statistics. As stated above, hundreds of studies of hair mineral testing exist and were ignored.
- *Comparing apples and oranges.* The authors mentioned that some laboratories wash the hair while others do not. However, they ignored this fact in their conclusion. Instead, they just compared the numbers, which cannot really be done between labs that wash the hair and labs that do not wash the hair.
- *Ignoring positive results.* When one examines the results carefully, the two laboratories that do not wash the hair, Analytical Research Laboratories and Trace Elements, Inc., showed superb correlation between their results. Six of the nine major elements were identical in parts per million. The rest were well within standard laboratory ranges of accuracy. This fact was not even mentioned. In other words, this anecdotal report found that among the hair testing laboratories that do not wash the hair, hair mineral testing was extremely accurate and reliable.

The fact that these two “studies” were published at all, let alone in a leading post-modern journal, is a sad reflection on the quality of mainstream medical research. It indicates either gross ignorance and negligence within the peer review and editing processes, or perhaps a hidden motive to discredit a newer test that threatens the status quo in medical care.

The CDC report on hair analysis. Another shameful government pronouncement on hair testing took place in 2001 at the Centers for Disease Control and Prevention. A panel was assembled to evaluate “the state of the art of hair analysis”. It involved seven “experts” in toxicology and other fields and 50 public observers.

The experts reviewed 7 studies of hair analysis to prepare for the meeting. In addition, another 25 studies were cited during or after the meeting. Based on this “review”, the panel concluded that hair analysis is not effective or reliable as a method of biological monitoring for toxic metals, with the exception of methyl mercury. Flaws in this report include:

- *Extreme lack of references.* A review of only 32 studies of hair analysis should have disqualified this panel right away. In addition, of the 32 papers, one was a CDC paper on toxic chemicals, one was a report on the anatomy and physiology of hair, and one was an article about controlling hair growth. Another concerned Napoleon Bonaparte's exposure to arsenic in 1816, while another was about regeneration and rate of hair growth in men. One was also the 1989 recommended dietary allowances. Totally ignored were literally hundreds of studies, many of which are in the reference section of this text.
- *Overlooking their own research.* There was no mention or citation of the government's own 300-page review of over 400 studies of hair analysis conducted in August of 1979. This was a real review that could have been updated by the CDC, had they cared to do so. The earlier review concluded that hair testing was "meaningful and representative for biological monitoring for the major toxic metals".
- *Unqualified experts.* The 7-member panel of 'hair mineral analysis experts' included 1) a professor of emergency medicine, 2) the president of an internal medicine consulting service, and 3) an employee in the Department of Health Education and Promotion at the ATSDR. Also among the experts was Dr. Seidel, one of the authors of the second *JAMA* study described above. This might be seen as obvious bias, since she was the lead author on a very negative study of hair analysis. The reference for this panel discussion is www.atsdr.cdc.gov/hair_analysis/.

The only way to evaluate a method such as development properly is with what are called prospective, retrospective or tabular studies. These are fancy words for looking at cases over time, without regard to anything except the outcomes. I encourage all practitioners to review their files and publish such case histories.



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PATIENT NAME:

SEX:

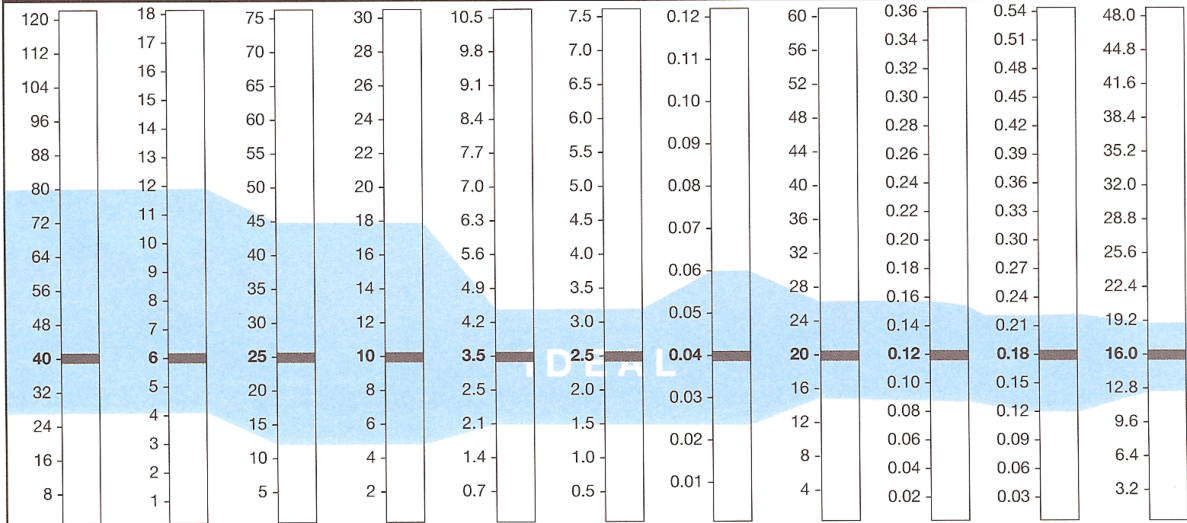
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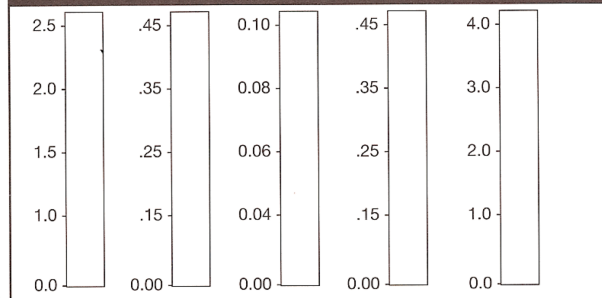
CLIENT ACCT. NO.

NUTRIENT MINERALS



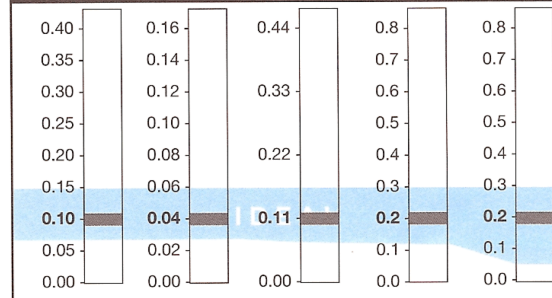
CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM (Na)	POTASSIUM (K)	IRON (Fe)	COPPER (Cu)	MANGANESE (Mn)	ZINC (Zn)	CHROMIUM (Cr)	SELENIUM (Se)	PHOSPHORUS (P)
PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST

TOXIC METALS



LEAD (Pb)	MERCURY (Hg)	CADMIUM (Cd)	ARSENIC (As)	ALUMINUM (Al)
PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST

ADDITIONAL MINERALS



NICKEL (Ni)	COBALT (Co)	MOLYBDENUM (Mo)	LITHIUM (Li)	BORON (B)
PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST	PREVIOUS TEST

SIGNIFICANT MINERAL RATIOS

MINERAL RATIO	IDEAL RATIO	CURRENT RATIO	% OF IDEAL	PREVIOUS RATIO	LOW	IDEAL	HIGH
CA/MG	6.67						
CA/K	4.00						
NA/MG	4.17						
NA/K	2.50						
ZN/CU	8.00						
CA/P	2.50						

MIXED OXIDIZER

FAST OXIDIZER

SLOW OXIDIZER

20.

HAIR ANALYSIS INTERPRETATION PRINCIPLES

William, age 56, came for a consultation five months after his first heart attack. His symptoms included angina or chest pain, fatigue, obesity, joint pain and hypertension. He had done many chelation treatments, but these only provided temporary relief of his angina. His first hair analysis revealed a sodium/potassium ratio of 0.53:1 (normal is about 2.5). This is a severe cardiac stress indicator.

William made slow progress, first noting a reduction of arthritic pain and angina. His first retest hair analysis actually looked a little worse, but he felt a lot better. This occurs, at times. In his instance, toxic metals were acting like crutches, propping up certain mineral readings. As they were eliminated, the hair patterns often temporarily look a little worse, but the client feels better. Later charts showed a much better sodium/potassium ratio, indicating a normalization of this important vitality indicator. William's blood pressure slowly came down to normal, the angina subsided and his energy began to return.

Hair tissue mineral analysis is the major assessment method used in development. It is not perfect, but it is quite effective and even remarkable in what it can reveal. This chapter is divided into 1) principles that apply to each mineral reading individually and 2) those that apply to the readings in general. The next chapter discusses components of the hair analysis readings. In addition, Chapters 40 through 43 discuss psychological aspects of hair analysis interpretation.

PRINCIPLES THAT APPLY TO EACH MINERAL READING INDIVIDUALLY**THE TISSUE BIOPSY PRINCIPLE**

A hair mineral analysis is a biopsy or tissue test. That is, it is a measurement of reading of the *cells and interstitial spaces* of the hair tissue. Confusion occurs when one forgets that the hair test only measures minerals in the *hair*. It does not measure the level of minerals in the entire body, for example, or in any other organ or tissue. This is one of the most common errors among doctors who use hair testing. They assume that the high or low reading reflects the total body load of a mineral, but this is rarely the case. The readings, as explained elsewhere, constitute a “mineral system” that is kept in a particular balance. A low zinc means that sodium may be high, for example, and zinc compensates for it. A high copper may mean adrenal weakness, and so forth.

Hair analysis does not measure the total body load of a mineral. In fact, trying to assess the total body load of a mineral is not a particularly useful idea. Reasons for this include:

- *The mere presence of a mineral is not that important.* Nutrient minerals must also be in a bioavailable form to be utilized properly. Just knowing the total amount does not tell one how available the mineral is.
- *Even the total load of a toxic metal may not be that important.* For example, cadmium stored in the bones is far less of a problem than a tiny amount lodged in the kidneys or the brain.
- *It is impossible with current technology to assess the total body load of a mineral.* One would literally have to biopsy every cell and organ of the body.

Implications:

- *Use care in any attempt to compare hair analysis with blood or other kinds of mineral tests.*
- *Those ignorant of tissue mineral testing claim the technique is invalid because it does not reflect the total body load of a mineral. However, no one claims that it does.* The only claim is that one can *infer* certain information about mineral metabolism by knowing the stress response patterns as indicated on the hair mineral test. This is the goal of interpretation.

THE AVERAGING PRINCIPLE

Each hair mineral reading represents an *average rate of mineral accumulation in the sample over the sampling period (8-12 weeks)*. This means that the actual mineral deposition in the hair tissue can vary from day to day and week to week. We only know the average accumulation. This must be understood to avoid confusion, at times. For example, a zinc reading may seem very high on one test, and then decrease on the next test. This may make little sense until one realizes that the level may have been decreasing constantly over the past six months, but we can only see the average reading during each period that the hair grew.

Advantages and disadvantages of longer-term, average readings. Advantages of longer-term readings are: 1) long-term trends and patterns are often easier to see and 2) readings are not affected by day-to-day ups and downs due to dietary changes, menstrual periods and other shorter term factors. The advantage of an instantaneous reading is it would give a more up-to-date reading. The best we can do if this is required is to use very short pieces of hair cut very close to the scalp. This will provide a more recent picture, but it will still not be an instantaneous report like a blood test.

Implications:

- *A single hair test cannot reveal if a mineral level is increasing, decreasing or remaining steady over the three-month growth period of the hair.*
- *Identical readings on a person's successive hair tests may have different meaning.* For example, let us say the copper level on two tests is 4 mg%. It is possible that during the three months represented by the first test, the copper was rising, but averages 4 mg%. During the three months represented by the second sample, the copper level may be falling, but still averaged 4 mg%. The meaning is different, but the average reading is the same.

THE PRINCIPLE OF BIOAVAILABILITY

A very *high* or a very *low* hair level may indicate bioavailability of the mineral.

Bioavailability refers to the ability of the body to utilize a mineral or incorporate it into an enzyme or other binding site. Bioavailability is perhaps the most critical principle to learn in hair analysis interpretation and development science. Bioavailability is also one of the most important, most complex and least understood phenomena in medical science. Reasons a mineral may become bioavailable include:

- *Ionization state* – This means whether a mineral is in an ionic (free) state or a bound state. This applies to calcium, for example, as explained in Chapter 14.
- *Valence* – some minerals can only be utilized when in an electrical state of matter with a particular number of electrons in its outer shell. This applies in the case of iron, manganese, chromium and perhaps other minerals. They may be toxic when in the wrong valence.
- *Synergistic co-factors* – Copper, vitamin C and other nutrients, for example, may be required to help fix calcium in the protein matrix of the bones.
- *The need for a mineral transporter* – Transporters are mechanisms or chemicals that move minerals throughout the body. Copper and iron, for example, require transporters such as metallothionein. Without enough transporter activity, a mineral will not be utilized correctly.
- *Binding proteins* – These are similar to transporters in some cases. Minerals must often be chelated or bound to a protein to be utilized.
- *Hormone levels* – For example, aldosterone is required to raise the tissue sodium level and reduce loss of sodium through the urine.
- *pH of the stomach or other compartment of the body*. Properly acidic gastric juices are helpful to chelate most minerals in the diet. Otherwise they may not be utilized well. The pH balance may also affect the ionization level and other properties of minerals.
- *Nutrient levels*. Other nutrients are frequently needed to synthesize mineral transporters or to facilitate chemical reactions that make minerals more bioavailable.

This principle explains many facts about hair analysis interpretation. For example, a person with a high level of a mineral often demonstrates symptoms of deficiency of the same mineral. The reason is that a very high reading of calcium, for example, often indicates bioavailability. Development science can help greatly to make minerals more bioavailable by balancing body chemistry.

Implications:

- *It is not so much what one eats, but what is used by the body that is important.*
- *Bioavailability can help explain the phenomenon that a mineral level may jump from low to high on a hair test within just a few months, even though none of that mineral was given.* The mineral level jumped because it was always present, but was sequestered and unavailable. Giving other nutrients and balancing the oxidation rate enabled the unavailable mineral to be utilized properly, or perhaps be released from a storage site.

THE SUMMATION PRINCIPLE

Each hair mineral reading represents a sum of metabolic events. Each mineral level is really a composite of factors, some of which elevate the reading while others decrease it. With

current technology, one can only read the sum of the effects influencing the mineral reading. The components of this sum are discussed in the next chapter, and may include:

- *Normal hair mineral metabolism.*
- *Mineral retention, deposition or loss of minerals into the hair.*
- *Mineral retention elsewhere in the body.*
- *Displacement.*
- *Defenders.*
- *Effects of foods and dietary habits.*
- *Effects of emotions and upbringing or childhood patterns.*
- *Effects of prescription drugs.*
- *Effects of lifestyle patterns.*
- *Effects of genetics or other more subtle factors.*

Possible implications:

- *At times, mineral readings must be 'dissected' into their components to avoid jumping to premature conclusions about their meaning.*
- *At times, several hair tests in succession may be needed to understand a mineral reading.*

PRINCIPLES THAT APPLY TO THE TEST AS A WHOLE

THE SYSTEMS PRINCIPLE

Always view all of the test readings together as a 'system', rather than as isolated numbers. This is a most important principle when interpreting a hair analysis with the method developed by Dr. Eck. One should view the individual minerals like pieces of a jigsaw puzzle. This takes some practice. Do not be concerned if the pieces of the puzzle don't all fit together at once. Some readings may be left unexplained for the time being, perhaps until a retest is performed in a few months. This is absolutely acceptable in development science.

Implications:

- *Hair analysis readings are often much more interdependent than blood test readings.*
- *Hair mineral readings may be much more complex to interpret than blood or urine tests.*

THE STRESS RESPONSE PRINCIPLE

The macromineral and trace mineral readings on a hair analysis partially reflect the body's recent responses to stress. This is a difficult principle for most practitioners. Instead of just measuring minerals in the body, one is measuring the body's response to stress. In other words, stress causes the mineral values to shift in certain ways that are reflected on the test. This is not as true of most of the toxic metals.

Implications:

- *Only with a basic understanding of the stress theory of disease and how to apply it can one appreciate hair mineral analysis and development science.*

- *Readings cannot be compared to blood tests or other types of testing unless one has a deep understanding of what the hair mineral levels represent.*

THE HOLISM PRINCIPLE

A hair mineral analysis is a holistic test. This means it includes and reflects heredity, upbringing, lifestyle, diet, drinking water, attitudes, body chemistry, as well as health and disease states. Stated differently, the test reveals an overall picture that is influenced by many factors. In one person, a high-sugar diet may affect the readings the most. In another person, weak adrenal glands from birth, or intense fears due to a childhood trauma may be the dominant factors on the test. In another instance, a viral infection may be most critical.

Implications:

- *To interpret a hair mineral test properly, one may require more than just the chief complaint and a physical exam. For example, lifestyle and dietary information can be crucial.*
- *To correct the numbers on a hair analysis, more than nutrition may be required. Perhaps the lifestyle and even a person's thinking habits are important to correct in some cases.*

PRIMARY AND SECONDARY READINGS PRINCIPLE

Certain levels, ratios and patterns on a hair test are *primary* or more important. Others are *secondary* and less vital to understand. For example, doctors often fixate on a high copper or mercury, and ignore the oxidation rate, which is far more important in most cases. In fact, a key to removing toxic metals is balancing the oxidation rate, not focusing on toxic metals.

Below is the rough order of importance of the hair mineral readings:

- *Most critical* are the calcium, magnesium, sodium and potassium levels, and their ratios. These are first because they are *primary regulators of metabolism*, and they reflect the *whole system of the body* and the *stress response* more than the others.
- *Next in importance* are zinc, phosphorus, and toxic metal levels when elevated. Zinc and phosphorus have to do with protein synthesis, another critical systems behavior.
- *Least critical, in most cases*, are the readings for iron, manganese, copper, selenium, chromium and other minerals. These can be important if elevated, but are often affected by other factors, making them less reliable. For example, to assess copper status properly, the copper level is often not important. Instead, one looks for the hidden copper indicators that are discussed in Chapter 15.

THE DYNAMIC PRINCIPLE

A single hair test is a “snapshot” of a dynamic, continuously-changing “moving picture” process of life. This is a reminder that our bodies are never static, but are always in a state of flux and change. A few patterns on a test, such as the sodium/potassium ratio, can indicate directional movement of the oxidation rate, for example. However, in general, one can only see the dynamic process by reviewing a series of hair tests taken over a period of months or years.

THE LAYERS OF ADAPTATION PRINCIPLE

In general, a hair analysis reveals the outer layer of many layers of adaptations or compensations that have occurred during a person's life. Repeat hair tests, assuming one follows a properly designed development program, reveal ever deeper layers of adaptations that require correction.

Our bodies adapt to stress by altering themselves moment to moment, and day to day. These adaptations build up, layer by layer. Each adaptation requires more of the body's energy, so as one ages, less and less energy is available for all other bodily activities.

Development reverses this process. The goal is to reduce the adaptations the body must make, which frees energy for more healing and for all other activities. Most layers must be corrected one at a time. As this is done, it frees the body's healing power a little bit, which, in turn, uncovers or brings to the surface a deeper layer to be healed. This is a fascinating fact about our bodies. It can sometimes take years, in fact, to uncover the most superficial layers of human imbalances. As these layers are uncovered and unwound, all physical and emotional symptoms and diseases tend to vanish because they were simply evidence of adaptations and compensations.

Implications:

- *In most cases, one cannot understand a person's health condition from just one hair test.*
- *A single hair test can be confusing because most of a person's adaptations are hidden. Thus, the cause for many symptoms may not be readily apparent.*
- *A retest hair analysis after several months on a development program may reveal quite different mineral patterns. This can be confusing unless one understands this principle.*
- *For best results, do not promise quick symptomatic results with development, except perhaps very generally. One may need to retrace several layers of imbalances before correction of a symptom occurs, and this may take weeks, months or, in some cases, it can even require several years.*

THE EARLY INDICATOR PRINCIPLE

Hair is often an early indicator of physical and emotional imbalances compared with blood, urine, saliva and x-ray examinations. Occasionally, someone tells me that hair testing is inaccurate because they cannot confirm the imbalances it reveals with a blood or urine test. A major reason for this is that hair testing is often a very early indicator. The hair test is often very accurate and reliable, provided the lab does not wash the hair and the test is interpreted correctly. Reasons why hair testing is often an early indicator include:

- *The body deposits toxic metals in tissues such as the hair to get rid of them. This can go on for years, until the body can no longer keep up this adaptive behavior. Only then does the problem cause symptoms or imbalances that are revealed on a blood test, for example.*
- *The blood is generally maintained at the expense of the tissues such as the hair. This means that a zinc deficiency, for example, will show up far sooner in the hair because the body will literally reroute zinc from the less important tissues such as the hair to maintain the level in the blood and other vital organs.*

Another example of how the blood is maintained at the expense of the tissues is that toxic

metals are removed from the blood within 90 days or less after a toxic exposure. They are shifted into the hair and other non-essential tissues, where they do much less damage. This protects the blood that touches all body tissues, at the expense of the hair. This is why blood serum is not a good place to locate toxic metals, unless the toxic exposure took place in the past month or two.

- *The hair is a cellular biopsy.* This means it provides information from the deepest level of metabolism, where most problems begin. For this reason, it often reveals imbalances long before symptoms or signs arise in the blood or elsewhere.

Other reasons imbalances on a hair test are not found on blood, urine or other tests.

Hair analysis findings are *trends* or *research associations*, rather than diagnoses. Diagnosis is an allopathic approach to disease that too often waits until serious problems have developed before trying to correct the situation. The hair test picks up tendencies or trends. Often, the trend has not yet manifested as symptoms, so it may not be revealed on other types of tests. However, this does not mean that the trend or tendency is incorrect.

Implication of this principle:

- *Do not expect hair analysis findings to be confirmed immediately by blood or other testing.*

THE FLIGHT ANALOGY

A metaphor to help read a hair analysis is that of flying in an airplane. Here are the possible situations:

- *The oxidation rate.* Fast oxidation is similar to flying high and fast, while slow oxidation is flying much slower and lower. Problems with flying too fast and too high are that this exceeds the design specifications of the aircraft. A very fast oxidation rate is extremely hard on one's airplane at any age, even as a small infant. The airplane is never the same due to the extreme stress this puts on it.
- *Unlike a real airplane, in the body a very fast oxidation rate actually uses up or "burns out" many vital minerals or parts of the body.* When the correct nutrient materials are not present to repair the plane, repairs are made instead with inferior toxic metal material such as lead, arsenic, cadmium, mercury and aluminum. These replace the better materials such as magnesium, zinc, selenium and others that make for an intact aircraft.
- *Mineral deficiencies and toxicity develop.* This forces the plane to begin to slow down. Either it just can't fly as fast, or the damage to it makes it very unstable, like a person with ADHD, or panic attacks.
- *Fast oxidation with a low sodium/potassium ratio.* The plane begins to 'stall'. The shape of the low sodium/potassium ratio on an Analytical Research Labs graph even resembles an aircraft wing in a stall position.
- *Slow oxidation.* This is when the plane is flying too low and slower than the way it was designed to fly. It makes a person feel sluggish and often somewhat depressed. The plane is much less maneuverable, meaning that coping with stress is more difficult.
- *Hair calcium level rises.* A crude analogy is smearing cement on cracks and damaged areas of the aircraft. This protects the aircraft, but weighs it down, causing it to fly lower.

- *Some develop a calcium shell.* This is like smearing cement all over the plane, either to protect it from damage or to try to blend in better, or disappear and withdraw from society. These are people who are often seeking to “fly under the radar” or become somewhat invisible.
- *Sympathetic dominance.* This is like revving the engines in a futile attempt to get back to flying high. However, the plane is too damaged physically or psychologically, so it does not work, no matter how hard one revs the engines.
- *Four highs* is akin to speeding up the plane to some degree. However, it is purely temporary and often very unstable and unsafe for health. The plane in this situation is really in bad shape. Fortunately, people in four highs pattern usually slow down easily with our help.
- *Four lows.* This occurs when the rudder or a stabilizer is broken. The plane just repeats endless end-over-end rolls that are difficult to stop. The plane goes nowhere fast and becomes more and more damaged.
- *A hill pattern occasionally occurs.* It is a feeling that one is soaring on top of the world.
- *The three amigos, along with copper, cadmium and a few other toxic metals.* These are special because they appear to support the plane, like little rocket thrusters to help keep a damaged plane flying. However, they are not part of the original design, so they further damage the plane in the process of keeping it flying.
- *Double low ratio and double high ratio patterns.* These are like having a biplane with two wings that are either in stall position (double low ratio) or dive position (double high ratio). In other words, these patterns reinforce the sodium/potassium ratio imbalances.
- *A step down pattern or a high sodium/potassium ratio are ‘dive’ positions.* They can be successful attempts to pick up some speed. These people often have dug in their heels and can continue this way for some time.
- *A step up pattern is a dive upward, an extremely dangerous maneuver that always fails and must be turned around fast.* It includes a low sodium/potassium ratio, which is the stalled wing pattern.
- *Spiritual defensiveness pattern.* This is a very high calcium/magnesium ratio. The imbalance seriously weighs down the plane, keeping one from soaring. In this pattern, the person defends a situation, behavior or attitude when it is time to move on.
- *The phosphorus level, along with the sodium/potassium ratio, are a little like fuel indicators.* When low, the plane is losing altitude due to lowered energy or vitality.
- *Elevated toxic metals.* This is like an airplane that is overloaded with heavy weights. It is never a helpful situation and every effort should be made to “lighten up”. This can help the plane gain more altitude. Those flying high (fast oxidizers) who are loaded with toxic metals are often just throwing them off, which is like the pilot jettisoning extra weight to fly faster.
- *Any change can be traumatic.* In time, each of us becomes used to his own speed of flight. Anything that changes the rate of climb or fall, or the speed or altitude may feel odd and can cause some anxiety or fear. This often slows one’s progress on this healing journey.

The goal is to have a safe and happy flight. A safe flight means to fly at an altitude that is comfortable and safe for the condition of your aircraft, neither too high and fast, or too low and slow. Ideally, your craft should be able to speed up when needed to avoid thunderstorms and other obstacles, or slow way down, at times, to relax the crew. This condition of health and vitality is termed *balanced and flexible oxidation*.

21. COMPONENTS OF HAIR ANALYSIS READINGS

Jack, age 62, was retired and had worked cleaning up toxic chemicals, a very dirty job. His symptoms included constipation, diarrhea, gas, bloating, stomach pain, colitis and gall stones. He also complained of muscle weakness, hypoglycemia, sinus congestion, fatigue, feeling cold in winter, fungal infections, depression, mood swings, anxiety, insomnia, poor memory and a pain under his right shoulder blade that improved when he took some magnesium.

Jack had been to many doctors, both conventional and holistic ones. He had also been to clinics in Mexico and elsewhere looking for answers to his health concerns. His first hair mineral analysis revealed a four highs pattern with a balanced oxidation rate. Iron was extremely high at 6.4 mg%, along with slightly high manganese of 0.05 mg% and a high aluminum level of 1.29 mg%. The last three are called the 'three amigos' because they are often found together in the body and on hair tests.

Selenium was very elevated at 6.54 mg%. This is almost always due to using Selsun Blue shampoo, which contains selenium. In this case, however, I believe it was due to handling toxic waste for years. The test also revealed elevated lead at 0.12 mg%, high mercury at 0.13 mg%, and a very high nickel level of 1.29 mg%. This is quite a toxic load.

Jack did extremely well on a development program. He said it was the best program he had found to really improve his health. All his symptoms slowly improved. He started meditating as well, which improved some family problems he was having. He retested his hair about three times each year for five years. He tended to stay in a four highs pattern.

In 2007, he began to use magnesium oil on his skin, which had become somewhat popular among health-minded people. He said rubbing it on gave him extra energy. His next hair analysis showed a much lower sodium level and an extremely low sodium/potassium ratio of 0.58. This indicates chronic stress on the liver, kidneys and often the cardiovascular system. In addition, the zinc level was six, a dangerous level for anyone, but particularly a man of his age. His hair magnesium level was also outrageously high at 760 mg%, with a calcium/magnesium ratio of 0.13. This ratio must remain between about 5 and 9.5 or health problems will often occur.

*When I saw this test, I asked Jack what he was doing and advised him to stop the magnesium oil immediately. I do not know if he complied. However, soon afterwards he had a massive stroke that left him partially paralyzed. The point of this case is to be very careful with new products of all kinds. If a product makes a person feel better quickly, it is likely acting as a stimulant, even if it is a "natural" substance or procedure. Especially in older people, this can be dangerous because **balance** is a key to health.*

This chapter is an explanation of the *summation principle* from the previous chapter. It is a more detailed look at the components which make up a hair analysis reading. Components of a mineral reading may overlap, and can include the following:

Normal hair metabolism
Mineral deposition in the hair
Mineral retention elsewhere
Displacement
Defenders

Effects of diet
Effects of emotions
Effects of medications
Effects of lifestyle and genetics
Effects of mental development or other factors

NORMAL MINERAL METABOLISM

The normal deposition of minerals in the hair as it grows is represented on the hair analysis chart by the ideal value or optimum range. Dr. Eck decided to use a single set of ideal or optimum hair mineral values for everyone, even though he knew well that babies and small children, for example, tend to have faster oxidation rates than adults. Also, he knew that women tend to have a slightly slower oxidation rate than men, and tend to have a higher copper level than men. As this science becomes more precise, perhaps we will use slightly different ideal values for young children, but for now the current system works excellently.

MINERAL LOSS, DEPOSITION OR EXCRETION THROUGH THE HAIR

Mineral loss, deposition, or excretion through the hair *raises* the hair reading. A mineral may be deposited or excreted through the hair for different reasons:

- *A certain amount of any mineral that is high in the blood will find its way into the hair.* For example, in the alarm stage of stress or fast oxidation state, sodium and potassium are retained by the kidneys as part of the stress response. A certain quantity of this sodium and potassium are deposited in tissues such as the hair.
- *Toxic minerals are deposited in the hair to remove them from circulation.* Toxic metals such as aluminum, arsenic, lead, mercury, cadmium and nickel are deposited to some degree in hair tissue to minimize their harmful effects.
- *Biounavailable minerals may be deposited in the hair.* In slow oxidizers, for example, some calcium and magnesium precipitate out of the blood and deposit in soft tissues including hair.
- *Zinc, in particular, is often elevated when toxic metals are present in high quantity.* The zinc may come out along with the toxic metal, usually copper, or it may buffer or protect the body in some way.
- *On a development program, previously stored minerals are often released and excreted through the hair.* This may include *any* mineral, not just the toxic metals. When a vital mineral is excreted through the hair such as copper or iron, it is very often a biounavailable form of that mineral that the body cannot convert to a usable form, so it must remove it.
- *Phosphorus may be elevated in pubic hair.* This appears to be a characteristic of some pubic hair and not related to any other phenomenon.
- *Environmental or occupational contamination.* A high level is rarely caused by a shampoo, a hair dye, bathing in water with a water softener, or something else.

MINERAL RETENTION ELSEWHERE IN THE BODY

Mineral retention or mineral loss elsewhere in the body causes a *lower than expected* reading on a hair test. It may occur in the following situations:

- *Mineral loss through the kidneys or another route can reduce the hair level of a mineral.* For example, in the alarm stage of stress or fast oxidation, calcium and magnesium are excreted through the kidneys as part of the fight-or-flight reaction. This eventually causes a decrease in the amount of calcium and magnesium deposited in the hair. This is an actual loss of calcium and magnesium from the body.
- *Certain minerals are deposited in sites other than the hair.* For example, copper often deposits first in the liver, the brain, the joints or the female organs before showing up in the hair. Mercury and cadmium collect in the kidneys, brain and elsewhere. A year or more of development may be needed before cadmium is revealed in the hair as it is mobilized from tissue storage sites.
- *During nutritional therapy, it is not uncommon for levels of essential minerals to decrease temporarily.* In some of these instances, the initial reading was rather high, perhaps due to *displacement upward* by a toxic metal. In other instances, the mineral level in question is lower on a retest because it is being *retained elsewhere in the body*. Most often this occurs as vital elements such as zinc or chromium replace toxic metals in critical enzyme binding sites somewhere in the body. This is common and not a cause for concern.
- *Biounavailable minerals often read low.* This is discussed in a paragraph below.

DISPLACEMENT

A hair mineral level may be *elevated* because it is being displaced by another mineral. Henry Schroeder, MD wrote:

“Cadmium avidly displaces zinc and changes or inactivates zinc enzymes, causing disease; arsenic displaces phosphorus, causing disease;...bromine displaces chlorine; beryllium displaces magnesium;...strontium displaces calcium; lithium replaces sodium;...rubidium displaces potassium, as does cesium in bacteria...” (*The Trace Elements And Man*, p. 7).

The most important displacements I have observed include:

- *Iron* can displace zinc, chromium and other minerals, causing higher zinc, chromium and perhaps other mineral readings.
- *Cadmium* displaces zinc, copper and other minerals as well. The zinc level on the test may look normal or even high. As cadmium is removed, a lower, and truer zinc reading occurs.
- *Lead* can displace many minerals, particularly calcium, phosphorus and zinc.
- *Copper* can displace zinc, selenium and chromium at times.
- *Arsenic* can displace magnesium, calcium and other minerals.
- *Mercury* can displace magnesium, calcium and perhaps other minerals.

DEFENDERS

A defender is a mineral that is acting to balance or maintain another mineral level or

ratio. It can *either raise or lower* hair mineral readings. All minerals act to some degree as defenders, as part of the normal homeostatic mechanisms of the body. It is an aspect of the body's *mineral system*, which is discussed in Chapter 10. If we did not have complex buffering systems, drinking a glass of milk that is high in calcium, for example, would easily kill a person by unbalancing the minerals in the body.

Maintaining normal sodium levels. The concept of defenders is related to the stress response in many cases. Maintaining the minerals in balance is a key to reducing stress on the body and keeping the body functioning well. One of the most important minerals to maintain is *sodium*. Most of the defenders that Dr. Eck found relate to maintaining the level of sodium, and keeping the sodium/potassium ratio in balance. The body uses many ways to do this, such as raising copper, cadmium, arsenic, lead, aluminum and other toxic metals. It also may convert to a biounavailable form iron, manganese, chromium or selenium. These I call the *amigos or friends*. They might also be referred to as the *irritants*, because they appear to irritate the adrenals or the sympathetic nervous system. This can help keep the sodium level and the sodium/potassium ratio in a better range.

Defenders complicate hair analysis interpretation. At times, all minerals act as defenders. The trick is to figure out when this is so, in order to properly interpret a hair reading. Otherwise, one may be confused and may supplement a mineral that is not needed, or overlook one that is needed. Most of the time, sorting this out is not difficult. For example, one should assume that some or all of the *amigos or irritants* are present in excess in most slow oxidizers, as these are the people who tend to have a low sodium level. Also, most fast oxidizers today have at least some of them as well, as most are not healthy fast oxidizers.

Attempting to correct defenders. Doctors who are not familiar with the idea of defenders often try to correct a defender. For example, if zinc is low, they give zinc. If copper is high, they give molybdenum to lower copper. This is called **replacement therapy** and it doesn't work well. In fact, attempting to correct a defending level often makes the patient worse, as Dr. Eck discovered on himself and others. The reason is that the body's normal homeostatic mechanisms will resist every effort to alter the defending mineral. Examples of defenders are:

- *Zinc*. The body may raise zinc to lower a high sodium or lower an elevated sodium/potassium ratio. This would reduce inflammation as well. The body may lower zinc, at times, to raise a low sodium or raise a low sodium/potassium ratio. Supplementing excessive zinc to raise a hair zinc level may cause depression by unintentionally lowering sodium and lowering the sodium/potassium ratio.
Zinc also defends against the physical and emotional effects of copper, mercury and other toxic metals. This commonly causes a high hair zinc level. It normalizes by itself when the toxic metals are gone. No attempt should be made to alter an elevated zinc in most all cases.
- *The amigos or friends* are special cases of defenders that raise sodium. The body appears to accumulate aluminum, iron, manganese and, at times, selenium and chromium to help boost sodium and adrenal activity. These minerals may accumulate in the form of oxides, which are biounavailable and toxic.
- *Copper, cadmium, lead, aluminum, arsenic and other toxic metals* often also raise the sodium level and the sodium/potassium ratio. They accumulate more in slow oxidizers, perhaps in part because slow oxidizers have lower sodium levels. Attempting to remove toxic metals with chelation, for example, does not take into account these complex defending roles of the toxic minerals. It makes chelation less effective and, at times, dangerous.

- *Calcium* can defend against too much stress or an inability to handle stress properly. Eventually, this can lead to a *calcium shell pattern* and psychological withdrawal.
- *Copper* and *mercury* may also defend against infections in the body, as these minerals have a powerful antiseptic effect. This is a different type of defender, however, because the minerals are not defending specific mineral levels or ratios.
- To some degree, all the minerals defend each other as they are part of a unified system.

Correcting defenders is tricky. A major problem with replacement therapies is that correcting defending minerals is not easy. *One must remove the need for the defender.* This requires knowing what the defender is really doing, and then correcting the underlying situation.

Tricking the body. Sometimes we can be very clever and give nutrients that will not only correct the critical hair mineral ratios and levels, but also correct a defender as well. This is what Dr. Eck's formulas such as Limcomin do. This is why skipping one of these products because it seems redundant or for any other reason is not a wise idea.

EFFECTS OF EMOTIONS ON TISSUE MINERAL PATTERNS

Emotions have powerful effects on biochemistry, often through the action of the sympathetic nervous system. The condition of this nervous system can be read on a hair analysis in many instances. A person's chemistry and hair analysis may reflect attitudes and emotions as much as they reflect one's food intake, lifestyle, medical conditions or any other factor. The large and important topic of how thoughts and emotions affect hair mineral analyses is discussed in much greater detail in Chapters 36 through 43.

PRESCRIPTION DRUGS AND THEIR EFFECT ON HAIR MINERAL READINGS

Prescription medications will affect hair mineral readings to the degree that they affect the stress response and body chemistry. Most drugs act at fairly superficial levels, though there are exceptions such as hormones, antibiotics, adrenergic blockers and others. The effects of medical and recreational drugs on hair tests is a complex area, especially when combinations of drugs are involved. Here are just a few possible effects of drugs on hair mineral readings:

- *Mercury* found in thiazide diuretics, contact lens solution and perhaps a few other drugs or cosmetics can possibly alter the hair mercury level, though the amount in them is not large.
- *Aluminum* is high in some anti-acids, anti-perspirants, and it is used as a base for many cosmetics. Prolonged use can definitely raise the hair aluminum level.
- *Fluoride* is found in anti-depressant drugs such as Prozac, and in some antibiotics such as Cipro. This may account for some of their therapeutic effects as well as some side effects.
- *Drugs may also contain toxic metals introduced during manufacturing procedures.*
- *Drug effects on a hair test are dose-dependent and can depend on the duration of use.*
- *Hormone replacement therapy may initially boost sodium and the adrenal ratio.* Later, the effect is often the opposite as the adrenals are weakened by the drug.
- *Ritalin, Adderall, other amphetamines and all stimulants tend to increase adrenal activity at first, but eventually contribute to adrenal exhaustion.* Ritalin may raise the sodium/potassium ratio. This may be why it works on certain children and not on others.

- *Cortisone-containing drugs initially raise the sodium level.* They may raise phosphorus by increasing protein catabolism. Eventually, they cause a lower sodium level, a lower phosphorus level, and a much lower sodium/potassium ratio.
Corticosteroids, in particular, lower calcium and copper in some cases of slow oxidation. This can relieve some symptoms, but may lead to osteoporosis and connective tissue problems later. Those on corticosteroids also may require more vitamin D.
- *The effects of combinations of drugs are harder to evaluate.* I don't even try in most cases.
- *Most drugs deplete nutrients, at times horribly.* Cancer chemotherapy, for example, is a common treatment that depletes many nutrients. At times, patients are warned not to take certain supplements with chemotherapy as they may interfere with the anti-cancer effects of the drugs. This can be because a major part of the drug's effect is to deplete certain nutrients.

I do not take clients off drugs, as that is not my area of expertise. It is a decision each must make, in conjunction, perhaps, with the prescribing doctor. I advise doctors to just base their recommendations on the hair readings as they appear on the test, since drug effects are often complex. With development science, most drugs are not needed, eventually. Our goal is to enable the client to reduce drug use, and this occurs in almost all cases.

EFFECTS OF LIFESTYLE ON HAIR MINERAL READINGS

Lifestyle is often a major cause of hair mineral readings. Always inquire about habits of sleeping, exercise, eating and others. A person's occupation is also important in some cases.

- *Exercise* temporarily raises sodium and potassium, and lowers calcium and magnesium (by stimulating adrenal activity). However, excessive exercise weakens the adrenals and eventually causes adrenal burnout.
- *Resting* has the opposite effect of exercise. In the short term, it lowers the sodium and potassium levels because the adrenals rest more. Over a period of months, however, it will slowly enable the adrenals and thyroid to rebuild, and thus it is one of the most potent ways to help speed up and normalize the oxidation rate.
- *Fatigue* or acute lack of rest can **increase** the oxidation rate in a fast oxidizer. This is part of the fight-or-flight response to more stress. Eventually, however, inadequate rest always slows the oxidation rate in both fast and slow oxidizers.
- *Lack of emotional control* is associated with depletion of zinc, and with copper toxicity. The oxidation rate may fluctuate.
- *Common occupations* where there may be toxic metal exposure include plumbing, electrical work, welding, auto repair, painting, other arts, printing, machine shop work and others where there is exposure to metal dusts. Other occupations may also possibly expose workers to toxic chemicals that may influence a hair analysis in complex ways.

OTHER FACTORS THAT MAY AFFECT HAIR MINERAL READINGS

In individual cases, other factors that may affect the mineral readings are:

- *Structural problems such as chiropractic misalignments.*
- *Genetic imbalances and imperfections of many kinds such as Down's syndrome.*

- *Electromagnetic fields, even from cell phones and portable phones, if exposure is prolonged or severe.* Some far infrared saunas also emit large electromagnetic fields.
- *The presence of chronic or acute illnesses such as infections, arthritis and many others.*
- *Injuries, accidents, surgeries or other traumas.*
- *Other stressors.* These can even include “positive” stressors such as moving to a new house, getting married, a new child in the family, or others.
- *Development.* As a person develops the subtle human bodies, there can be unusual effects on a hair analysis in response to changes at deep levels of mental functioning.

PUTTING IT ALL TOGETHER

Here is an example of how to put together some of the interpretation information from this chapter and the next few chapters. Use it as a sort of quiz, if desired. Mrs. Smith’s first hair mineral analysis revealed the following:

Calcium:	156	(ideal = 40)	Sodium:	2	(ideal – 25)
Magnesium:	7	(ideal = 6)	Potassium	1	(ideal = 10)

Basic interpretation: First, identify the important patterns in these numbers, as follows:

- *Slow oxidation.* The calcium/potassium ratio is 156 (above 4) and the sodium/magnesium ratio is 0.28 (less than 4.17) . This is the definition of an *extreme slow oxidizer*.
- *Biounavailable calcium.* The calcium level is greater than about 100 mg%.
- *Low sodium/potassium ratio.* The ratio is 2, less than 2.5.
- *Sympathetic dominance.* The potassium level is 4 mg% or less.
- *Burned out sympathetic dominant.* This combines a low potassium and a low Na/K ratio.
- *Triple burnout.* We have slow oxidation, a low Na/K ratio and a low potassium level.
- *Hidden copper.* Indicators are 1) high calcium, 2) low potassium, and 3) a low Na/K ratio.
- *Spiritual defensiveness pattern.* The calcium/magnesium ratio is way above 13.5:1.
- *Slow bowl pattern.* A bowl pattern combines a low Na/K ratio and a high Ca/Mg ratio.
- *Stress from within and without.* This is a newer pattern discussed in Chapter 22. It is present when both spiritual defensiveness and sympathetic dominance are present together. It was not part of Dr. Eck’s original research.
- *Likely ‘three amigos’:* Most slow oxidizers have this to some extent, especially by age 55.

The patterns above can be further interpreted in terms of any body system, such as:

- *Structural.* Slow oxidation is often associated with some muscle weakness. Biounavailable calcium is associated with muscle tension, tightness and perhaps muscle cramps. Copper imbalance commonly contributes to scoliosis and other back problems. Joint pain may occur due to low sodium and low potassium (weak adrenals), a low sodium/potassium ratio (excessive tissue catabolism or breakdown) and/or the three amigos (toxic metal accumulation or oxidant damage and inflammation).
- *Endocrine.* Mrs. Smith’s test indicates very weak adrenal and thyroid activity. She also likely has imbalances affecting the ovaries, pancreas and pituitary glands as well.

- *Cardiovascular.* Slow oxidizers are often cold, with poor circulation and low blood pressure earlier in life until arteriosclerosis sets in later and may raise the blood pressure. A low sodium/potassium ratio is associated with excessive tissue breakdown, which can affect the heart. Copper toxicity often affects connective tissues such as the arteries and veins.
- *Other body systems.* One could interpret the results in terms of the neurological, digestive, skin or integumentary system, eliminative, sensory or another system as well.
- *Autonomic.* The sympathetic nervous system is continuing to operate excessively, but is exhausted. Overall, Mrs. Jones has flipped into a parasympathetic state of slow oxidation. This is not a healthy parasympathetic state, but rather a consequence of almost total exhaustion of the opposing branch of the autonomic system, the sympathetic branch.
- *Mental and emotional.* This is a large area of interpretation with this particular chart:
- *Depression possible.* We note how exhausted Mrs. Smith is, which often is associated with feelings of depression, and perhaps despair or even suicidal tendencies.
- *Negative feelings.* The low sodium/potassium ratio usually indicates some degree of negative emotions such as frustration, resentment and hostility. It may signal she is “beating her head against a wall” or at least has significant chronic stress in her life in some way.
- *Pushing hard physically or mentally.* Sympathetic dominance indicates that Mrs. Smith pushes herself hard, although in this instance she is quite exhausted from it, a pattern one may call a *burned out sympathetic dominant pattern*.
- *Lifestyle.* Mrs. Smith may be holding on to an attitude or perhaps a job, relationship or something else that needs to change. According to the hair test, this is affecting her physical and/or emotional functioning to a significant degree.
- *Feeling stuck emotionally or in some other way.* A bowl pattern tends to indicate a feeling of being stuck with few options. The pattern called *stress from within and without* may be telling us that she feels stressed or pulled in many directions at once.
- *Cloudy thinking.* Hidden copper toxicity may be affecting her thinking, memory, emotional state and other aspects of mental “tuning” in particular, which is making all this worse.
- *Dietary.* Mrs. Smith most likely craves sweets, and perhaps salt due to her slow oxidation rate. Many in her condition crave chocolate for its copper and perhaps magnesium content. One would want to ask what she eats to also gain deeper insights into possible causes for some of the imbalances on her hair mineral analysis.

Dissecting the readings. In addition to all of the above, one can also “dissect” the mineral readings, in accordance with concepts such as displacement, defenders and others discussed earlier in this chapter. For example:

- *The calcium level.* Most of Mrs. Smith’s calcium level is likely due to adrenal and thyroid gland weakness. Some calcium, however, is also probably bioavailable when it is this high. Some of the reading may also be due to a tendency to withdraw psychologically.
- *The sodium level.* This reading is mainly due to adrenal exhaustion, and perhaps, in part, to frustration and depression. Hidden copper and the ‘three amigos’ may also be supporting the *sodium* and perhaps the *potassium* levels. This means the levels are really lower or worse than appear, but the ‘amigos’, and perhaps copper, are acting as crutches to hold them up.

Getting to know a client well will help a practitioner gain a deeper understanding of all factors that may be affecting hair mineral readings.

22.

HAIR ANALYSIS INTERPRETATION – STEP I. MACROMINERAL PATTERNS ON A HAIR MINERAL ANALYSIS

*Greg, age 39, has been addicted to methamphetamines in the past. He is now living with friends, of whom one is a development practitioner. He feels and looks well on a development program. However, several times he has relapsed into drug usage. This case is interesting because Greg's hair tests have consistently revealed a difficult **resistance-to-change pattern** or **stalled transition pattern** - fast oxidation with a very low sodium/potassium ratio. In spite of attempts to break through the pattern, it has persisted for over two years.*

Greg is basically having difficulty transitioning from fast to slow oxidation. He may be attracted to stimulant drugs, in fact, to keep his oxidation rate fast. The main reason for this difficulty is that moving into slow oxidation is often accompanied by feelings of depression, perhaps in part due to greater self-awareness and perhaps a lower energy level. It can be frightening for some people. While Greg uses amphetamines to boost his oxidation rate, others might use dietary sugars, caffeine, cigarettes, lots of sex, loud music, cocaine or other stimulants to stay in fast oxidation.

On his latest retest, Greg is finally beginning to eliminate large quantities of lead, mercury and cadmium. Some of this may have come from drug use, but some was probably acquired at a young age or even in utero. Hopefully, as Greg continues to improve his body chemistry, and with the support of his friends, he will eventually be able to move into slow oxidation without needing to resist this more introverted condition of the body chemistry.

This chapter discusses the major electrolyte or macromineral patterns that can be identified on a hair mineral analysis. I have made an effort to keep the information concise. More thorough explanations for many patterns are at www.drwilson.com. I noted which patterns are newer, since Dr. Eck's passing about 14 years ago, to avoid diluting or confusing his original work. An important term used in this chapter is **movement**. It is how one handles situations that arise. For example, is the person responding vigorously, or is he stalled, perhaps.

Dr. Eck and I have tried to use common English words to describe the patterns. The idea is to convey technical concepts in simple language so that anyone can understand them. It is important to recall that the patterns are not merely numbers on a graph. They represent basic physiological, psychological and even spiritual tendencies or trends. The patterns are arranged from the simplest to the most complex. Others exist, but appear to be less important. The **Initial Hair Analysis Checklist** on the next page summarizes how to interpret a hair analysis and mentions the major patterns.

INITIAL HAIR ANALYSIS INTERPRETATION CHECK LIST

Name: _____

Date: _____

Initial pattern:

___ **Four lows** (needs a special program, so look for this pattern first)

Oxidation Type and Rate**Fast oxidizer**

___ with sodium/potassium ratio below 2.5

Slow oxidizer**Fast mixed oxidizer****Slow mixed oxidizer****Major Ratios****Sodium/potassium ratio (Na/K):**

___ excellent (2.5 - 5)

___ high (above 5)

___ low (below 2.5) (*hidden copper*)

___ extremely low (below 1) (*trauma Na/K*)

Calcium/magnesium ratio (Ca/Mg):

___ excellent (4 - 9.5)

___ high (9.6 - 13.5)

___ spiritual defensiveness (Ca/Mg > 13.5)

___ low (below 4)

Other important patterns:

___ sympathetic dominance ___ bowl

___ spiritual defensiveness ___ hill

___ poor eliminators ___ step down

___ three amigos ___ double low ratio

___ anchors/pivots ___ step up

Individual Mineral Levels:**Calcium (Ca)**

___ excellent (39-65)

___ high (65 + mg%) (*hidden copper*)

___ calcium shell (above 165 mg% for women OR above 155 mg% for men)

___ low (below 40 mg%)

Magnesium (Mg)

___ excellent (4.5-8)

___ high (above 8 mg%)

___ low (below 4.5)

Sodium (Na)

___ excellent sodium (16-30 mg%)

___ high (above 30 mg%)

___ low (below 16 mg%)

Potassium (K)

___ excellent (9-14 mg%)

___ high (above 14 mg%)

___ low (5 - 8 mg%) (*hidden copper*)

___ below 5 mg% (*sympathetic dominant*)

Zinc (Zn)

___ apparently normal zinc (13-19 mg%)

___ high (above 19 mg%)

___ low (below 13 mg%) (*hidden copper*)

Phosphorus (P)

___ acceptable phosphorus (13-16 mg%)

___ high (above 16 mg%)

___ low (11-12 mg%)

___ very low (below 11 mg%)

High Toxic metals:

___ Lead (Pb) above 0.06 mg%

___ Mercury (Hg) above .035 mg% (*hidden copper indicator*)

___ Cadmium (Cd) above 0.008 mg%

___ Arsenic (As) above 0.008 mg%

___ Nickel (Ni) above 0.019 mg%

___ *The amigos*: Aluminum above 0.04

mg%, iron above 2 mg%, manganese above .04 mg%.

Other Minerals:

___ high copper (above 2.5 mg%)

___ high selenium (above 0.12 mg%)

___ high chromium (above 0.12 mg%)

___ high cobalt (above 0.002 mg%)

___ high molybdenum (above 0.002 mg%)

___ high lithium (above 0.002 mg%)

Dr. Paul Eck spent 25 years developing his method of interpreting a hair mineral analysis. It is somewhat complex because human beings are complex. It uses all the principles discussed in Chapter 7 through 12 such as cybernetics, layers of adaptations, holography and fractal chemistry. I hope to present his method in a step-by-step fashion that makes it easier to understand and use.

THE MINERALS INVOLVED IN THIS METHOD OF INTERPRETATION

The interpretation requires 20 or so minerals, including the:

- *Macrominerals*: **calcium, magnesium, sodium, potassium** and **phosphorus**.
- *Trace elements*: **iron, zinc, copper, manganese, chromium** and **selenium**. Other trace minerals may be helpful on occasion to evaluate an occupational or other toxic exposure. Otherwise, however, they are not needed at this time.
- *Toxic metals*: **lead, arsenic, mercury, cadmium, aluminum** and **nickel**. Other toxic metals may be helpful to evaluate certain toxic exposures. These include uranium, beryllium, antimony, tin and others. However, the toxic metals are not as critical as the macrominerals and the trace minerals.

NOTE: *Hair samples must not be washed at the laboratory to obtain accurate mineral readings.* In particular, the sodium, potassium, calcium and magnesium readings will be erratic and unreliable if the lab washes the hair, as most labs do. Only two laboratories, Analytical Research Laboratories (ARL) and Trace Elements, Inc. (TEI) do not wash the hair at the lab, at this time. I much prefer ARL for hair testing, as they list the ideal values and their graphs are much easier to read. All of the other hair element testing laboratories around the world wash the hair with alcohol, solvents and/or detergents. This definitely harms the macromineral readings.

THE RATIOS AND PATTERNS INVOLVED IN THIS INTERPRETATION

Ratios. Only four ratios are used in this interpretation protocol. While others may be listed on the graphs or reports, Dr. Eck's method only involves the **sodium/potassium, sodium/magnesium, calcium/potassium** and **calcium/magnesium** ratios.

Patterns. The interpretation also involves about three dozen patterns of the minerals. These are explained next, starting with the simplest and moving to the more complex.

Levels of complexity on hair tests. Many doctors cannot believe all that can be discerned from a hair mineral analysis. The reasons for this are that the information is layered and interconnected as follows:

- *The mineral levels or readings.* This is the most obvious, but not the most important aspect of the interpretation.
- *The ratios between the minerals.* Ratios represent relationships between the minerals.
- *Basic mineral patterns.* These consist of one or more mineral levels and/or one or more ratios. For example, the oxidation rate is a basic pattern that combines two ratios.
- *Complex patterns.* These consist of combinations of basic patterns and other mineral levels and/or ratios. An example of a complex pattern is called a *tired fast oxidizer* or *slow oxidizer under stress*. It includes a basic pattern (fast oxidation) and another ratio (Na/K).

- *Combinations of all the above.* A single hair test contains at least 20 levels, 4 ratios, and often a half dozen basic and complex patterns.
- *Retests add many more layers of complexity.* Retests involve all the above, plus comparisons between all of the previous levels, ratios and patterns, and the current ones. This complex subject is discussed in Chapter 24. Retests are not a major focus of this book due to their complexity and because understanding them is not needed to use the hair test successfully.
- *Progressions add more complexity.* A progression is a pattern that only appears if one compares three or more hair mineral analyses, each performed several months apart.
- *'Dissecting' the readings into their components can yield much more information.*
- *Different kinds of interpretations.* Each level, ratio, pattern, combination, retest and progression can be interpreted on a purely biochemical level. However, they can also be interpreted in terms of the stress theory of disease, systems theory, emotionally, in terms of movement patterns, and in other ways, as well.

THE ORDER OF HAIR TEST INTERPRETATION

Do the initial interpretation in three steps. If you always follow this order, it will make interpretation much easier. The three steps are:

1. *First interpret the calcium, magnesium, sodium and potassium levels, ratios and patterns.* Often, up to 80% or more of the evaluation involves just these four minerals. This part of the interpretation is discussed in this chapter.

2. *Interpret zinc, then phosphorus, then the toxic metals, and then the other major trace minerals.* This is discussed in Chapter 23.

3. *Add other data about the client such as symptoms, lifestyle, diet and medications. Then put it all together.* This aspect of interpretation is also discussed in Chapter 23.

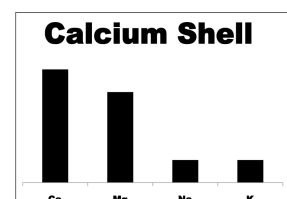
DETAILS ABOUT STEP 1.

Note: Descriptions of patterns are somewhat brief to save space. For many more details, read the longer, and frequently updated articles about each pattern at www.drlwilson.com.

PATTERNS CONSISTING OF A SINGLE LEVEL

- Very high calcium – A CALCIUM SHELL.
- High magnesium – A SHELL, ALSO.
- Low calcium – AGGRESSIVENESS.
- Low magnesium – BELLIGERENCE.
- High sodium and/or potassium – ADRENAL STRESS.
- Low sodium - BASIC BURNOUT.
- Low potassium – SYMPATHETIC DOMINANCE.

1. A CALCIUM SHELL OR TIRED – VERY HIGH CALCIUM. Definition. A hair calcium level greater than about 170 mg%. The higher the calcium level, the more severe the pattern. A calcium level greater than 250 mg% indicates a severe calcium shell. The laboratory occasionally reports calcium levels as high as 1200 mg%.

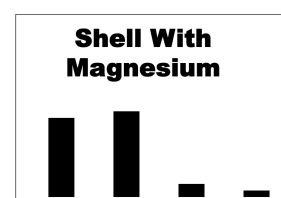


Interpretation and symptoms:

- **Whom.** This pattern is seen most often in young men and women, and more in women between the ages of 10 and 50 years of age. Older people cannot live well with it.
- **Causes.** Reduced solubility of calcium, usually along with magnesium, causes precipitation of some calcium and magnesium out of the blood. They deposit in the soft tissues such as the hair. Slow oxidation, adrenal exhaustion or perhaps psychological reasons may be causes.
- **Visually.** The pattern looks like a wall of calcium on the left hand side of the graph.
- **Physiology.** Calcium, magnesium and copper are usually at toxic levels and biounavailable to some degree. Often the person has calcium deposits in the joints, arteries, kidneys, brain and elsewhere. The oxidation rate is usually slow. Hyperparathyroidism rarely occurs. There can be a numbing of all sensation and thus lower sexual desire and sexual responsiveness.
- **Signs and symptoms.** Common symptoms include those of biounavailable calcium such as irritability, insomnia, muscle tightness, muscle cramps, and other symptoms of low serum calcium. These are mixed with symptoms of high calcium such as aches and pains, arthritis, weakness, fatigue, depression, and flaccid tissues.
- **Psychology.** This is often a sensitive person who is withdrawing psychologically. At times, this is due to excessive stress or difficulty handling stress. The pattern can also just be a response to adrenal exhaustion and the need to protect oneself from further stress. Defensiveness, guilt and depression feelings are often present, and the person is often slightly out of touch with reality and living “behind a wall of calcium”. This pattern is often one of retreat into oneself, with suppression or repression of feelings and even thoughts. It can also be a defense mechanism to protect against the ravages of a copper imbalance or a high-copper personality type. People with this pattern are often spiritually-minded individuals who are struggling to survive and thrive and in a world that is not of their making and not really to their liking. Most of them are lovely people who are more intelligent and sensitive than average and need assistance to cope with this world. Helping them is a true gift.
- **A death pattern if very high.** A hair tissue calcium level greater than 500 mg% is always associated with a tendency for cancer, despair, and being very out of touch with reality.
- **Schizoid pattern.** Some with this pattern are out of touch with reality or “floaty” at times. This is usually related to high copper and perhaps other mineral imbalances. The higher the calcium level, as a rule, the more out of touch the person is with certain aspects of reality.
- **Retest consideration.** On a retest, a calcium level may rise due to an elimination of biounavailable or “metastatic” calcium from the tissues. This can mimic a calcium shell, when in reality it is not the case. Often in these cases, looking to the magnesium level will help one decide if it is a shell. If the magnesium is low ratiowise to calcium on a retest, it is less likely a calcium shell situation.
- **Type of movement.** Usually very slow movement with the brakes on quite forcefully.
- **Traditional Chinese medicine and chakras.** Very yin in most cases. Fifth chakra problems in some cases. This energy center is associated with expression and its inhibition.

2. A MAGNESIUM SHELL OR HIGH MAGNESIUM.

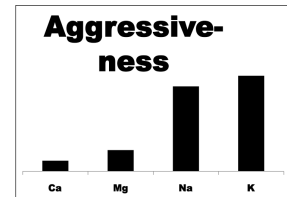
Definition. A magnesium level greater than about 20 mg%. This is similar to a calcium shell. All that is written above about high calcium applies to a high magnesium level. However, it differs in that a calcium



shell is more common. Also, magnesium is a “softer” element so the symptoms are not as harsh as with calcium. They include very low energy and consequent fatigue, a tendency for depression, muscle weakness, muscle cramps and psychological withdrawal. On a retest, a high magnesium can be an elimination of bioavailable magnesium in some cases, though not in all cases.

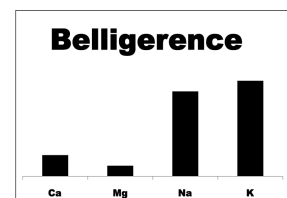
3. AGGRESSIVENESS – LOW CALCIUM. Definition. A calcium level below 15 mg%. The lower the calcium level, the more extreme the pattern. **Interpretation and symptoms:**

- **Whom.** This occurs in fast oxidizers or with a four lows pattern, and often in young babies or children, or in some adults.
- **Causes.** Anything that results in an alarm reaction to stress may cause this pattern, such as an illness, toxic metals, nutrient deficiencies, emotional upset, or other.
- **Physiology.** Calcium is low because in a fight-or-flight response or alarm reaction to stress, the body eliminates calcium in the urine. If it is not replaced adequately, or if stress is intense enough, the calcium level in the blood or tissues can fall dangerously low. Low calcium causes many other effects, including enhanced cell permeability. This can cause severe allergies, hyperthyroidism or Grave’s disease, hyperadrenalism or a Cushing’s type of syndrome, and other biochemical imbalances.
- **Signs and symptoms.** These may include angina, muscle tightness and tension, muscle cramps or spasms, insomnia, irritability, nervousness, extreme anxiety, tachycardia, heart palpitations, skipped or extra heart beats, arrhythmias, exhaustion, tetany, clenched teeth and other symptoms of calcium depletion. A fatal heart attack in adults and seizures in children are possible. Thyroid imbalance is possible in adults. (William Koch, MD described in detail the effects of parathyroidectomy in animals, which sounds similar to this pattern).
- **Psychology.** Aggressiveness and a pronounced fight-or-flight tendency and attitude are common. One is prone to primitive animal-like vigorous responses to stress. The person is often hypersensitive, ‘touchy’ or easily upset. Paranoia is possible, meaning very distrustful of others and overly suspicious. The person is often unhappy due to these imbalances.
- **A low level of psychological buffer elements.** Calcium, magnesium and zinc buffer stress.
- **Sexuality.** Adults can be hypersensitive to touch and feeling. It is the opposite of the somewhat numb and suppressed person with a calcium shell.
- **Type of movement.** Fast, forward, and often uncontrolled movement. Easily moves too fast and burns out or harms self and others as a result.
- **Traditional Chinese medicine and chakras.** This pattern is more yang or ‘male’. The person is often well grounded. Problems often occur involving the second chakra.



4. BELLIGERENESS – LOW MAGNESIUM. Definition. A hair magnesium level of 1 or 2 mg%. **Interpretation and symptoms:**

- **Whom.** Babies, young children and a few fast oxidizing adults.
- **Causes.** Acute stress. Causes are similar to the pattern above. Also, most diets are very low in magnesium, and this could contribute to it.
- **Physiology.** Magnesium is lost as part of a fight-or-flight response.
- **Signs and symptoms.** These are similar to the calcium depletion pattern above. The only exception is that low magnesium often causes more heart symptoms, including heart attacks irregular heart beats, palpitations, angina pain, tachycardia and others.

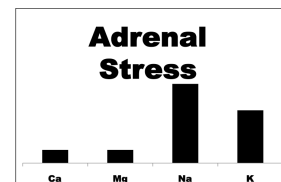


- **Psychology.** Belligerent or argumentative, contentious or quarrelsome. Not as aggressive as a simple low calcium pattern, however. Also very irritable and hypersensitive due to low calcium and magnesium, and a fight-or-flight tendency.
- **Type of movement.** Basically similar to *aggressiveness pattern*, but a bit more tempered.
- **Traditional Chinese medicine and chakras.** The same as the low calcium pattern above.

5. ADRENAL STRESS – HIGH SODIUM. Definition. A hair sodium level greater than about 100 mg%.

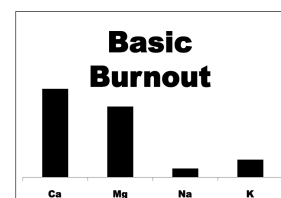
Interpretation and symptoms:

- **Whom.** Almost always either a true fast oxidizer or a temporary fast oxidizer. Often found in babies and children.
- **Causes.** Acute stress, an alarm reaction from any cause such as pain, trauma, illness, toxic metals, chemical poisoning or emotional issues.
- **Physiology.** High aldosterone secretion by the adrenal glands for any reason causes sodium retention by the kidneys. This is a possible kidney and liver stress pattern, as well as a hyperthyroid and hyper-adrenal pattern.
- **Rarely a sodium loss.** Very rarely this pattern occurs with a sodium loss into the hair tissue. This is not a case of fast oxidation and it corrects quickly on a development program.
- **May be part of a four highs pattern.** This pattern is a secondary alarm reaction and is discussed later in this chapter.
- **Signs and symptoms.** Anxiety, irritability, a volatile personality, high blood pressure, slightly higher blood sugar, tachycardia, ADD, ADHD, water retention or edema and other symptoms associated with overactive adrenal glands and perhaps hyperthyroidism.
- **Psychology.** Very acute stress is present, a fight-or-flight response.
- **Type of movement.** Strong, effective, and at times, uncontrolled forward movement.
- **Traditional Chinese medicine and chakras.** A more yang pattern with yang rising, perhaps. At times, a second chakra problem.



6. BASIC BURNOUT – LOW SODIUM. Definition. A sodium of 1 to 4 mg%. The lower the sodium, the more extreme the pattern. This pattern is all too common today, affecting over 50% of the people whose hair analyses I review. **Interpretation and symptoms:**

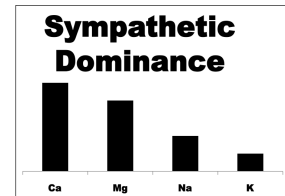
- **Whom.** This is almost always seen in adults, and rarely in older children with either slow oxidation or a four lows pattern.
- **Causes.** Prolonged and chronic stress, nutrient imbalances or toxic metal accumulation.
- **Physiology.** Low aldosterone and kidney weakness cause sodium loss through the kidneys. The cause for this is usually adrenal exhaustion or burnout for some reason.
- **Visual.** It looks like sodium is “drained”. This is a basic exhaustion pattern on a hair test.
- **Signs and symptoms.** Fatigue, depression, allergies due to adrenal weakness, low blood sugar, low blood pressure (unless arteriosclerosis is present), dry skin and hair, low body temperature, cravings for sweets or salt, and perhaps other cravings, joint pain, and chronic illnesses of all kinds is common.
- **Psychology.** Depleted, depressed, burned out and possibly despairing, hopeless and suicidal. Often brain fog is present. A person may also be compulsive, bipolar and be withdrawn.
- **Type of movement.** Almost stopped or totally stalled, or even reversed movement if the sodium/potassium ratio is low.



- **Traditional Chinese medicine and chakras.** Very yin and perhaps yin or blood deficiency with it. Usually ungrounded, needing first chakra balancing and strengthening.

7. SYMPATHETIC DOMINANCE – LOW POTASSIUM.

Definition. A hair potassium level of 4 mg% or less. The lower the potassium level, the more extreme the pattern. A newer indicator is a three highs or four highs pattern with a Na/K above 3. Secondary indicators are a sodium/potassium ratio greater than about 4, and a Ca/Mg above 9.5. These need not be present for the pattern to exist.



Interpretation and Symptoms.

- **Whom.** Very common, perhaps more so in women than in men. Those with the pattern are often more mentally oriented and often spiritually-minded people who are traumatized.
- **Causes.** Severe efforting. Continuing to push oneself as though one is a fast oxidizer when the body has moved into the much lower energy pattern of slow oxidation. Lifestyle and mental tendencies are the main cause, though toxic metal poisoning can keep the pattern going by irritating the brain and nervous system.
- **Physiology.** Adrenal weakness, plus an extreme yin condition of the kidneys, apparently causes potassium loss from the tissues, and perhaps from the serum as well. This is a lifestyle pattern, meaning it is due mostly to one's thinking and behavior rather than to mainly biochemical imbalances, the diet, illness or a physical ailment. However, toxic levels of copper, iron, manganese, aluminum, cadmium and others can hold a person in this pattern. The person spends too much time in a fight-or-flight mode or 'sympathetic overdrive'. In other words, the sympathetic nervous system is overused. This prevents adequate rest and rejuvenation of the body, and eventually causes severe health problems.
- **Signs and symptoms.** Fatigue, even if the person denies it, worry and anxiety. Usually some low blood sugar, low blood pressure, hypothyroidism, occasionally Grave's disease, aches and pains, slow oxidation symptoms, copper toxicity symptoms, low temperature, and possibly diabetes and cancer. Others may include constipation, other digestive problems, depression, joint stiffness, calcium deposits and female problems such as PMS.
- **An important fast-to-slow oxidation transition or resistance-to-change pattern.** The body has moved into slow oxidation, but the person is still thinking and acting like a fast oxidizer in some ways, usually with too much physical activity or excessive worrying. Dr. Eck called these people "a mind without a body". Slowing down is hard for them, as it puts them in touch with their fatigue, so it makes them feel worse.
- **A burnout pattern.** These individuals are always exhausted to a degree from running around or worrying so much. Most have symptoms of adrenal exhaustion or burnout.
- **Secondary hyperthyroidism.** With too much stress, sympathetic dominance can develop into Grave's disease or hyperthyroidism. More details about this are in Chapter 28.
- **Psychology.** Often very intelligent, sensitive, spiritually-minded people, trying to fit in with friends, family, work or other life aspects. The person is often frantically running around or running around in one's head by worrying a lot. Driven, uptight, wound up, and often somewhat compulsive. An ADD pattern in children and adults. They are often distractible, anxious or just active all the time. If they slow down, they may "crash" and don't feel like doing anything at all. There is a great need to relax. They are often ungrounded.
- **Doingness rather than beingness.** A person with this pattern is often caught up in "doing", rather than relaxing into "beingness". In fact, we are human *beings*, not human *doings*.

- **May lead to a spiritual defensiveness pattern**, which is often a reflection of an improper attitude of anger or pushing to achieve something that is not really in one's best interest.
- **Correction can be slow.** The pattern is difficult to correct with diet and supplements alone, though easier in many cases than correcting a four lows pattern. If needed, a modified four lows type of supplement program will often speed up correction of sympathetic dominance.
- **Diet.** Sympathetic dominants often need more carbohydrates in the diet due to their peculiar blood sugar imbalances. They also need more fat than regular slow oxidizers because they have some qualities of fast oxidation. This is important in some, but not all cases.
- **Sauna therapy helpful.** Sauna therapy inhibits the sympathetic nervous system and is wonderful for those with the pattern. However, it will make them tired for a while.
- **Type of movement.** Slow forward movement, deliberate, willful, unable to move back into fast oxidation. Often a willful or stalled aggressive response pattern.
- **Traditional Chinese medicine.** Very yin with some yang rising. Ungrounded, and requiring much more first chakra grounding energy.

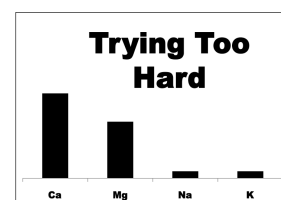
IMPORTANT PATTERNS CONSISTING OF TWO LEVELS

- High calcium with low potassium – TRYING TOO HARD.
- High calcium with high magnesium – BIOUNAVAILABLE CALCIUM.

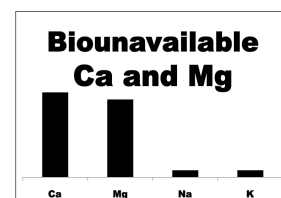
1. TRYING TOO HARD – HIGH CALCIUM WITH LOW POTASSIUM. **Definition.** A calcium shell (calcium greater than about 170 mg%) and sympathetic dominance (potassium of 4 mg% or less).

Interpretation and symptoms:

- **Whom.** This is seen mainly in spiritually-oriented or sensitive slow oxidizing young women and some younger men. It may be found in some vegetarians, along with low zinc, high copper and low phosphorus. Those with the pattern are often unhappy in some way.
- **Causes.** Trying very hard to fit in can wear out the adrenals and lead to a calcium shell. This is a copper personality type as well. A weakened body, improper attitudes or just being out of touch with reality can also cause the pattern to emerge.
- **Physiology.** Adrenal burnout or exhaustion coupled with biounavailable calcium.
- **Psychology,** Trying hard to fit in and not succeeding, so one withdraws into a shell. Possibly a “shattered” pattern. This is a personality trait in which a person is ungrounded and seeking hard, but not really knowing what he or she is looking for.
- **Signs and symptoms.** Usually a combination of those of a calcium shell and those of adrenal exhaustion and sympathetic dominance such as irritability, anxiety, fatigue, depression, aches and pains, muscle twitches and tensions, hypoglycemia or low blood pressure.
- **Type of movement.** Very willful, but stalled and ineffective, with the brakes on.
- **Traditional Chinese medicine and chakras.** Extreme yin and yin deficiency in some cases. Needs better first chakra energy and general balancing.
- **Newer pattern.** This pattern was not part of Dr. Eck's original research.



2. BIOUNAVAILABLE CALCIUM – HIGH CALCIUM WITH HIGH MAGNESIUM. **Definition.** Calcium above 100 mg% and magnesium above about 9 mg%. **Interpretation and symptoms:**

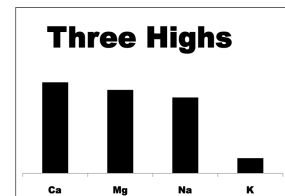


- **Whom.** Common in younger people, and more so women. Uncommon among older people because the pattern is often not sustainable for too long. Most cases are very slow oxidizers.
- **Causes.** Adrenal fatigue, poor diet, lack of rest, toxic metal accumulation and perhaps illnesses and depression can be possible causes.
- **Physiology.** Low serum sodium and potassium reduces soluble calcium and magnesium in the blood. This causes precipitation of calcium and magnesium into the soft tissues.
- **Psychology.** Defended or defensive, with some degree of a calcium shell. Also some degree of withdrawal psychologically, and somewhat suppressed or repressed, emotionally inhibited, with somewhat lowered awareness and perhaps somewhat out of touch with the body. It may be part of some copper personality types. It is often a sensitive person in an exhausted state.
- **Signs and symptoms.** These may include a mixture of calcium deficiency and calcium excess symptoms. Calcium deficiency symptoms include irritability, anxiety, muscle tightness, muscle cramps, and insomnia. Symptoms of calcium excess in the tissues include joint pain due to calcium deposits, arteriosclerosis and high blood pressure later in life, weakness, thyroid and adrenal imbalances, acidic pH because biounavailable calcium is unable to neutralize acids as well and due to trace mineral deficiencies, mental decline and others.
- **Type of movement.** Slow and often ineffective movement, perhaps with the brakes on and perhaps reversed if the sodium/potassium ratio is low.
- **Traditional Chinese medicine and chakras.** Very yin, generally. Usually quite ungrounded and needing first chakra balancing and strengthening.

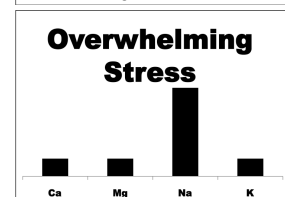
IMPORTANT PATTERNS CONSISTING OF THREE LEVELS

- Three high macrominerals – THREE HIGHS OR STILTED.
- Three low macrominerals – THREE LOWS OR OVERWHELMING STRESS.
- *Overwhelming stress* pattern with *sympathetic dominance* (a very low potassium) – ATTEMPTING TO OVERCOME OVERWHELMING ACUTE STRESS.

1. THREE HIGHS OR STILTED. Definition. Usually calcium and two of the other macrominerals are above the ideal levels. One, such as magnesium, or potassium, is low. **Interpretation and symptoms:** This pattern is very similar to *four highs* (see below).



2. OVERWHELMING STRESS OR THREE LOWS PATTERNS. Definition. Three low macromineral readings and one high macromineral reading. **Interpretation and symptoms:**



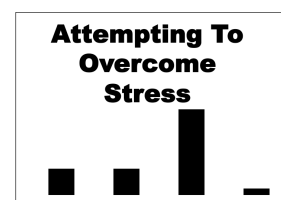
- **Whom.** Anyone who is under tremendous stress.
- **Causes.** Lifestyle stress, rather than just biochemical stress, is often involved in this pattern.
- **Physiology.** Complex because there are different variants. However, the normal response to stress is not functioning quite right, so the mineral levels and/or ratios become aberrated in various ways. What is interesting is that any of the three lows pattern (four different ones are possible) appear to indicate overwhelming lifestyle stress.
- **Psychology.** This is an “almost four lows” pattern. This means the person is close to giving up and collapsing into a four lows pattern. Fortunately, a development program can often

turn things around quickly and reduce some of the stress so the person comes out of the pattern within a few months or even less in a few cases.

- **Signs and symptoms.** These may include anxiety, irritability, insomnia, muscle tightness, muscle cramps, muscle spasms, allergies and other stress-related symptoms. Some symptoms will depend on which macromineral is elevated.
- **Type of movement.** Forceful, but ineffective and possibly reversed if the sodium/potassium ratio is low. The acute pattern is more forceful and not reversed.
- **Traditional Chinese medicine and chakras.** Chakra imbalances are variable.
- **A newly discovered pattern.** This was not part of Dr. Eck's original work.
- **Variants of this pattern.** When the sodium level is high the stress is somewhat more acute. It is also more severe if a sympathetic dominance pattern is present or if the sodium/potassium ratio is greater than 10. When the potassium is high, the pattern is somewhat more chronic. It is more severe if the sodium/potassium ratio is less than 1. While these are the most important, other variants and combinations are also possible.

3. ATTEMPTING TO OVERCOME OVERWHELMING STRESS. Definition.

This is an *overwhelming stress pattern* (three lows) combined with *sympathetic dominance* (a low potassium level). **Interpretation and symptoms:**

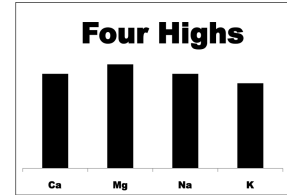


- **Whom.** Can occur in anyone with a lot of stress. It is not too common, but is an important pattern. The importance is that this could lead to a four lows if the person is not successful in overcoming or handling the stress.
- **Causes.** Pushing oneself extremely hard over time may create this pattern.
- **Physiology.** The adrenals are very weak, but not as weak as with a four lows pattern so there is more of a fight-or-flight response than in four lows, but not enough for fast oxidation.
- **Psychology.** Intense efforting pattern. A person is trying extra hard to overcome stress.
- **Signs and symptoms.** Hypoglycemia is always present, along with muscle tension and perhaps insomnia. Other symptoms of acute stress, or low calcium and magnesium may include elevated blood pressure, some water retention or edema, anger and exhaustion.
- **The pattern is stronger when both indicators for sympathetic dominance are present :** a potassium level of 4 mg% or less and a high sodium/potassium ratio.
- **Type of movement.** Intensely willful and perhaps attacking, ineffective, possibly collapsing.
- **Traditional Chinese medicine and chakras.** Yin. A first chakra imbalance.
- **A newer pattern.** This was not part of Dr. Eck's original work.

IMPORTANT PATTERNS CONSISTING OF FOUR LEVELS

- Elevated calcium, magnesium, sodium and potassium – FOUR HIGHS OR STILTED.
- Low calcium, magnesium, sodium and potassium – FOUR LOWS, OR COLLAPSED, OUT IN THE COLD WITH NO SHELTER, OR SPINNING ONE'S WHEELS.
- Very high calcium, with four highs (also elevated magnesium, sodium and potassium) – PASSIVE-AGGRESSIVE.

1. FOUR HIGHS OR STILTED. Definition. A calcium above 39 mg%, magnesium above 5 mg%, sodium above 24 mg% and potassium above 9 mg%. **Interpretation and symptoms:**



- **Whom.** Mostly adults, and perhaps more common in sensitive or delicate women, and at times in willful people.
- **Levels somewhat arbitrary.** The levels are not exact, but quite accurate in my experience.
- **Causes.** Intense stress in a slow oxidizer can produce this pattern. The cause of the stress can have to do with the lifestyle or with the presence of toxic metals in many cases.
- **Physiology.** This is an exhaustion stage of stress or slow oxidation state with an alarm reaction superimposed upon it. It may thus be called a *secondary alarm reaction*. Slow oxidation is indicated by the high calcium and magnesium levels. The secondary alarm reaction is indicated by the high sodium and potassium levels. This is something like a “second wind” in athletics. The person is tired out, but finds more energy to keep going. Often inflammation is part of the pattern.
- **Multiple secondary alarm reactions possible.** These would be the equivalent of a *third or fourth wind* in athletics. All must be slowly unwound to restore health.
- **A fast-to-slow oxidation transition pattern that responds easily to development in most cases.** This is the least intense and easiest from which to emerge of the stalled transition or resistance-to-change patterns. For instance, it is much easier to emerge from than *four lows*, *step up* or *fast oxidation with a low sodium/potassium ratio*. Even so, some people will remain in four highs for a year or more.
- **Visually.** It looks like walking on stilts. The combination of high calcium, magnesium, sodium and potassium levels appear like stilts on a calibrated graph from ARL. The feeling is a person walking on stilts. The person is unsteady and is careful about his balance.
- **Psychology.** Unstable, under a lot of stress, and perhaps stilted, which means puffed up, pumped up, or pompous. Also, the person is often somewhat delicate or unsteady emotionally. When the pattern persists, it may indicate a person who is delicate or sensitive and unconsciously keeps the oxidation rate balanced in order to feel better. This can be a subtle fear of “falling down” into slow oxidation. One may become angry with a doctor if they start feeling worse due to falling out of four highs and into a slow oxidation pattern.
- **Changes rapidly.** This pattern can change quickly, sometimes in a matter of days or weeks.
- **A “soft landing” is the goal.** When the pattern resolves into slow oxidation, one hopes the person will not experience too much fatigue and depression associated with slow oxidation.
- **Hidden four highs or slow oxidizer on crutches.** Some people with a simple slow oxidizer pattern actually have some *four highs* pattern present. Their sodium and potassium levels, while low, are still displaced upwards by the presence of toxic metals or some other stressor. Usually, one can only assess this on retests when the oxidation rate decreases significantly, even though the person is on a correct program. This tells us the previous test was a slow oxidizer under a lot of stress or a slow on crutches. Telltale signs of *hidden four highs* or *slow on crutches* may be a low phosphorus, a low sodium/potassium ratio and the presence of toxic metals.
- **A predictable change pattern.** Experience shows that *four highs* resolves to slow oxidation in almost all cases. This is very helpful to predict future symptoms and how to cope with them immediately.

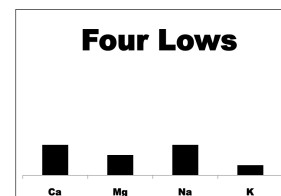
- **Symptoms.** Slow oxidizer symptoms such as fatigue, depression and others are often mixed with “alarm” symptoms such as anxiety, inflammation, fears or higher blood pressure.
- **Type of movement.** Floating, rough or uneven, delicately balanced, somewhat effective.
- **Traditional Chinese medicine and chakras.** This pattern is closely related to yang rising. Imbalances in the upper chakras such as the fifth may be involved in this pattern.

2. FOUR LOWS , OR OUT IN THE COLD WITHOUT SHELTER, OR SPINNING THE WHEELS, OR COLLAPSED.

Definition. A hair calcium less than 40 mg%, magnesium less than 6 mg%, sodium less than 25 mg% and potassium less than 10 mg%.

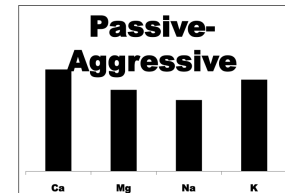
Interpretation and symptoms:

- **Whom.** This is seen much more in adults. It is rare in children under about age 4.
- **Causes.** It may be a *failed transition* from fast to slow oxidation. In other cases, it is just the endpoint of severe or longstanding stress, nutritional depletion or a negative and/or cynical, or give-up attitude. This can appear as stoicism or toughness, which is not the same.
- **Physiology:** On a first hair test, this is a very chronic adrenal exhaustion or collapse pattern. The body is in a state of limbo between fast and slow oxidation with some of the qualities of both oxidation types, but not quite in either one. It is also a low vitality, serious illness and end of life pattern. In fact, four lows is the main end of life pattern seen on hair tests.
- **Analogies to help explain it on a first test.** 1) Stuck in a ditch, and spinning one’s wheels in the ice or mud and getting nowhere. This wears out the car engine fast. 2) Out in the cold without shelter. Normally, when one becomes exhausted, the body erects a “shelter” for the person in the form of higher calcium and magnesium levels. With this pattern, the shelter is not built. 3) A cave-in. It feels like life caves in or closes in or one sort of collapses.
- **The first pattern to look for when reviewing a hair analysis.**
- **Different on retests.** On a retest only, it is almost always a retracing and a “resting death” pattern. An analogy is a dog who curls up in the corner in order to get well. It may indicate deep change going on inside that requires much more rest and some withdrawal.
- **Visual.** On an ARL calibrated chart, the first four numbers are all below the ideal levels and it looks like a collapse. This may be an accurate description of what it feels like, as well.
- **Signs and symptoms.** If the pattern is recent, there may be no symptoms. Early symptoms include fatigue, allergies, muscle tightness, muscle tension, insomnia and others associated with low calcium and low magnesium. Later, many chronic illnesses can develop as the body’s energy and vitality decrease.
- **Hidden copper toxicity.** Everyone with four lows has a copper imbalance.
- **Sub-oxidation.** This pattern may be what Dr. George Watson called *sub-oxidation*.
- **Received little help after trying many doctors and many programs.** Development, however, is unique in that it can help many of these people quite easily.
- **Frustrating for people when it persists on retests.** Four lows can be slow to correct, both when it appears on a first test and when it occurs on retests. However, most people emerge from the pattern with no difficulty in about six months to a year.
- **Psychology.** Very stuck. Negative attitudes are usually present, even if subtle, such as hidden anger, cynicism and a lot of stress. This may be less so if the pattern is recent. This is a *stalled fast-to-slow oxidation* transition pattern or *resistance-to-change* pattern. The lower the four numbers, the more stuck one tends to be in the pattern.



- **Requires a special program.** Healing requires a special supplement program and one tea-spoon of *tarragon* daily sprinkled on food. Lifestyle change with more rest may be needed.
- **Type of movement.** On a first hair test: collapsed, very stalled, ineffective, perhaps random. If it only occurs on a retest: resting up to heal so that one will be able to move forward again.
- **Traditional Chinese medicine and chakras.** Yin deficiency, perhaps severe, and perhaps blood deficiency. Chakra patterns are variable but generally shut down.

3. PASSIVE-AGGRESSIVE. Definition. This is a combination of *four highs* and a *calcium shell* (or calcium above about 170 mg%). A secondary indicator that strengthens it is a *sodium/potassium ratio less than about 2.5*.



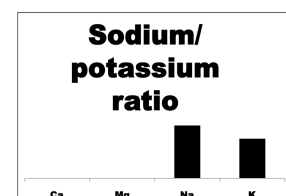
Interpretation and symptoms:

- **Whom.** Mostly adults, and probably more common in women.
- **Causes.** A calcium shell is a tendency for withdrawal, emotional passivity or suppression. Four highs indicates instability and acute stress. The combination may cause occasional emotional outbursts, especially when the person is under a lot of stress.
- **Psychology.** Suppressed, stressed and somewhat unstable, as explained just above.
- **Apparent stability, but not really.** A calcium shell is a more *stable* pattern. In this case, however, it is combined with a very *unstable* pattern, four highs or a secondary stress reaction. A low sodium/potassium ratio adds yet another factor of hidden negative emotions.
- **A breakthrough pattern.** The secondary alarm reaction of four highs now and then “breaks through” the calcium shell pattern to cause an emotional outburst.
- **Reduced awareness plus acute stress.** A calcium shell, and, if it is present, a low sodium/potassium ratio, are both reduced awareness patterns. This may contribute to the buildup of tension and sudden outbursts of emotion when the stress gets too high.
- **Analogy.** Four highs is like a boiling pot whose lid may rise up to release some steam. The calcium shell is like having a rock or heavy object sitting on the lid of the pot. It keeps the lid on, except when the pressure gets too great. Then the pot can blow its top.
- **Type of movement.** Slow and controlled with the brakes on most of the time, but also unstable, floaty or coppery underneath, contributing to occasional uncontrolled movement.
- **Traditional Chinese medicine and chakras.** Extreme yin with extreme yang rising. A combination of lack of grounding in many cases and lack of emotional control. The first and second chakras may therefore need balancing and strengthening.
- **A newer pattern.** This was not part of Dr. Eck’s original work.

IMPORTANT PATTERNS CONSISTING OF A SINGLE RATIO

- Sodium/potassium ratio, high and low – THE VITALITY RATIO.
- Calcium/magnesium ratio, high and low – THE BLOOD SUGAR OR LIFESTYLE RATIO.
- Calcium/potassium ratio, high and low – THE THYROID RATIO.
- Sodium/magnesium ratio, high and low – THE ADRENAL RATIO.

1. THE SODIUM/POTASSIUM RATIO, OR VITALITY RATIO. Definition. An ideal ratio is about 2.2-2.7. A good range is between about 2 and about 5 or 6. The ratio is calculated at the bottom of the page of an ARL hair chart. **Interpretation and symptoms:**



- **Vitality indicator.** A major vitality indicator. Dr. Eck called it the *vitality ratio*. A ratio less than about 2 indicates lowered vitality, and vitality is lower if the ratio is lower than this. A ratio above about 15 may also indicate reduced vitality, though not as bad as a low ratio.
- **Causes for imbalance.** This is the first ratio to react to stressors of every kind. The stress can be physical, nutritional, emotional, mental or other.
- **Sympathetic/parasympathetic balance in the body.** A higher ratio indicates a more sympathetic state, while a low ratio indicates a more parasympathetic or burnout state.
- **A secondary sympathetic dominance indicator.** A ratio above 6 is a secondary indicator for *sympathetic dominance* pattern. This is a mental tendency to push oneself hard.
- **Directional indicator regarding change in the oxidation rate.** Like a turn signal light on a car, a high ratio tends to indicate a person is moving toward a faster oxidation rate. A ratio below 2.5 indicates a tendency toward a slower oxidation rate.
- **Inflammatory versus anti-inflammatory states.** A high ratio is a tendency for more pain and inflammation. A low ratio indicates less ability to mount an inflammatory response.
- **Carbohydrate tolerance.** A low ratio is a marker for impaired carbohydrate tolerance that is not primarily or only diet-related, but instead a metabolic imbalance.
- **Charging or discharging state.** A ratio between about 2.5 and 6 indicates a "charging state" in which the cells are more electrically charged. A low ratio, and possibly a very high ratio, indicates "discharging" electrically, perhaps with a lower cell membrane potential.
- **Types of stress.** A high ratio is associated with more *acute* stress, anger or fright. A low ratio is associated with more *chronic* stress conditions such as long-term fears, chronic infections, chronic degenerative diseases such as diabetes, cancer, heart disease, kidney or liver diseases, and simmering or hidden negative emotions.
- **Estrogen/progesterone balance to some degree.** Sodium is more associated with estrogen. Potassium is more associated with progesterone. Thus, a higher ratio can indicate estrogen dominance. However, most women are estrogen dominant regardless of the ratio. Some doctors use the zinc/copper ratio to assess hormone balance, but I don't find this too accurate.
- **Zinc/copper balance to a degree.** Zinc raises potassium and lowers sodium. Copper raises sodium and lowers potassium.
- **Dosing zinc and copper.** Dr. Eck used this ratio to decide how much zinc and copper a person needs. This is related, in part, to stress theory. A high sodium/potassium ratio is a need for more zinc relative to copper. A low sodium/potassium ratio requires some copper and less zinc because zinc tends to lower the sodium/potassium ratio.
- **Hidden copper indicators.** In both fast and slow oxidizers, a low sodium/potassium ratio is a prime indicator for hidden copper toxicity, bioavailable copper and a need for copper supplementation, according to Dr. Eck's research.
- **Immune response.** A low, or a very high ratio may indicate an impaired immune response.
- **Tissue catabolism or excessive protein breakdown.** A low ratio, and possibly a very high ratio, indicates excessive tissue catabolism or breakdown, or impaired protein synthesis. In other words, the body is breaking down tissue faster than it is rebuilding it. This can lead to any health condition imaginable, depending on where the tissue is being lost.
- **Cannibalism.** A low ratio may indicate the body is beginning to digest its own tissues because it cannot metabolize proteins, carbohydrates and fats correctly. The body begins to consume its own tissues for energy.
- **A digestive indicator.** Dr. Eck found that a high ratio is often associated with more hydrochloric acid in the stomach and perhaps an over-acid condition of the stomach. This

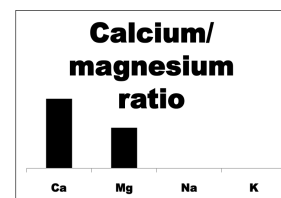
may have to do with the conversion of salt to hydrochloric acid. A low ratio often indicates reduced digestive enzymes, particularly low hydrochloric acid in the stomach.

- **Copper personality types.** A high ratio is associated with a more angry, aggressive personality style, generally. A low ratio is associated with feelings of frustration, resentment, hostility, lower energy levels and often depression.
- **Introversion and extroversion.** A high ratio is associated with extroversion. A low ratio is more associated with introversion.
- **An awareness indicator.** A low ratio, especially when the ratio is less than 1, is associated with reduced awareness. In these cases, a person is often unaware of hidden traumas or perhaps beliefs and motives that are driving him.
- **Babies often tolerate a very low sodium/potassium ratio.** The low ratio often signifies chronic stress, improper diet, infections, metal toxicity due to vaccines and frustration.
- **Signs and symptoms.** Those associated with a high Na/K ratio include pain, edema, hypertension, swelling, irritable bowel syndrome and all “itis” conditions. Those associated with a low Na/K ratio include allergies, exhaustion, depression, chronic infections, cancer, diabetes, and liver, kidney, digestive and heart disease. Others are negative emotions.
- **Retracing.** On retests, the sodium/potassium ratio may decrease if the body eliminates toxic metals, or the ‘amigos’ (manganese, iron, aluminum, chromium and selenium). This is just uncovering a *hidden* low sodium/potassium ratio that was obscured on previous tests, and is not a cause for concern. Old infections may flare up as this occurs.
- **Type of movement.** Force, speed and direction indicator. A high sodium/potassium ratio is forward-moving, speeding up, and becoming more effective. A low ratio is *reversed*. This means a person is slowing down, becoming less effective and starting to collapse into four lows. It can signal a resistance to change or stalled transition of some kind.
- **Traditional Chinese medicine and chakras.** A low ratio indicates yin deficiency, a serious indicator in Chinese medical theory. A high ratio is associated with yang excess or yang rising. A low ratio can indicate a reversal in the spin of the major chakras, especially the third and fourth. This is one reason this ratio is a directional indicator for the oxidation rate. When the spin of a major chakra is backwards, the oxidation rate will slow down. When the chakras spin correctly, the oxidation rate will be normal or somewhat fast.

Chart of the Sodium/Potassium Ratio

RATIO	INTERPRETATION
Less than 1	Extreme low ratio - trend for adrenal exhaustion, chronic infections, hypoglycemia or diabetes, stroke, heart attack, cancer, excessive protein breakdown, catabolic state, frustration, resentment, hostility, hidden emotional traumas, lowered level of awareness.
1 – 2	Trend for diabetes and hypoglycemia, adrenal weakness, fatigue, ulcers, allergies, reduced immune response, digestive weakness, low digestive enzymes, kidney and liver stress.
2 – 2.5	Mild low ratio – some tendency for adrenal fatigue, glucose intolerance, and mild liver, kidney and cardiovascular stress.
2.5 – 4	Excellent range.
4 – 8	Mild elevated ratio – a trend for inflammation, acute stress or anger.
Greater than about 8	High ratio – a tendency for more severe inflammation, pain, kidney stress, anger and possibly “autoimmune” conditions.

2. THE CALCIUM/MAGNESIUM RATIO, OR BLOOD SUGAR OR LIFESTYLE RATIO. Definition. An ideal ratio is about 6.77. A good range is between about 4 and 9.5. This is a tighter good range than Dr. Eck used. On a hair test performed by Analytical Research Labs, this ratio is calculated at the bottom of the page.



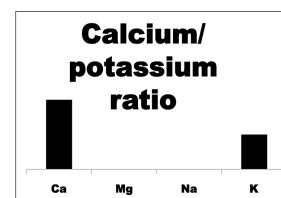
Interpretation and symptoms:

- **Whom.** A common imbalance in every group, including children and adults of both sexes.
- **Causes for imbalance.** On a first hair test, the cause is often too many carbohydrates in the diet. When the ratio is over 13.5, the cause is a lifestyle factor or attitude that is not helpful.
- **Physiology.** I am not sure why an imbalanced ratio is associated with imbalances in the diet or lifestyle. Dr. Eck taught that calcium and magnesium have to do with insulin regulation.
- **Spiritual defensiveness – a need for change pattern.** A ratio greater than 13.5, especially on an initial hair analysis, is a newer pattern that was not part of Dr. Eck’s original work. In my experience, it often indicates a person is defending a lifestyle factor, such as a job or relationship, or an attitude that one needs to move away from to move ahead at full speed in one’s life. The attitude that needs changing is usually anger, but it could be many others such as cynicism, rigidity, fear, negativity or another. When seen in children, the problem usually has to do with school or relationships with parents or siblings.
- **On retests, elimination of biounavailable calcium.** During a development program, the body often eliminates biounavailable calcium. This can elevate the calcium level and the calcium/magnesium ratio on hair mineral retests. This is not important.
- **Signs and symptoms** are typically not prominent with this pattern.
- **Charging.** A low Ca/Mg ratio may be a type of “charging” pattern, similar to a high Na/K ratio. However, a ratio greater than about 25 may be a type of discharging pattern, similar to a low Na/K ratio.
- **Mineral loss.** A ratio below 2 or above about 60 may reflect deeper health imbalances such as a magnesium or calcium loss through the hair. It may be associated with high mercury.
- **Type of movement.** A very high ratio is the world pushing back, slowing movement. A slightly low ratio may be the opposite - having some wind at your back.
- **Traditional Chinese medicine and chakras.** A blood sugar imbalance is often a yin problem in Chinese medical theory. Chakra patterns can be variable.

3. CALCIUM/POTASSIUM RATIO OR THYROID RATIO. Definition. Dr. Eck felt that an ideal ratio is about 4. A good range is about 2 to 6.

Interpretation and symptoms:

- **Whom.** Toddlers often have a low ratio, while older children and adults usually have a high calcium/potassium ratio.
- **Thyroid effect at a cellular and organism level.** Dr. Eck believed that a ratio less than 4 indicates excessive thyroid glandular effect at a cellular level. A ratio above 4 is a trend for sluggish thyroid and perhaps adrenal effect at a cellular and perhaps total organism level. One reason for this is that thyroid activity regulates calcium, in part. Also, potassium sensitizes the tissues to thyroid hormone. In addition, high hair calcium is related to reduced cell permeability. This may alter thyroid hormonal effects.



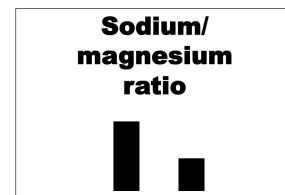
- **Very different from serum or saliva hormone levels.** Blood and saliva hormone levels may not match the hair indicators. Chapter 28 discusses this in more detail.
- **Causes for imbalances.** Many factors ranging from stress and emotions to nutritional depletion, autonomic nervous system imbalances and the prevalence of iodine antagonists and toxic metals can affect this ratio. It is truly a *whole systems* ratio.
- **Signs and symptoms.** A low ratio is associated with irritability, aggressiveness, anxiety, muscle tightness, cramps and other symptoms of low calcium and magnesium. A high ratio is associated with fatigue, depression, pushing oneself hard, hypoglycemia, cravings for sweets, copper toxicity, perhaps low blood pressure, and chronic stress conditions of many kinds.
- **Oxidation rate assessment.** This is one of the two ratios used to assess the oxidation rate.
- **Grave's disease.** Oddly, a high calcium/potassium ratio is present in all cases of Grave's disease that I have ever seen. Chapter 28 discusses this phenomenon in detail.
- **Psychologically,** A low ratio is more associated with extroversion, joy and happiness. A high ratio is more associated with fatigue, depression and even despair and suicidal thoughts.
- **Hidden copper.** A ratio greater than about 10 is an indicator of hidden copper toxicity.
- **Trying too hard.** A ratio greater than about 100 indicates a person is pushing himself very hard in a generally ineffective way. It is a severe efforting pattern with poor results.
- **Type of movement.** A low ratio often indicates effective, fast and perhaps aggressive, uncontrolled movement. A high ratio is slower, perhaps stalled movement, with reduced effectiveness and "the brakes on" if a calcium shell is present, too.
- **Traditional Chinese medicine and chakras.** A yin-yang indicator. A high ratio is more yin. The fifth chakra is near the thyroid gland. However, disorders here often relate to adrenal problems as well, which has more to do with the first and second chakras.

4. SODIUM/MAGNESIUM RATIO OR ADRENAL RATIO.

Definition. An ideal ratio is 4.17, according to Dr. Eck's research. A healthy range is roughly between 2 and 6.5.

Interpretation and symptoms:

- **Adrenal effect at a cellular and organism level.** A ratio above 4.17 is a trend for excessive adrenal and thyroid effects at a cellular level. A ratio less than 4.17 is a trend for reduced adrenal and perhaps thyroid effect at a cellular level.
- **Different from serum, urine or saliva adrenal hormone testing.** Hair analysis adrenal assessment will not always match the levels of cortisol and other hormones measured in serum, urine or saliva because the hair measures a cellular effect, not hormone levels. Chapter 27 discusses this and other topics related to this ratio in more detail.
- **Causes for imbalances.** Autonomic imbalance combined with nutritional deficiencies, toxic metal excess and too much stress on the body are primary causes. A whole systems ratio.
- **Signs and symptoms.** A high Na/Mg ratio is associated with anxiety, irritability, higher blood pressure and blood sugar, anger, irritability and acute stress conditions. A low Na/Mg ratio is associated with fatigue, perhaps lower blood sugar in most cases, low blood pressure, low body temperature, sweet cravings, salt craving and others symptoms of weak adrenal glands.
- **Oxidation rate assessment.** This ratio is part of the assessment of the oxidation rate.



- **Psychology.** A high ratio is more associated with extroversion, joy and aggressiveness. A low ratio is associated with apathy, lethargy, depression and despair.
- **Type of movement.** An elevated ratio is forceful, effective, powerful and could become uncontrolled. A low ratio is much slower, and less effective.
- **Traditional Chinese medicine and chakras.** A yin-yang indicator. A high ratio is more yang. This ratio is deeply involved with the first and second chakras.

IMPORTANT PATTERNS CONSISTING OF TWO RATIOS

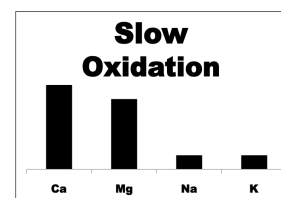
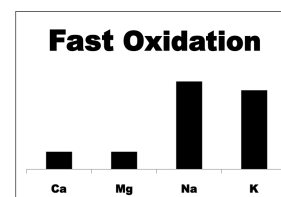
- Calcium/potassium ratio and sodium/magnesium ratio - THE OXIDATION TYPES.
- High calcium/magnesium ratio and high sodium/potassium ratio – DOUBLE HIGH RATIO.
- Low calcium/magnesium ratio and low sodium/potassium ratio – DOUBLE LOW RATIO.
- High calcium/magnesium ratio and low sodium/potassium ratio – THE BOWL.
- Low calcium/magnesium ratio & high sodium/potassium ratio– THE HILL

1. THE OXIDATION TYPES - fast, slow and mixed

oxidation. Definition. Dr. Eck used a combination of the sodium/magnesium ratio and the calcium/potassium ratio to assess the oxidation rate. Chapters 12 and 13 discuss the oxidation types in detail. A hair analysis from Analytical Research Labs has the oxidation type printed at the bottom of the graph page.

Interpretation and symptoms:

- **Basic metabolic types.** The oxidation types are states of matter, and are also related to basic physics concepts such as hot and cold, contracted and expanded. They also relate to other concepts of metabolic typing such as the ancient Chinese and Ayurvedic typing systems. This topic is discussed in Chapter 9.
- **Stages of stress.** The oxidation types correspond to the alarm and exhaustion stages of stress. These are among the most important ideas in development.
- **Causes.** These involve every aspect of a human life from a person's age, lifestyle and diet to physical and emotional imbalances, genetics, temperament, karmic patterns, any and all types of stress, traumas, injuries and more.
- **Signs and symptoms.** These are discussed in great detail in Chapter 12.
- **Other researchers may assess the oxidation types differently.** Dr. Eck defined the oxidation types precisely in terms of two mineral ratios on a hair test when the hair is not washed at the lab. Others use blood tests, questionnaires or other methods to assess the oxidation rate. They include David Watts, DC, William Wolcott, Rudolf Wiley, PhD, George Watson, PhD and Harold Kristol, DDS. The differences cause confusion when a person tries to compare them. While all may have some merit, I have had excellent success with Dr. Eck's work and have found the other methods less helpful.
- **Type of movement.** Fast oxidation is much more forceful, forward-moving, usually more effective, though it can be uncontrolled if extreme. Slow oxidation is somewhat stalled and slower, usually much less effective, with the brakes on if a calcium shell is present, and even reversed if the Na/K ratio is low.
- **Traditional Chinese medicine and chakras.** Fast oxidation is much more yang, while slow oxidation is much more yin, in most cases. It is a general assessment, but one that is

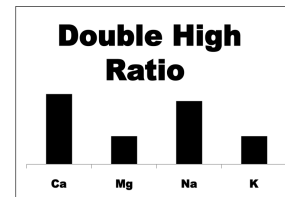


extremely useful in practice. Chakra relationships are variable and depend on other mineral levels and ratios.

2. DOUBLE INFLAMMATION or DOUBLE HIGH RATIO.

Definition. A calcium/magnesium ratio greater than 9.5 and a sodium/potassium ratio greater than about 6. The higher the ratios, the more severe the pattern. **Interpretation and symptoms:**

- **Whom.** Seen in adults, and only rarely in children.
- **Emphasis pattern.** This pattern tends to emphasize the meaning and often symptoms of an elevated sodium/potassium ratio. It may be called an *emphasis* pattern for this reason.
- **Causes.** These are the same as for a high sodium/potassium ratio and include acute stress, anger, nutritional depletion, toxic metal excess and perhaps others.
- **Signs and symptoms.** These are often the same or even more pronounced as those of a high sodium/potassium ratio. They include inflammation, anger, pain in the body, some defensiveness and perhaps a stubborn nature. It can mean a person is “digging in his heels” and moving forward slowly. The higher the two ratios, the more extreme the pattern.
- **Psychology.** Often defensive or defended, and determined.
- **Stalled transition pattern.** This can be a stalled transition or resistance-to-change pattern in which a person has “dug in his heels” and is fighting back slowly.
- **Visual.** The pattern on an ARL graph looks like a saw tooth pattern.
- **Step down pattern is a special case of double high ratio in a slow oxidizer.**
- **Type of movement.** Willful, forceful, slow but somewhat effective.
- **Traditional Chinese medicine and chakras.** A more yang rising pattern. Chakras vary.

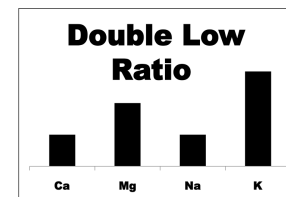


3. DOUBLE INVERSION OR DOUBLE LOW RATIO.

Definition: A calcium/magnesium ratio less than about 4 and a sodium/potassium ratio less than about 2.5. The lower the ratios, the more severe the pattern.

Interpretation and symptoms:

- **Whom.** Mostly seen in adults. It is rarer in a child.
- **Emphasis pattern.** The pattern emphasizes or worsens all the qualities, attitudes and symptoms associated with a low sodium/potassium ratio.
- **Causes.** These are the same as for a low sodium/potassium ratio such as chronic stress, infections, depression, frustration, resentment, hostility, and, of course, nutrient depletion.
- **Psychology.** Very resentful, hostile and frustrated in many cases. Also, often very tired.
- **Signs and symptoms.** Symptoms are those of a low Na/K ratio, such as fatigue, chronic infections and carbohydrate intolerance. Others include liver, kidney and cardiovascular stress, infections and reduced awareness. The lower the ratios, the more extreme the pattern and the symptoms, generally.
- **Visual.** On an ARL graph, the pattern looks like a saw tooth pattern with the teeth facing the opposite direction from the double high ratio. It looks like a “rougher road”.
- **Step up pattern is a special case of double low ratio in fast oxidation.**
- **Severe illness pattern.** It can be associated with severe physical illness, in particular such as cancer, a heart attack, stroke or other catastrophic condition.
- **Type of movement.** Stalled and definitely reversing. “Beating one’s head against a wall”.

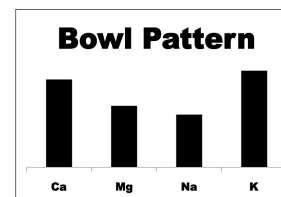


- **Traditional Chinese medicine and chakras.** A more yin pattern. Chakras are variable.

4. THE BOWL PATTERN. Definition. A calcium/magnesium ratio greater than 9.5 and a sodium/potassium ratio less than about 2.5.

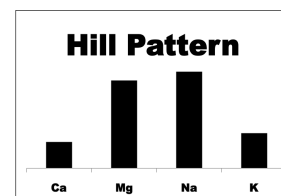
Interpretation and symptoms:

- **Whom.** Almost always seen in adults. Hardly ever seen in children.
- **Causes.** Nutrient depletion and toxic metal excess, but with an important lifestyle component as well. It is very common today.
- **Defensiveness plus hostility.** This pattern combines defensiveness (a high calcium/magnesium ratio) and frustration, resentment and hostility (a low sodium/potassium ratio). In defending one's hostility, one must feel stuck and emotionally blocked.
- **Psychology.** This interesting pattern is a partial collapse, with some adrenal exhaustion in all cases. Yet the person is defending something that is not working for him or her.
- **A stuck or dilemma pattern.** A person feels stuck with no way out.
- **Signs and symptoms.** These usually have to do with a low sodium/potassium ratio and a high calcium/magnesium ratio and may include fatigue, a diet too high in carbohydrates, and general stress symptoms. Opposite of the hill pattern.
- **May resolve easily with development.** Development often quickly helps resolve this pattern. This would indicate the dilemma or stuck feeling has a lot to do with physical health imbalances. When the pattern remains on a retest, it is likely due to deeper emotional conflicts.
- **Diabetes.** This pattern is associated with a diabetic tendency, since it incorporates both a low sodium/potassium ratio and an elevated calcium/magnesium ratio.
- **Less reliable on retests.** On retests, the body often eliminates bioavailable calcium. This can result in a falsely elevated calcium/magnesium ratio.
- **Visual.** The pattern often looks like a bowl on a calibrated ARL hair chart. It also looks like the person is collapsed in the middle and held up on the sides. Often the bowl is distorted in its shape. The bowl shape cannot be seen if any of the mineral levels are off the chart.
- **Analogy.** The person feels like an insect stuck in a toilet bowl or sink bowl. He tries to climb out, but without success. Development seems to give the person a lift, literally.
- **Retracing.** At times, a bowl pattern occurs just on a retest. The body may have released toxic metals that were "crutches" and this causes a temporary mild collapsing. This may be retracing a time when the body took on toxic metals as a way to cope with a dilemma.
- **A fast, slow or mixed oxidizer.** This affects the meaning of the pattern to some degree.
- **Types of movement.** Stalled movement. Closed, meaning not open to change.
- **Traditional Chinese medicine and chakras.** Very yin, somewhat collapsed. Can be more yin or more yang depending on the oxidation rate. Chakras are variable.
- **The bowl is a newer pattern and was not part of Dr. Eck's earlier work.**



5. CELEBRATION, OR THE HILL PATTERN. Definition. A calcium/magnesium ratio less than 5:1 and a sodium/potassium ratio greater than about 6:1. **Interpretation and symptoms:**

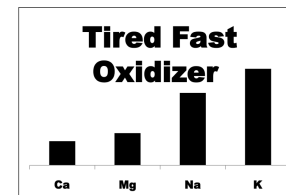
- **Whom.** Almost always seen in adults, and valid mainly on retests.
- **Celebration.** The feeling of this pattern is one of celebration or positive life change. It might signal "turning a corner" in some way, even if the person is not aware of it.



- **Causes.** A culmination of attitudinal shifts, health building and/or lifestyle shifts.
- **Signs and symptoms.** None in particular. The person may be aware of more joy.
- **Low defensiveness and moving forward.** This pattern is a combination of two ratios. A low calcium/magnesium ratio may indicate a lack of defensiveness. An elevated sodium/potassium ratio can mean a forward-looking and positive attitude or stance.
- **Doubly charged up.** The two ratios above may also indicate a double “charged up” situation. This is a subtle physics understanding of hair mineral analysis.
- **Psychology.** Opening, an expansion of consciousness, perhaps, or more joy. It is the opposite situation from the bowl pattern, which is more closed, somewhat collapsed and feeling stuck.
- **Visual.** The first four numbers on the calibrated graphs of an ARL chart look like a hill, and may give a feeling of openness or expansiveness.
- **Type of movement.** Open and moving. Many possibilities.
- **Traditional Chinese medicine and chakras.** A balance of yin and yang if the hill is balanced. The second chakra may be weak, but there can be opening of the upper chakras.
- **A newer pattern.** This is not part of Dr. Eck’s original research.

AN IMPORTANT PATTERN CONSISTING OF THREE RATIOS

TIRED FAST OXIDIZER. Definition. This is a fast oxidizer with a sodium/potassium ratio less than about 2.5. It may also be called a *burned out fast oxidizer*, *fast oxidizer with an inversion*, a *temporary fast oxidizer*, or a *slow oxidizer under stress*. **Interpretation and symptoms:**



- **Whom.** Very common in babies and young children. In adults, more in men than in women.
- **Causes.** Ongoing stress, nutrient deficiencies and the buildup of toxic metals diminish the fight-or-flight response.
- **Signs and symptoms.** Often a combination of fast and slow oxidizer symptoms are present.
- **A separate oxidation type.** This is an extremely important pattern, so much so that Dr. Eck designed a special metabolic pack for the pattern called SBF.
- **Psychology.** Often some immaturity is present, blocking the transition to slow oxidation. The person is often fearful and resentful about the change toward slow oxidation.
- **Addictive pattern.** One may use stimulants, in particular, to keep oneself in fast oxidation when the body is ready to move into slow oxidation. See the case at the start of this chapter.
- **A fast-to-slow oxidation transition pattern.** One is still technically a fast oxidizer, but the adrenals have weakened and the body is rapidly moving toward slow oxidation in most cases.
- **Can be a difficult resistance-to-change pattern.** Most fast oxidizers such as young children are caught in this pattern for a while, unable to transition easily to slow oxidation. Development helps tremendously in some cases with copper and magnesium, in particular, that helps the pattern resolve into slow oxidation.
- **Iron needs to be replaced with copper.** Fast oxidation is a more masculine, yang and iron-dependent condition in many cases. Copper softens the personality, literally. It is a feminine mineral and eases the transition to slow oxidation in many cases. SBF is high in copper and contains no zinc or iron for this reason. Dr. Eck somehow figured all this out empirically.

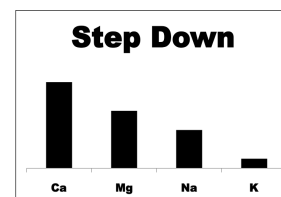
- **Supplements that lower copper can worsen illnesses associated with this pattern.** Giving vitamins B complex, C and E, or too much zinc are common errors with this pattern.
- **Type of movement.** Still effective, but losing speed and starting to stall.
- **Traditional Chinese medicine and chakras.** Still yang but decreasing quickly in most cases. The second chakra is working hard but is reversed in direction and slowing.

IMPORTANT PATTERNS CONSISTING OF FOUR RATIOS – All of the rest of the hair analysis patterns in this chapter are more recently researched since Dr. Eck's passing in 1996.

- Slow oxidation (high Ca/K, low Na/Mg) with high Ca/Mg and high Na/K – STEP DOWN.
- Fast oxidation (low Ca/K, high Na/Mg) with low Ca/Mg and low Na/K – STEP UP.
- Fast oxidation (low Ca/K, high Na/Mg) with high Ca/Mg and low Na/K – FAST BOWL.
- Slow oxidation (high Ca/K, low Na/Mg) with high Ca/Mg and low Na/K – SLOW BOWL.
- A Bowl with Ca/Mg above 13.5 and Na/K less than about 1 – DEEP BOWL or SKIDDING.

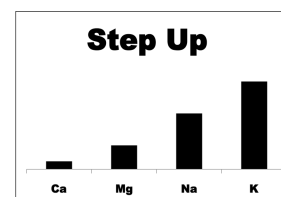
1. STEP DOWN PATTERN. Definition. A slow oxidizer with a calcium/magnesium ratio greater than 9.5 and a sodium/potassium ratio is greater than 6. **Interpretation and symptoms:**

- **Whom.** Almost always adults, and often in more aware individuals.
- **Causes.** Usually a combination of adrenal exhaustion and a strong will to move ahead.
- **A special double high ratio pattern.** This pattern occurs only in a slow oxidizer.
- **Psychology.** A very strong efforting or willful pattern. A high sodium/potassium ratio indicates an effort to move ahead and increase the oxidation rate. However, the energy level is low and the effort is often unsuccessful for this reason.
- **Possibly a super spiritual defensive pattern.** *Step down* may contain a *spiritual defensiveness* pattern. In this instance, *step down* can be viewed as a super spiritual defensive pattern, especially if a *sympathetic dominance* pattern is also present, as it often is.
- **Signs and symptoms.** Fatigue and always some anger, hypoglycemia and usually other slow oxidizer symptoms are possible. Thyroid imbalance is common, either hypothyroidism or rarely Grave's disease. This has to do with the efforting involved in this pattern.
- **At times, a conflict.** The person wishes to speed up and move out of slow oxidation, but at the same time may be quite afraid of speeding up, or the body is just weak.
- **A great need for zinc.** Zinc will balance the sodium/potassium ratio with this pattern.
- **Visual.** A *step down* pattern appears as steps descending from left to right on an ARL calibrated chart. It also looks like the person is "up against a wall", with the wall behind the person, not in front, as occurs with a *step up pattern*.
- **Type of movement.** Slow, somewhat stalled, usually steady forward movement.
- **Traditional Chinese medicine and chakras.** A more yin pattern, though not too yin. The chakra imbalances are variable, but usually requires first chakra grounding.



2. STEP UP PATTERN. Definition. A fast oxidizer with a calcium/magnesium ratio less than about 4 and a sodium/potassium ratio is less than 2.5. **Interpretation and symptoms:**

- **Whom.** Children or adults, usually with severe, chronic illness.
- **Causes.** Biochemical causes are severe copper deficiency, and

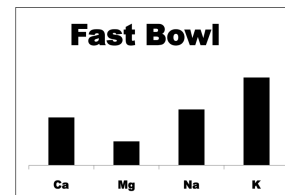


perhaps iron, manganese and cadmium toxicity. This is coupled with perhaps a stubborn nature or emotional traumas that keep the person in fast oxidation, and moving in an unhealthy direction without success.

- **A special case of the double low ratio pattern.** It occurs only in a fast oxidizer.
- **An extreme case of a fast oxidizer with a low sodium/potassium ratio.**
- **Uncommon today, perhaps for two reasons.** 1) It is often a fatal pattern so one may die before coming for help, and 2) there are fewer fast oxidizers today.
- **Psychology.** Looking for ego-based answers or in the lower chakras, with extreme efforting. It is a kind of martyr or death pattern in many cases and can be difficult to turn around.
- **Signs and symptoms.** This pattern is often associated with serious illnesses such as diabetes, heart disease, strokes, high blood pressure, kidney failure, cardiomyopathy, cancer or others.
- **A difficult transition and resistance-to-change pattern.** The person is very stuck. Instead of resolving, many with this pattern unfortunately do not survive.
- **A great need for copper.** This pattern has three indicators for copper supplementation: 1) fast oxidation, 2) a low sodium/potassium ratio, and 3) a low calcium/magnesium ratio.
- **Visual.** This pattern looks like steps going up from left to right on an ARL calibrated hair chart. It also looks like one is “up against a wall”, with the wall in front or to the right.
- **Type of movement.** Great willfulness and coordinated effort or force, but reversed and often fatal from misdirected and futile effort.
- **Traditional Chinese medicine and chakras.** Yang, but with a serious yin or blood deficiency. Imbalanced second chakra.

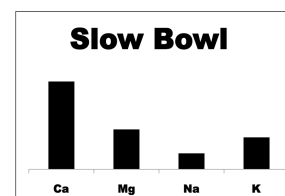
3. FAST BOWL PATTERN. Definition. A bowl pattern in which the oxidation rate is fast. **Interpretation and symptoms:**

- **Whom.** Children or adults under a lot of stress.
- **Causes.** Nutritional imbalances combine with improper diets and lifestyle stress to create it.
- **Psychology.** More frustrated, hostile and resentful than defensive, as occurs with a slow bowl (a bowl pattern in a slow oxidizer).
- **A stalled transition pattern from fast to slow oxidation.**
- **A partial collapse toward a four lows pattern.**
- **Possibly a more difficult dilemma pattern to move out of** – more like a step up pattern.
- **Signs and symptoms.** Feeling stuck emotionally and perhaps physically. Symptoms may be due to a combination of fast oxidation, a low sodium/potassium ratio and a high calcium/magnesium ratio.
- **Visual.** Appears like a lopsided bowl that is higher on the right side on a calibrated hair chart from ARL. It also looks like one is sliding backwards or toward the left.
- **Type of movement.** Slow forward movement, but a threat of reversal due to the low sodium/potassium ratio, and because one is feeling stuck.
- **Traditional Chinese medicine and chakras.** More yang bowl pattern, perhaps with yin deficiency. Needs more research. Possibly a second chakra imbalance due to low Na/K.



4. SLOW BOWL PATTERN. Definition. A bowl pattern in which the oxidation rate is slow. **Interpretation and symptoms:**

- **Whom.** Mainly older children and adults, more women than men.

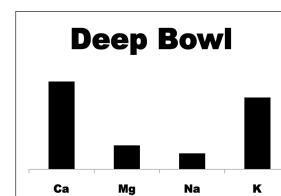


- **Causes.** Adrenal exhaustion may combine with a diet high in carbohydrates and perhaps lifestyle imbalances to cause a partial collapse.
- **Psychology.** Feeling burned out and somewhat stuck and exhausted.
- **Type of movement.** Slow, quite stalled, reversed energy, and unhealthy.
- **Visual.** A lopsided bowl that is higher on the left side on a calibrated hair chart from ARL. It looks like one is sliding forward or toward the right.
- **Traditional Chinese medicine and chakras.** Much more yin bowl pattern, with yin deficiency as well.

5. DEEP BOWL OR SKIDDING. Definition. A bowl with a calcium/magnesium ratio above 13.5 and a sodium/potassium ratio below 1:1. Variants are a fast oxidizer deep bowl or a slow oxidizer deep bowl.

Interpretation and Symptoms:

- **Whom.** Most often adults.
- **Causes.** A deeper collapse due to some type of stress, usually including nutritional and biochemical imbalances.
- **Analogy.** Very stuck in the mud, but still on the road. Skidding or sliding into four lows. In *four lows*, the person is stuck, but in a ditch off the road, which is worse.
- **More difficult to emerge from than a shallow bowl pattern.**
- **Psychology.** A difficult dilemma pattern, feeling quite stuck with no options.
- **Signs and symptoms.** The same as the other bowl patterns, but perhaps more extreme.
- **This pattern is not as important on retests.** If a person follows a development program, it is often a retracing and, while interesting, it usually passes quickly.
- **Type of movement.** Very stalled, and closed to real movement.
- **Chinese medicine and chakras.** More yin, especially if it is a slow, deep bowl pattern. Chakras are variable.



IMPORTANT PATTERNS CONSISTING OF LEVELS AND RATIOS.

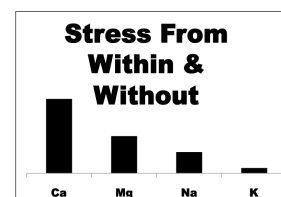
Patterns consisting of 1 level and 1 ratio:

- Very low potassium and a high Ca/Mg ratio – STRESS FROM WITHIN AND WITHOUT.
- Very low potassium and a low sodium/potassium ratio – BURNED OUT SYMPATHETIC DOMINANCE.
- A calcium shell and high calcium/magnesium ratio – SEVERE LIFESTYLE IMBALANCE
- A calcium shell and a low sodium/potassium ratio – SEVERE BURNOUT
- A calcium shell and a low calcium/magnesium ratio – SEVERE WITHDRAWAL.

1. STRESS FROM WITHIN AND WITHOUT. Definition. A *sympathetic dominance pattern* (low potassium) combined with a *spiritual defensiveness* (high calcium/magnesium ratio). Calcium, however, does not have to be very high.

Interpretation and symptoms:

- **Whom.** This usually occurs in more spiritually-minded people who are trying too hard to fit in with family, friends, school or society. It can occur as early as the



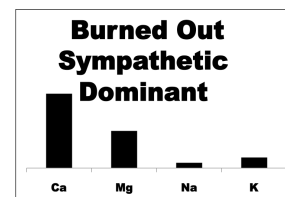
teenage years or perhaps even younger, and probably occurs more often in young women than in young men.

- **Causes.** Pushing oneself when either an attitude or a lifestyle situation is not helpful and is not working well. Common examples are regular high schools or college situations.
- **A combination of pushing oneself and a situation that is holding one back on one's life path and needs to change.** The stress from within comes from pushing oneself. The stress from without is the situation or attitude that is not working and needs to change.
- **A result, at times, of just continuing to push oneself.** If a young person is not careful, it is easy to create a situation that will not work out. This is an arrested development pattern because in some way the person has moved in a direction that is not working well.
- **A stalled, fast-to-slow transition pattern (sympathetic dominance).** However, it is with a definite subject of some kind related to lifestyle or attitude.
- **An important "need to move on" pattern.** It may have to do with an attitude or some aspect of lifestyle such as a job, schooling, or a relationship.
- **Similar to the *trying too hard* pattern.** The main difference is that instead of withdrawing into a calcium shell, the person has created or is caught in a lifestyle situation or attitude that is not working well for him, or more likely for her.
- **Signs and symptoms.** Depression is common, along with fatigue, hypoglycemia, and adrenal burnout symptoms.
- **Type of movement.** Slow, stalled, forceful, blocked.
- **Traditional Chinese medicine and chakras.** A yin pattern. Chakras variable.
- **Variants.** This pattern could combine with a *calcium shell*, a *low sodium level*, a *high or low sodium/potassium ratio*, *biounavailable calcium and magnesium*, or *four lows*. This is not intended to confuse the issues, but to illustrate how complex these patterns can become.

2. BURNED OUT SYMPATHETIC DOMINANT. Definition.

A *sympathetic dominance pattern* (low potassium) and a *low sodium/potassium ratio*. **Interpretation and symptoms:**

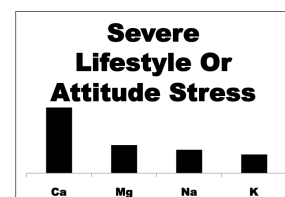
- **Whom.** Young adults in most cases.
- **Causes.** Pushing oneself to exhaustion, with a negative attitude of hostility and resentment.
- **Signs and symptoms.** Extremely low energy, depression, hypoglycemia, aches and pains, allergies and other low adrenal symptoms. Eventually serious health problems may occur.
- **Copper toxic, but with a need for some copper supplementation.** Although copper toxicity is present, Dr. Eck found they need some copper to come out of the pattern.
- **Type of movement.** Very slow, reversed and very ineffective. Dangerous if it persists.
- **Traditional Chinese medicine and chakras.** Extreme yin with yin deficiency. Very unbalanced first chakra in most cases.



3. SEVERE LIFESTYLE OR ATTITUDE STRESS..

Definition. A calcium shell (very high calcium) combined with spiritual defensiveness pattern (a high calcium/magnesium ratio). **Interpretation and symptoms:**

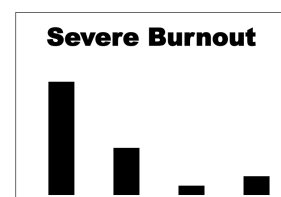
- **Whom.** Uncommon pattern, usually younger adult women.
- **Causes.** Staying in an unhealthy relationship or work situation, or holding on to a negative attitude, especially in a sensitive person.



- **Psychology.** One who is very unhappy in a situation that is neither helpful nor necessary.
- **Signs and symptoms.** Usually tired, anxious, irritable, muscle cramps, insomnia, with perhaps depression and other emotional and physical symptoms, depending upon how long the pattern has been present and how extreme the pattern is.
- **Type of movement.** Stalled, slow, and somewhat blocked because the brakes are on tightly.
- **Traditional Chinese medicine and chakras.** Quite a yin pattern, depending on the sodium and potassium levels. Variable chakra patterns are possible, but always a lack of grounding.
- **Variants.** This pattern may combine with *sympathetic dominance*, a *low sodium/potassium ratio*, *very slow oxidation*, a *double high ratio*, a *slow bowl*, *step down pattern*, *four highs* or even with a *fast oxidation rate* if there is a significant secondary alarm reaction. Once again, this is just to illustrate how complex hair analysis interpretation can become.

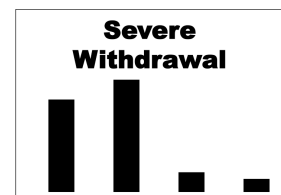
4. SEVERE BURNOUT – Definition. A *calcium shell* (very high calcium level) with a *low sodium/potassium ratio*. **Interpretation and symptoms:**

- **Whom.** More common in women, but may occur in any group.
- **Causes.** Nutritional depletion plus emotional withdrawal.
- **Signs and symptoms.** Depression is prominent, though the person is usually very out of touch with feelings and with reality due to *two lowered awareness patterns present at the same time*. Other symptoms of adrenal exhaustion are also common such as aches and pains, sweet cravings, exhaustion, low blood sugar and others.
- **Type of movement.** Blocked by a shell, the brakes are on, and reversed. Not a healthy situation at all.
- **Traditional Chinese medicine and chakras.** Extreme yin pattern with yin deficiency. The first chakra is usually very closed or inactive.



5. SEVERE OR INTENSE WITHDRAWAL – Definition. A *calcium shell* and a *low calcium/magnesium ratio*. **Interpretation and symptoms:**

- **Whom.** More so in women, but fortunately this is an uncommon pattern.
- **Causes.** Severe, prolonged stress causes extreme emotional withdrawal.
- **Signs and symptoms.** Severe depression and suicidal tendencies are possible. Other symptoms are those of slow oxidation and bioavailable calcium and magnesium.
- **Type of movement.** The brakes are on very tightly so there is little movement.
- **Traditional Chinese medicine and chakras.** Extreme and pure yin pattern. Chakras imbalances may be pronounced.



Patterns consisting of 2 levels and 1 ratio:

1. WASTING ONE'S TIME. Definition. A *calcium shell* (calcium above 170 mg%), *sympathetic dominance* (potassium less than 5 gm%) and a *spiritual defensiveness pattern* (calcium/magnesium ratio above 13.5). **Interpretation and symptoms:**

- **Causes.** Probably more common in women who are stuck in



relationships that do not serve them, or anyone stuck in a job or with an attitude that does not serve them.

- **Unhealthy pattern.** This is a quite a severe burnout pattern.
- **Signs and symptoms.** These include fatigue, hypoglycemia, and later on may be associated with cancer and other serious illnesses.
- **Type of movement.** Willful and forceful, but with the brakes on, stalled or reversed.
- **Traditional Chinese medicine and chakras.** This is an extremely yin pattern with yin deficiency and therefore dangerous for life. Very ungrounded and needing first chakra help.

Patterns consisting of 1 level and 2 ratios

1. TRYING HARD TO STAY AFLOAT. Definition. A *double high ratio pattern with sympathetic dominance.* **Interpretation and symptoms:**

- **Whom.** Middle-aged women, mainly.
- **Causes.** Found in many who were formerly in a *wasting one's time, stress from within and without, or trying too hard* pattern. Now these people have a secondary alarm reaction superimposed upon their previous pattern due to even more stress.
- **Trying to avoid sinking into despair and four lows.** This is the essence of this pattern.
- **Signs and symptoms.** These are basically the same as the previous patterns, often with symptoms of slow oxidation, copper toxicity, burnout, hypoglycemia and perhaps serious diseases, particularly cancer.
- **Type of movement.** Picking up speed again, but in a toxic and dangerous fashion. Unstable forward movement using a lot of willpower. Movement may be choppy or uneven.
- **Traditional Chinese medicine and chakras.** Less yin than the others, but some yang rising and unstable. Chakra patterns vary.

Even more complex patterns could be described. However, these are the most common.



HIDDEN MACROMINERAL PATTERNS

The following two macromineral patterns often cannot be read directly on a hair analysis. At times, they may be identified indirectly, or one must wait for a retest to identify the patterns:

1. *A slow oxidizer on crutches.*
2. Three types of *temporary fast oxidizers* – physical stress, psychological stress and vampires.

1. SLOW ON CRUTCHES. Definition. A slow oxidizer whose oxidation rate looks faster than it really is because the oxidation rate is supported or enhanced by ‘crutches’. These are often biounavailable forms of iron, manganese, copper, or perhaps some aluminum, cadmium, lead and other toxic metals. **Interpretation and symptoms:**

- **Whom.** Many slow oxidizers are “on crutches”.
- **Causes.** As a person tires out and becomes nutritionally depleted, the body accumulates the ‘crutches’ or toxic metals to help balance body chemistry. The crutches may irritate the adrenals, the kidneys or perhaps the nervous system to stimulate adrenal hormone output.

- **Stimulation, not nourishment.** The action of the crutches, unfortunately, is mainly stimulatory and not nourishing. As a result, they eventually lead to adrenal burnout.
- **Physiology.** Many of the crutches appear to be metal oxides, and may cause oxidant damage. They include copper, iron, manganese, chromium and selenium oxides. Lead, cadmium and other toxic metals also form oxides and other irritant compounds in the body.
- **Medical drugs are other common crutches.** They may include thyroid and adrenal replacement hormones, ADD drugs, anti-depressants, cigarettes, recreational drugs such as marijuana and cocaine, and a few others.
- **Psychology.** The “crutches” allow a person to keep functioning. However, one is more unstable, more tired, and more unhealthy than the hair test even indicates.
- **Signs and symptoms.** One usually has a mix of symptoms of slow oxidation and symptoms related to one’s particular crutches, as most are quite toxic. For example, many have copper toxicity symptoms such as headaches, PMS, rashes and acne.
- **Rollercoaster oxidation rates and energy levels.** The release of one’s crutches during a development program causes ups and downs in a person’s oxidation rate and energy level during the program. Eventually, most of the crutches come out and energy stabilizes.
- **Healing requires years in some cases to rid the body of crutches.** The crutches will not be released until they are no longer needed.
- **Hidden crutches.** Besides the crutches discussed above, others may include exotic toxic metals and hundreds of toxic chemicals that are impossible to detect. However, they, too, will contribute to energy fluctuations and erratic changes in the oxidation rate on repeated hair tests as they are eliminated from the body
- **Type of movement.** Crutches enhance forward movement in most cases, and are useful for this reason. This is why they are called crutches, not simple poisons, though they are toxic.
- **Traditional Chinese medicine and chakras.** Slow oxidizers are all yin and the crutches do little to change this. In some cases, such as copper toxicity, they make the body more yin. Chakra patterns vary. The presence of crutches is always harmful for the chakras.

2. TEMPORARY FAST OXIDIZERS DUE TO 1) PHYSICAL STRESS, 2) PSYCHOLOGICAL STRESS AND/OR 3) VAMPIRISM. The only difference between these causes of temporary fast oxidation is the type of stress that causes the pattern. They are discussed together to save space. The pattern is called *hidden* because a hair analysis might indicate true fast oxidation, but it is really not the case. **Interpretation and symptoms:**

- **Whom.** Anyone over the age of about 3-10 is usually not a true fast oxidizer, no matter what a hair analysis indicates. This means that if the person follows a development program, the oxidation rate will eventually shift to slow oxidation.
- **Physical stress fast oxidizers.** This type of temporary fast oxidizer is due to the use of stimulants or the presence of physical poisons such as toxic metals, toxic chemicals, or even an infection that gives off toxins. It could also be due to extreme muscle tightness or nerve irritation.
- **Psychological fast oxidizers.** This type of temporary fast oxidation is due to an emotion or attitude. The emotion might be extreme anxiety, anger, fear, rigidity, or just a lack of emotional control. The attitude might be extreme paranoia, egotism or a very fast-paced and hectic lifestyle. An aggressive temperament is possible, though this is often secondary and due to the presence of toxic metals.

- **Vampire fast oxidation.** In this type of stress fast oxidation, the person has little energy of his own, but draws energy from others. The vampire is commonly a person in a position of power, with the most common being parents, followed by teachers, politicians or other “stars” like rock musicians, sports figures, etc. However, they are common throughout society. The vampire steals energy basically by upsetting his or her victim. Hundreds of methods can be used. Most victims are clueless as to what is occurring and the young are the most common victims. The victims either become slow oxidizers, or may become vampires themselves in retaliation. Mr. Roy Masters discusses this rather morbid idea and I offer a CD program about it as well. Chapter 43 discusses it more as well.
- **Signs and symptoms.** A mixture of fast and slow oxidizer symptoms may occur, since the person is not a true fast oxidizer, even if a hair test indicates it. Other symptoms may depend on other nutritional imbalances that are present on the test.
- **Telltale signs of these patterns.** They include 1) odd symptoms that don’t match a fast oxidizer hair test, especially symptoms of slow oxidation such as fatigue, depression or others. 2) age greater than three or four in a fast oxidizer, 3) occupational or other exposure to toxic metals or chemicals, 4) a history of disease, 5) use of stimulants, and 6) possibly a very irritating or unusual personality style, indicating possible vampirism.
- **Controlling personality type.** Since the underlying body chemistry is not healthy, these hidden or temporary fast oxidizers may expend a lot of energy keeping themselves in fast oxidation. This may cause a controlling personality type and a subtle tendency to support and promote authoritarian or socialist politics and policies.
- **Breakthroughs.** This is a kind of breakthrough pattern in which the brain compensates for a weakened body chemistry by assuming greater control. However, the body’s weakness keeps “breaking through” all day long, so the person’s entire outlook and thought processes can be affected. This can explain some very odd beliefs, attitudes and behaviors.
- **Brittle fast oxidizers.** While they may appear strong and tough, these people are not as tough as they appear. In fact, they will often crumble into slow oxidizers on a development program after a few weeks to a year, provided they follow the program correctly.
- **Difficult clients.** These fast oxidizers may not like the feeling of slowing down and “falling” into slow oxidation.
- **Type of movement.** Often effective and strong, but limited or closed in many ways. Weak underlying body chemistry tends to cause instability, selfishness and some attack, aggression or uncontrolled movement tendencies.
- **Traditional Chinese medicine and chakras.** More yang than slow oxidizers, but not nearly as solid or yang as a real true fast oxidizer.

SUBTLE SIGNS OF ILLNESS AND HEALTH

At times, a hair analysis superficially look excellent, but the patient does not feel well. In these cases, look for these telltale signs of poor health:

- *Very low toxic metal readings in a person with a serious or chronic illness.* This likely indicates the person is unable to eliminate toxic metals very well, which is a sign of ill health.
- *Low selenium, chromium, zinc or phosphorus.* These are critical elements for health. If they are quite low, other indicators such as the oxidation rate may have less importance.

- *Zinc greater than about 15-16 mg% in a fast oxidizer.* Almost all true fast oxidizers have zinc levels between 12 and 15. A higher level may be the only sign that a healthy-looking fast oxidizer is really a temporary or burned out fast oxidizer.
- *Calcium greater than 100 mg%.* This is always a sign of some bioavailable calcium and a significant calcium imbalance in the body.
- *A phosphorus level of 14 or less when lead is elevated above 0.2 mg%.* Lead often displaces the phosphorus reading upward. So if phosphorus is borderline low, but lead is high, often the phosphorus reading will decline on a retest because it is lower than it first appears.

At times, a hair analysis does not look good, but the client feels well. Subtle hair analysis indicators of better health may include:

- *Excellent phosphorus and zinc levels, even if other levels and ratios are not as good.*
- *Good mineral ratios, even if the mineral levels are not good.*
- *On a retest, a rise in low sodium or potassium levels, even if other levels or ratios are worse.*

OTHER WAYS TO CLASSIFY THE PATTERNS ON A HAIR ANALYSIS

The hair analysis patterns above are classified by their complexity. However, patterns may also be organized or classified in other ways, among which are:

1. By their causes. Patterns may be due mainly to:

- *Diet and lifestyle.* These include a *high calcium/magnesium ratio*, *sympathetic dominance*, *four highs and four lows*. These often respond well to simple diet and lifestyle changes.
- *Nutritional deficiency states.* These include *the oxidation types*, in most cases, and many of the patterns. These respond well to development programs.
- *Stress and lack of emotional control.* These include most of the patterns to some extent, but in particular a *low sodium/potassium ratio* and often *slow oxidation* or *very fast oxidation* in babies and children. These can require stress reduction techniques for full correction.
- *Improper attitudes or thinking.* These can also cause most of the patterns, particularly a *low sodium/potassium ratio*, *all the stalled transition patterns* (see below), *spiritual defensiveness* and the *bowl pattern*. These may require more time for healing because most people cannot change their attitudes and thoughts quickly. Meditation and reading certain material may help, along with counseling, biofeedback and other methods.

2. Fast-to-slow-oxidation transition patterns. Each hair mineral analysis is a ‘snapshot’ of a dynamic, ever-changing process as the body adapts to stress. Understanding this important concept can help to clarify the interpretation process. The following patterns specifically indicate ways in which the body is stuck or stalled in the transition from fast to slow oxidation, or from the alarm stage of stress to the exhaustion stage of stress. They include:

- *Fast oxidation with a sodium/potassium ratio less than 1:1.* This is often the earliest of these patterns in terms of the stress theory of disease.

- *Sympathetic dominance.* This is often the next stage of slowing down from fast to slow oxidation. The person's oxidation rate has slowed. However, the person still has a higher stress lifestyle like a fast oxidizer, causing extreme stress.
- *Four lows.* This is an even later stage pattern in which the adrenals have weakened a lot, but the calcium and magnesium levels have not yet begun to rise into a typical pattern of slow oxidation. Many remain stuck in this pattern unless they do a development program.
- *Three highs or four highs.* This is also possibly another later stage failed fast-to-slow oxidation transition pattern or 'stuck' pattern, in a few cases. The body has usually moved into and through slow oxidation. It is in a secondary alarm reaction. Most people come out of the pattern quickly and easily, unlike some of the other patterns above. However, at times, a person will remain in three or four highs for a year or more. In these cases, one may have toxic metals and/or personality tendencies that are keeping one stuck in this pattern.
- *Bowl patterns.* These are also very 'stuck' patterns, especially if it is a deep bowl, and even more so if it is combined with a four lows pattern. However, many respond very well to development programs. This would indicate that biochemical imbalances may be present that are keeping the person in the pattern, as opposed to a lifestyle factor or other causes.

3. Directional change patterns. For example, *the sodium/potassium ratio* indicates the direction of movement of the oxidation rate. A high ratio indicates movement toward a faster rate, while a low ratio indicates movement toward a slower oxidation rate. A *hill pattern* often reflects a positive life change that has already occurred, or will soon occur. Other retest patterns such as *settling down* or *coming alive* (see page 291) also indicate a change of direction.

4. State of health patterns. For ex., Chapter 26 discusses high and low vitality patterns.

5. Quantifying the patterns. To quantify the seriousness of a hair test pattern, such as a double or triple pattern, is an advanced concept of hair analysis interpretation. It can be very useful to assess the severity and importance of a pattern, giving the doctor or nutrition consultant excellent additional understanding. This subject is beyond the scope of this book, but it is discussed in an article, *Quantifying The Patterns*, at www.drlwilson.com.

6. Other. These include *more yin or more yang, ease of resolution, how compliant the clients tend to be, happier patterns versus unhappy ones, which minerals are involved* and perhaps others.

POOR ELIMINATOR PATTERN – A VERY IMPORTANT, NEWER PATTERN

Whom. Both men and women equally, of all ages, even babies.

Causes. Impaired detoxification through the liver, kidneys, bowel, lungs, skin or elsewhere causes retention of toxic metals deep in the body, and causes very low hair levels of the toxic metals and/or nutrient minerals such as iron, copper and manganese. A very slow oxidation rate, sympathetic dominance, or a three lows or four lows pattern can contribute to the pattern, but other factors may play a role, as well. For specific poor eliminator mineral ranges, see page 207 and read the article entitled *Poor Eliminator Pattern* at www.drlwilson.com.

Signs and symptoms. Just about anything, depending upon which toxins are retained.

Type of Movement. Impaired movement that depends on which toxins are involved.

23.

HAIR ANALYSIS INTERPRETATION – STEPS 2 AND 3. INTERPRETING THE TRACE AND TOXIC MINERALS

Lisa, age 43, developed chronic fatigue syndrome or CFS or CFIDS, along with chronic infections over a year ago. When she first consulted me, she was bed-ridden most of the time with flu-like symptoms of fevers, chills, body aches, dizziness and severe brain fog. She doctored with well-known CFS clinics in California and did intravenous vitamins, nutritional supplements, bio-identical hormones, thyroid medication, antibiotics and Valtrex. After six months and thousands of dollars, her improvement was very minimal.

When Lisa began a development program the results were surprisingly fast and dramatic. In about a month, her energy improved 80%, she said, and she was no longer mainly bedridden. The brain fog was gone and she felt much more at peace, she said. More recently, an old sinus and ear infection flared up, causing headaches and more fatigue. It took her several weeks to move through these old infections and clear them from the body. Lisa is faithful about doing coffee enemas and using a near infrared sauna every day. During her sessions and at other times, she would move her head and ear closer to the heat lamps for a maximum of five minutes at a time to hasten the elimination of the sinus and ear infections. This allows the infrared to penetrate more deeply.

INTERPRETING THE TRACE MINERALS

INTERPRETING ZINC. *Think about zinc as the balancing and stabilizing mineral.*

- **Zinc in a good range** of 14-19 mg% indicates a better mental balance, in general. Fast oxidizers may have a slightly lower zinc level than slow oxidizers. A fast oxidizer with a zinc level greater than 15 mg% is probably a temporary fast oxidizer, not a true fast oxidizer.
- **A high zinc** often means zinc is trying to balance or protect against a toxic metal, usually copper. It is very rarely an indicator of too much zinc in the body.
- **A low zinc** often indicates problems with mental and emotional instability, reduced protein synthesis, copper toxicity, birth defects and developmental problems in children and perhaps an impaired immune response.
- **Defenders.** The zinc level may vary during a development program as it compensates and often defends the level of sodium and the sodium/potassium ratio.
- **Retests.** Zinc may decline on retests if it is acting as a defender or, more often, because it is being retained in the body replacing toxic metals in enzyme binding sites. This is not a problem and will correct itself on future tests.

- **Supplementation.** As explained in Chapter 15, Dr. Eck found that everyone needs a zinc supplement today and that the best way to decide exactly how much zinc is needed is to look to the sodium/potassium ratio because of the powerful effect of zinc on these mineral levels.

INTERPRETING PHOSPHORUS. *Think of phosphorus as the “power mineral” or digestive fire mineral.* A good range is between 15 and 18 mg%.

Vitality indicator. I use a phosphorus level of less than 12 as a low vitality indicator, although this was not part of Dr. Eck’s original research.

High phosphorus is not generally important. It usually indicates some mild tissue catabolism or breakdown of diseased tissue that soon corrects with a development program. Pubic hair often gives falsely elevated phosphorus readings.

Low phosphorus is a concern, especially if it is less than 12 mg%. A low phosphorus indicates insufficient protein synthesis. This, in turn, causes excessive tissue breakdown or a tendency for protein catabolism. A catabolic state of the body is always a serious condition because it slows or stops healing and regeneration of the body. Causes for it include:

- **The diet.** The diet could be 1) too low in protein, 2) high enough in protein, but of a poor quality such as too many beans, seeds and grains instead of meat, eggs and dairy products. Many vegetarians have a low phosphorus level for this reason. Low phosphorus is part of what Dr. Eck called a “vegetarian hair analysis”. It is also possible that the diet contains adequate protein, but the protein cannot be utilized well. This may be due to eating grains or beans that are not cooked well enough, or overcooking meat or eggs, for example, so the proteins are denatured excessively and not digested well enough.
- **The lifestyle.** One’s lifestyle may be hurried and chaotic, which impairs proper digestion. Many people do not chew their food, and millions eat in their cars or at their work desk while talking on the telephone or doing other things. Other problems are drinking too much liquid with meals, or overly complex food combinations, both of which impair digestion.
- **Digestive tract problems.** Many people with low phosphorus have a serious candida albicans or other infections in the intestines that interfere with protein digestion. Most also have a “leaky gut”, food allergies, and low digestive enzyme secretion or poor quality digestive enzymes. This is why Dr. Eck recommended a digestive aid for everyone. Others have serious liver toxicity that impairs amino acid conversion and synthesis in the liver. Others have more complex cell transport problems that interfere with protein utilization at other levels.
- **Zinc deficiency and/or copper toxicity.** A zinc deficiency alone will cause a low phosphorus level. Zinc is critical for DNA and RNA synthesis and all protein synthesis in the body.
- **Copper toxicity.** This will also cause a low phosphorus by interfering with protein utilization or synthesis.

Retests. Phosphorus can rise above normal if the body is breaking down diseased tissue at a rapid rate, or perhaps if the body is eliminating a biounavailable phosphorus compound.

Displacement. *Initial phosphorus readings can be somewhat displaced upward 1 to 3 mg%.* The presence in the body of certain toxic metals, notably lead, can push the phosphorus reading upwards. As the toxic metals are eliminated, the phosphorus level often declines a little on early retests. Eventually it will come up to normal or near normal on a healing program.

TOXIC METAL INTERPRETATION

Toxic metal readings alarm many practitioners and their clients. Let us begin with some general comments about interpreting toxic metals:

- **Importance.** *We assume that everyone today has a lot of toxic metals, even if the levels in the hair or elsewhere appear to be low.* Most are hidden deep in the body organs and tissues.
- **Toxic metals are often 'layered'.** They will come out in fits and spurts. First cadmium may be removed, followed by some lead. Then mercury will be eliminated, followed by some more lead, perhaps, and so on. The process will continue for years in most people if they follow a development program that is kept current for their metabolic patterns. This is true even for most children are today.
- **A low hair toxic metal reading means that, at the time the hair grew, the amount of the toxic metal deposited in the hair was low.** That is all it means!
- **A high hair toxic metal reading means that the toxic metal is currently being eliminated through the hair and/or skin.** That is all it means, although it often means there is a high level of the metal in the entire body and that this is the reason the metal found its ways into the hair tissue. The hair is a safe storage site for toxic metals. It is also a rather cumbersome, but effective way the body can eliminate some toxic metals, since the hair will be cut off and lost to the body.
- **Some people tolerate the presence of toxic metals much better than others.** In other words, in one person a rather minor level of a toxic metal can cause severe symptoms. In another person, high levels of three or four toxic metals do not cause intense symptoms. This probably has to do with the overall vitality level of the person, or perhaps other factors.
- **Development programs will remove up to two dozen toxic metals eventually, both those that are measured and those that are not read on the test.** This is a great benefit.
- **Displacement.** *All the toxic metals can displace the trace elements and the sodium and potassium levels upwards or possibly downwards. This will skew these readings until the toxic metals are removed, which may take months or even years.*
- **Retests.** *Toxic metals often rise on retests as they are eliminated.* Even a small increase in a toxic metal level may be quite significant and even if the level is still very low.
- **Special modifications of the program are usually not essential for toxic metals.** However, the following will remove them faster in most cases. Drinking distilled water for a few weeks to months, more rest and sleep, more saunas and perhaps more coffee enemas may help.

Extra products for toxic metals: Kidney support: When mercury, lead, cadmium and/or nickel are high, add food-based selenium (100 mcg) 1-1-1 and Renamide 1-1-1 or 2-2-2. Other possible products that may help all the toxic metals to be removed faster include vitamin C, (up to 1000 mg daily), milk thistle and dandelion only, L-taurine and ICMN (inositol, choline, methionine and niacinamide). These are methyl donors that are helpful to the liver. The latter should only be used occasionally, as too many products will upset the body in other ways and often slow elimination. Also, never substitute these for the core products that balance the oxidation rate and the major ratios.

Other specific toxic metal interpretation information:

- **Hidden 'three amigos'.** *An aluminum level of 0.1 mg% or greater may be used to assess the*

degree of hidden bioavailable iron and manganese. The ‘amigos’, as I call them, powerfully raise the sodium level, and to a lesser degree, the potassium level on a hair analysis. This was not part of Dr. Eck’s original research.

- **Hidden copper.** *A mercury level greater than about 0.01 mg% is a hidden copper indicator.*
- **Toxic metal personalities.** *A “personality type” may be indicated by elevated toxic metals.* For instance, there exists an arsenic personality, a cadmium personality, a mercury personality, a lead personality and an aluminum personality. These are the main ones I am aware of, but there could be others.
- **Kidney stress.** *High lead, mercury, cadmium and/or nickel, in particular, usually indicate significant kidney stress and possible ailments related to the kidneys.*
- **Liver stress.** *Elevated levels of any toxic metals often indicate extra stress on the liver.*
- **Malignancy.** *A high cadmium level, and, in fact, all high toxic metal levels can indicate a trend or tendency for malignancy, cardiovascular disease and other degenerative conditions.*
- **Counterintuitive nature of hair mineral analysis.** *While elevated toxic metals are not helpful for health, at times higher levels in the hair can be a good sign if it indicates more vitality and a better ability to remove toxic metals.* Often, other indicators on the hair analysis can help one to evaluate the meaning of the elevated toxic metals. For example:
 - *Fast oxidizers usually have higher levels of toxic metals than slow oxidizers.* This may seem odd because most fast oxidizers are less toxic than most slow oxidizers. It occurs because fast oxidizers have much more energy than most slow oxidizers with which to eliminate toxic metals, so more are revealed on the hair analysis.
 - *Babies, infants and children often have higher toxic metal levels than adults.* Babies are not more toxic than adults. The reasons for their higher hair levels of metals are 1) a higher vitality level that allows them to eliminate the metals more easily, and 2) most are fast oxidizers, which is related to the first reason.
 - *Those with four lows or even a slow oxidation pattern may be healthier if some elevated toxic metals are present.* When none are showing, vitality is often lower.
 - *Low toxic metal levels when the oxidation rate is fairly balanced and the sodium/potassium ratio is better than 2:1 is not necessarily an indicator of good health.* This is especially true if a person is known to be ill. It may simply indicate a very compensated hair analysis and an inability to mobilize and release toxic metals. This is common in cancer patients, for example. The balanced oxidation rate may just be a final attempt to conserve and produce energy. As health improves, the toxic metal levels may rise because the body is able to mobilize them better.
- **Environmental exposures.** *A high toxic metal level can indicate environmental exposure.* The reading may reflect 1) what is inside the person due to drinking contaminated water, for example, or eating too much fish, or 2) metal deposits mainly on the hair and skin, but not so much in the body. This may be due to bathing in contaminated water, for example, or using a toxic hair product. The second type of environmental exposure is much less serious and usually goes away quickly when the exposure stops. Of course, any substance that contacts the skin or hair can and will be absorbed into the body to some extent.
- **Development and karmic release.** *The deep removal of toxic metals has extremely profound effects on a human body that I believe will be discovered in the future. It seems to free a person from deep-seated burdens and obligations that go beyond simple symptom removal.*

Acceptable toxic metal levels. Each laboratory has its own acceptable toxic metal levels. However, many are too high. With a complete development program, it is possible to reduce the amount of toxic metals in the body and in the hair more than with chelation therapy or other methods of metal elimination.

The normal toxic metal values that I currently use change as the development programs improve. To find the most up-to-date ideal levels, ranges, toxic levels and poor eliminator levels, please go to WWW.DRLWILSON.COM. Go to the bottom right of the home page and click on the article entitled *Mineral Levels In Human Hair - Ideals, Ranges, Toxicity And Poor Eliminators*.

INTERPRETING IRON, COPPER, MANGANESE, CHROMIUM AND SELENIUM

COPPER. A good range for copper is about 1.5 to 2.5 mg%. Copper does not accumulate much in the hair tissue, and hair copper levels mean very little in this interpretation. Here are some principles of interpretation related to copper:

- **Unreliable.** *Hair copper levels are not significant, as they are often influenced by many factors.*
- **High copper in fast oxidizers.** This usually means 1) hidden copper toxicity with biounavailability and 2) that the person is a temporary fast oxidizer, or slow oxidizer under stress. Dr. Eck felt that such individuals are often somewhat compulsive and make excellent office workers, for example, because they are good at detail work.
- **All slow oxidizers tend to have excess copper, regardless of the hair reading.** Some slow oxidizers 'show' more copper on the test than others. Perhaps it has to do with being more open emotionally, but I am not sure and Dr. Eck did not speak about it too much.
- **All fast oxidizers need some copper regardless of the hair reading.**
- **Very low copper.** A level less than 1.0 mg% indicates a more severe copper imbalance.
- **Very high copper.** A hair copper greater than about 2.5 mg% indicates an imbalance, though an imbalance is possible even when the hair copper level is in the normal range.
- **Retests.** *The hair copper level often increases as copper is eliminated from the body.*
- **Biounavailable copper.** Most fast oxidizers, except for children under about age 3-6, have some biounavailable copper. Almost all slow oxidizers have some biounavailable copper. Dr. Eck learned this because as people progressed on a development program, the biounavailable copper would eventually start coming out of the body. As this occurred, many copper-related symptoms such as headaches, acne, anxiety and depression improved.
- **Hidden copper toxicity.** *The main criteria for this are a high calcium level, a low potassium level, a low sodium/potassium ratio, a low zinc level, a low phosphorus level and a high mercury level.* See Chapter 15 for more details about hidden copper toxicity indicators.
- **Supplementation.** *All fast oxidizers and everyone with a low sodium/potassium ratio needs a copper supplement.* Most others do not need copper and it is harmful, no matter what the hair copper level indicates. Chapter 15 gives more details about copper supplementation.

IRON. An ideal hair iron is about 1.8 - 2 mg%. Iron does not normally build up in the hair, so the hair level, when low, is not a reliable way to measure the body's iron level.

- **Significance.** A low iron level is not significant. A high level indicates excess and biounavailable iron.
- **Widespread toxicity, especially among slow oxidizers.** *This is true regardless of the hair iron level.* I know this because if a person follows a development program for long enough, often some excess iron is eliminated through the hair or elsewhere.
- **Biounavailability.** *High hair iron indicates some degree of biounavailable iron.* Also, most slow oxidizers in particular, have some biounavailable iron. It seems to be part of aging.
- **Showing high hair iron.** *In a few studies of juvenile offenders, almost all showed high iron.* Perhaps they are simply more toxic with iron.
- **Retests.** *A high iron level almost always indicates an active elimination of biounavailable iron through the hair and skin.* It does not necessarily indicate more severe iron toxicity.
- **A low hair iron.** This means very little, in my view. At one time, Dr. Eck associated it with anemia, but I have not found this necessarily to be true.
- **Hidden iron.** *An aluminum level above about 0.1, or a manganese level above about 0.04 generally indicate hidden iron toxicity and biounavailability.*
- **Supplementation.** *Iron supplements are rarely needed. Exceptions are malnourished people, some strict vegetarians and a few menstruating women who eat poorly and have heavy periods. Iron may be needed for a short time if loss occurs for any reason such as a severe accident or surgery.*

MANGANESE. An ideal range for manganese is 0.03 to 0.04 mg%.

- **Significance.** *Most people in the Western world are deficient in bioavailable manganese, regardless of the hair reading.*
- **Bioavailability.** *Most people have some biounavailable manganese, especially slow oxidizers.* I know this because during development programs, manganese will usually rise on retests at some point, indicating an elimination of biounavailable manganese.
- **High hair manganese.** *On a first hair test, it indicates manganese toxicity and biounavailability.* In a few cases, it indicates manganese just in or on the hair due to bathing in contaminated water. High manganese in the water supply is occasionally seen especially on the East coast of the USA.
- **Low manganese.** *This is not significant, since everyone needs more manganese.*
- **Retests.** *Manganese may rise on a retest as it is eliminated during a development program.* It does not necessarily indicate severe manganese toxicity.
- **Hidden manganese.** *Indicators are an iron level greater than about 2 mg% or an aluminum greater than 0.1 mg%.* This is a rough guide, but quite helpful, at times.
- **Supplementation.** *Dr. Eck supplemented most everyone with manganese, especially slow oxidizers and those with a low sodium/potassium ratio.*

SELENIUM. A good range for hair selenium is about 0.09 to 0.12 mg%.

- **Importance.** Hair selenium readings may not be too significant.
- **Everyone deficient.** Almost everyone needs a selenium supplement.
- **Low selenium.** This indicates a more severe deficiency in most cases.
- **High selenium on a first test.** This usually indicates the use of Selsun Blue shampoo.

- **Retests.** During a development program, a high level almost always indicates a release of a bioavailable form of selenium through the hair and skin, as part of a healing process. This is not a concern and the level returns to the standard range usually on the next hair analysis.
- **Supplementation.** A food-based selenium supplement is often best.

CHROMIUM. A good range for hair chromium is about 0.12-0.16 mg%.

- **Importance.** Hair chromium readings may not be too significant.
- **Everyone deficient.** Everyone needs a chromium supplement.
- **Low chromium.** This indicates a more severe deficiency in most cases.
- **High chromium on a first test.** This is rare, but could be due to toxicity or flaking of a little chromium from older chromium-plated scissors used to cut the hair sample.
- **Retests.** During a development program, a high level almost always indicates a release of a bioavailable form of chromium through the hair and skin.
- **Supplementation.** Chromium is well-absorbed in many supplemental forms.

OTHER MINERALS. The hair levels of the other trace elements such as cobalt, molybdenum, lithium, silicon, boron and others are somewhat unreliable and I don't pay attention to them. A high level of lithium will occur with medical lithium therapy. High levels of cobalt, boron or other minerals occasionally occur, and I usually cannot trace the source. In some cases, they are due to drinking and/or bathing in contaminated well water, for example. By staying with a development program, these levels tend to even out on their own. More research may reveal other meanings for these readings.

DETAILS ABOUT STEP 3. ADDING OTHER CLIENT INFORMATION

The most essential client data that is required includes:

- **Age, height, weight and gender.** Larger and heavier people may need higher doses of supplements. Children and teens often can just use two doses per day. Obesity may be helped by a lower carbohydrate diet, for example.
- **Diet and eating habits.** This is essential for test interpretation in some cases.
- **Occupation.** This is less critical, but may be needed to interpret the hair test for occupational exposure, stress, lifestyle and to help understand a person psychologically.
- **Sleep and exercise - amounts and types of exercise.** This is helpful for test interpretation, at times. Even the time one goes to bed is helpful to know, as the hours before midnight are often much healthier for resting and healing the body. The kind of exercise matters a lot in some cases. Walking, for instance, is healthful. Jogging, aerobics or other vigorous exercise regimens are not healthful on a development program.
- **Other client information.** Pertinent facts may include a person's temperament, family situation, old illnesses, injuries, accidents, hospitalizations, surgeries or past traumas.

Gather all symptoms, preferably using a symptom sheet. Doctors are often trained to focus on the "chief complaint". For development, one ideally needs to know **all** symptoms, including physical, emotional and mental ones because:

- *Seemingly minor symptoms, such as constipation or insomnia, may be critical to know.*

- *Knowing all symptoms may, at times, be needed to help interpret a hair analysis.*
- *With a whole system approach, the body heals the most critical symptoms first, not the one or ones the client thinks are most important.* This is an important aspect of development science to recall at all times. Thus, symptom correction can occur in an unusual order. If the practitioner knows all of a client's symptoms, he can encourage a client to stay with the program, even though the most pressing symptom may persist for a while.

Other diagnostic test data. Blood tests and others can help evaluate some conditions and are occasionally needed. In most cases, however, Dr. Eck and I find that other testing is not needed. This puzzles many doctors, including the author. However, over the years, I found that the hair test, when used properly, is often all that is needed.

NOTE. Blood or other tests may reveal abnormal readings during a development program as the body moves back toward a healthier stress response. This often worries practitioners and clients alike. When it occurs, ask simple questions such as whether the client is following the development program completely, and how the client is actually feeling. If one is following the program and doing well, most often the test result is temporary and not important. Repeating the blood or other test in a few weeks often yields a better test value.

Nutritional supplements or remedies taken. This information is very helpful for its:

- *Influences on the hair test.* Most supplements are not targeted enough to influence the test much. However, occasionally they do, especially natural hormones, some herbs, and perhaps high-dose vitamins and minerals. Many herbs, for example, contain some toxic metals.
- *Negating the program.* The use of other supplements or herbs, even of the best quality, often reduces or can totally negate the effectiveness of development programs. Relieving symptoms, for example, is often a very different approach than development.
- *Too yin.* Most pills, powders, and especially drinks are very yin in Chinese medical terminology. This interferes with balancing the body in subtle ways.
- *Other.* Knowing the supplements and remedies a client was taking can help the practitioner understand the client's attitudes, perhaps, and knowledge level as well. I have angered a number of clients by suggesting that the person take only a few nutritional supplements, for example. Some people are completely convinced that the more supplements, the better.

All medical drugs taken. These include prescription and non-prescribed ones. Here are some suggestions regarding what to tell clients about them:

- *Side effects.* Any imaginable symptom may be due to an adverse effect of a drug, hormone and even some herbs. Many adverse effects are not listed in the *Physician's Desk Reference* and other therapy books. Always try to rule out drugs as causes of symptoms.
- *Combinations of drugs.* Side effects of polypharmacy, or drug combinations, are much worse and even more impossible to predict. Try to help clients to simplify their drug use.
- *Doctor's ignorance.* Never assume that prescribing doctors are aware of all the side effects of the drugs they give out, or that they coordinate with the client's other doctors in this area.
- *Preventive drug use.* Beware of the newest trend the drug companies have cooked up. It is called preventive drug use. It sounds good, and will help some people. However, it is quite toxic and costly for the patient, and only rarely addresses the underlying causes of illness.

- *If possible, learn the basics of drug terminology and use.* It is not that complex. About 10 classes of drugs are used 90% of the time. Older drugs that have stood the test of time are often safer, much cheaper and equally effective as the new, fancy ones. A high percentage of new drugs are eventually banned because they are so toxic. If a client must be on a drug, the old ones are usually better, though not always. Newer drugs are often rehashes of older ones designed to be just new enough to obtain a new patent and provide more money for the drug company that makes it. Heavily advertised, doctors prescribe it instead of the old ones.
- *Those on some drugs need more monitoring.* These include drugs used for hypertension, hypothyroidism, hyperthyroidism, corticosteroids, insulin, oral anti-diabetic drugs and anti-depressants, for starters. These may need to be discontinued or reduced as a client recovers.

CORE ISSUES

At times, one can identify a dominant factor in a client's lifestyle, diet or other situation. This is not necessary, but may be extremely helpful to direct your consultation time and to maximize the effectiveness of a healing program. Important themes or core issue are:

- *Fast oxidation.* These are usually anxious, irritable people who have difficulty relaxing.
- *Slow oxidation.* Many symptoms of slow oxidation are present such as fatigue, depression, constipation, low thyroid symptoms and perhaps low blood sugar and low blood pressure. The slow oxidation rate is the dominant factor in the case.
- *Copper toxicity.* This is a common theme, especially in young women with depression, anxiety, emotional instability, brain fog, and perhaps bipolar disorder, obsessive-compulsive tendencies, PMS, acne, easy bruising, a tendency for yeast infections, intestinal gas and/or bloating. Copper toxicity may or may not be 'showing' on the hair analysis.
- *Lifestyle.* In these cases, a lifestyle factor such as lack of rest or too much exercise dominates.
- *Diet.* At times, a dietary factor is dominant and causing half or more of a person's problems.
- *Vegetarianism.* These cases present special challenges such as an inability or unwillingness to follow the diet and, perhaps to take some supplements. Reasoning with the person may work, or one may have to work around the problems as best one can (see page 52).
- *Nervous exhaustion.* These people need a lot more rest, less stimulation, less running around and a more peaceful lifestyle and home life. They are common in modern society and not easy to help if they will not or cannot change their hectic lifestyles.
- *Overwhelming stress.* This is different from the case above only in that a person is caught in a trap of a very stressful job, relationship or some other terrible problem. For the best results, spend some time with the client brainstorming ways out of the problem.
- *Lack of emotional control.* Stress, emotional immaturity, egoism, or perhaps just impaired general health can give rise to severe emotional problems in some clients. They can usually be helped by adding to the program suggestions as to how to control the emotions with relaxation, meditation, taking short, slow walks and other simple methods. At times, the program can be modified with more Paramin or ICMN, for example, to help dampen the emotions until the general body chemistry improves.
- *Inflammation or tension.* Symptoms center around pain syndromes such as headaches, backaches, arthritis or perhaps high blood pressure, anxiety, colitis or allergies. A hair test may reveal a high sodium/potassium ratio and perhaps high levels of aluminum or the other *three amigos*. One may wish to add more omega-3 fatty acids.

- *Psychological withdrawal.* A very sensitive nature is at the heart of this case. Often the hair test indicates a degree of the *calcium shell*. The person is usually out of touch with his or her real needs and desires, and races around semi-conscious and confused. These cases are not easy, but they need grounding and slowing down, and a full program to balance the body.
- *Angry victims.* This is not quite the same as just an angry person. These people need to slow down and stop blaming others for their problems. They need to learn a healthful lifestyle and to assume complete responsibility for themselves. They are somewhat immature in this regard. Development can be helpful for them, provided they will put up with some healing reactions. Unfortunately, they often quit and “blame the program” for any and all discomfort and symptoms of progress that are bound to occur, at times.
- *Hopelessness.* This is all too common. A good practitioner will notice the signs, even in a seemingly cheerful client. Some have what I call *medical disease*. This is deep discouragement from talking with doctors and from trying their toxic therapies without success. Some have been told they will never be well, so why even try. A major reason for these cases is that many medical and even most holistic healing programs are simply not adequate to meet today’s health challenges. Yet many of these people do well with development if they will follow the diet, drink the right kind of water and take only the recommended supplements. Sauna therapy and coffee enemas are also most helpful.
- *Drug overload.* For deep healing, one must help these clients discontinue medications without endangering the client or angering the prescribing physicians, if possible.
- *Heart or cardiovascular disease.* Symptoms may include high blood pressure, lipid abnormalities, angina, abdominal obesity, shortness of breath, edema or others. They can do very well, but must alter their diet and get plenty of rest and sleep.
- *Incompatible relationships.* Many men and women are in relationships that simply don’t work well. Counseling by the practitioner may help, in some cases. A hair analysis may reveal a *spiritual defensive* pattern, indicating a need for change of relationship or change of attitude about it. Improving one’s energy level and mental clarity can help greatly.
- *Sexual excess.* These are usually fast oxidizing men, and a smaller number of women, whose energy is depleted from too much sex. This is not too common in America and not detectable using a hair test alone. Men may have erectile dysfunction or prostatitis, while women may have vaginal or ovarian symptoms. This is an addiction and needs addiction counseling in most cases for a complete healing to occur.
- *Addictions.* I find in these cases the clients need a lot of family or other support to help them change. I prefer if the client is seeing a counselor, for example, for this kind of help.
- *Fear cases.* These cases require more reassurance or ‘bedside manner’ as every little symptom causes intense fear. Many are fine if they can relax and learn to trust the program.
- *Colonic cases.* These are usually older people who really need colon cleansing.

The final step - designing the corrective program. Chapter 44 discusses many general aspects of designing development programs. This complex topic is not the subject of this volume because it would require another book this size. Instead, this book is designed to be used with the programs recommended by the computer at Analytical Research Laboratories.

24. HAIR ANALYSIS RETESTING

Jimmy suffered terribly from autism. He had been doing extremely well on a development program for several years, with slow and steady progress. Just when his behavior was almost completely normal, he regressed and reverted to earlier symptoms of withdrawal and hyperirritability. His parents, who had spent several years following the development program, were very disappointed and decided to quit the program. Jimmy's doctor was also upset, but knew from experience and from Jimmy's earlier retest mineral analyses how well the boy was really doing on the inside. She believed this latest flare-up was likely a retracing, and not really a setback. She accepted the parents' decision, but asked them to send her one more hair sample to see what might have occurred.

The parents agreed. The retest showed a manganese level of 2.40 mg%, or about 60 times the ideal. The level was so high it was repeated and confirmed. Such a high level of manganese is shocking, and associated with psychosis in adults. It indicated either a massive elimination of manganese, or the boy had suffered an extremely toxic manganese exposure. The latter had not occurred. The doctor told Jimmy's parents of the manganese elimination and how to handle it, mainly by ignoring the behavior and keeping Jimmy's body chemistry balanced with a light program until it passes. The extreme irritability and other odd behavior subsided after two weeks or so. Jimmy has remained well ever since with no further autistic symptoms. The retest was critical in this case to assess deep changes in body chemistry and to know how to proceed to save a child.

Hair analysis retesting is a critical aspect of development science. Interpreting retests is quite complex and involves everything from the previous chapters plus a lot more. This chapter is an introduction to the subject. Perhaps a later book will discuss it in more detail.

WHY RETEST THE HAIR EVERY THREE TO SIX MONTHS?

An analogy. Retests are needed to make 'mid-course corrections' in one's journey to health and development. A retest is akin to pulling out the maps and compass, and taking a sighting to figure out where the ship or airplane is in the sky or on the ocean, having been blown around for a few months by the forces of nature and stressors of all types. This is the essence of a hair analysis retest. Regular retests are often needed with development because the changes that take place are so subtle and at such deep levels that symptomatic shifts are not reliable guides at all as to what is going on at much deeper levels.

The reasons why retesting the hair is vital for success with development are:

- *Safety.* Retesting assures that a development program is current and appropriate to the best of our ability. Safety is always the primary concern in development science.
- *Maintaining a high level of adaptive energy.* Keeping the oxidation rate and major ratios balanced by adjusting the program periodically with retests is the key to making sure a person's adaptive energy level remains high. This is the single greatest key to success.
- *Assessing progress at deep levels.* Retesting is often the only way to assess deep changes in the body such as alterations in toxic metal levels or in key mineral ratios.
- *Evaluating old and new signs and symptoms.* With development, the body corrects symptoms in its own order. As a result, some symptoms may persist for months or longer, while others may disappear quickly. Those that persist may be from very deep levels that have not yet been uncovered. Retests are often the only way to understand how the process of uncovering layers of adaptations is unfolding, and how to assist the process.
- *Psychological importance.* A retest is often the only way to understand why certain feelings or emotions have changed. At times, for example, feelings of depression or anxiety may occur. A retest often tells us why this is so and how to correct them safely and permanently.
- *Staying with the program.* Many biochemical imbalances cause few symptoms. Retests often help clients stay with a development program by assisting them to actually see how their bodies have changed and improved at deep and subtle levels.
- *Addressing new stressors in a person's life.* A job change, a new relationship, or a death in the family, for example, may alter body chemistry significantly. Only a retest can detect the resulting subtle changes in the body chemistry, and allow us to adjust the program properly.
- *Insights about puzzling temporary symptoms.* At times, unusual symptoms may arise on development programs. One can easily become confused and frightened when this occurs. A retest will often reveal the cause, as well as how to correct the symptoms.
- *Feedback and reassurance for the practitioner regarding 1) compliance, 2) the adequacy or efficacy of the program and 3) stress factors of which the practitioner was unaware.* Retests can provide practitioners with this and other valuable information. For example, if little or no change occurs on a retest, one may need to find out if the client was really following the program correctly. In other cases, little change on a retest may indicate that the program needs to be altered in some way.
- *Addressing latent, sub-clinical or undiagnosed health conditions.* Development allows the body to address latent and undiagnosed conditions that are essentially silent. Often the only way one can even know that healing has taken place at very deep levels is with a retest that shows an improvement in a key level or ratio.
- *Assessing the need for other types of healing modalities or interventions.* At times, a retest is the only way to know that an infection or an emotional retracing is occurring that might require the help of other healing modalities to resolve it promptly.
- *Saving time, effort and money.* When a person's biochemistry has shifted, remaining on an old development program is, at best, a waste of time and money.

PRINCIPLES OF INTERPRETING RETESTS

- *Retests are about retracing.* When a person has been faithfully following a correctly designed development program, a retest after several months will reveal a deeper layer of adaptation. The task of interpreting retests is to assess the new layer of adaptation and decide

how to proceed. This idea of layered imbalances is well-known in some healing arts such as chiropractic and homeopathy. It is unfamiliar in conventional medicine, but is the central theme in the interpretation of retests in development science.

- *Deeper layers of adaptations and compensations can look similar to the ones above them, but may also look quite different.* While they sometimes follow logical sequences, at other times they appear quite random. This can be frustrating for practitioners and clients, at times, but is a definite feature of the complex process of retracing. Chapter 45 covers this in more depth. For example, one may uncover a layer of adaptation caused by an improperly healed cold or flu. The next layer down might relate to an emotional upset that occurred many years ago, and so on. The sequence of stressful events that are unwound is different for each person, but the *principle* of how to uncover and resolve them is the same for everyone. Fortunately, all that is required is to stay with the correction principles and follow the recommended program to resolve each layer as it arises.
- *Retests are often needed to break through long-held and very chronic metabolic imbalances.*
- *Changes on retests are generally beneficial, even if a retest looks worse, provided one is strictly following a development program.* A retest with even more imbalanced ratios or levels is a fairly common occurrence. Most often, it just indicates a deeper layer of adaptation that is more unbalanced in some regard. Later in this chapter are ways to tell if a more unbalanced retest is a problem, or if it should not be a concern.
- *In most cases, a complete understanding of all the changes on a retest is not possible, nor is it necessary or important.* This is related to the principle above. The important thing is to note the changes on the retest and alter the corrective program appropriately.
- *Always examine actual mineral levels on a retest, not just the bar graphs.* This is important because, at times, small changes are significant on retests and may not be reflected on the bar graphs. Here are a few examples:
 - a) A potassium level may increase from 1 to 2 mg%. This may not seem like much of a change. However, it is a 100% improvement and therefore quite significant.
 - b) The oxidation rate may appear similar visually. However, slight changes in it can supply the body with enough extra energy to cause big changes in symptoms or health status.
 - c) A rise in phosphorus from 10 to 11 mg% is excellent, but may be overlooked visually.
 - d) A toxic metal such as lead may change from 0.001 mg% to 0.01 mg%. Both are very low readings. However, this is a ten-fold or 1000% increase in the level and generally indicates an active elimination of lead has begun.

BASIC STEPS FOR RETEST INTERPRETATION

1. Repeat the steps of the initial test interpretation described in Chapters 22 and 23.

This will give you most of the interpretation of the test.

2. Check with the client as to:

- *How well were the diet, drinking water, lifestyle and detoxification protocols adhered to.*
- *All changes in symptoms and health conditions, including emotional shifts as well.*
- *Any new stress factors such as a new job or a new relationship.*
- *New medical diagnoses, changes in medications, surgeries, accidents or major injuries.*
- *Other events such as products used (herbs, vitamins, over-the-counter products or other).*

3. Check for *four lows pattern*. If four lows pattern was present on the previous test, is it still present? If so, it is a *persistent four lows*, a very common type of four lows situation. If not, it is an excellent sign that the client is moving out of the pattern, and a very good response. If four lows is present now, but was not revealed on the initial hair test, it is most likely a retracing process and not as important, although the person most likely needs a four lows program.

4. Compare the *oxidation type and rate*. Changes often reveal information about a person's energy level, illness conditions and more.

5. Compare the *sodium/potassium ratio*. Changes offer many clues about infection tendencies, glucose tolerance, tissue breakdown or catabolism, inflammation, energy level, the direction of change in the oxidation rate, and what to expect in terms of new symptoms.

6. Compare the *calcium/magnesium ratio*. It often reveals information about the diet and lifestyle changes. Recall that when the body eliminates toxic or biounavailable calcium, as often occurs when a person follows a development program, the calcium level on a retest will often rise a little, especially in relation to magnesium. In general, the elimination of metastatic calcium does not alter the calcium level by more than 20 mg%.

Also, since the calcium level may be skewed to some degree by the elimination of biounavailable calcium, *the magnesium level on a retest may be a more reliable indicator than the calcium level*. Less commonly, biounavailable magnesium may be eliminated on a retest, usually raising the magnesium level. In this case, neither reading is totally accurate as to the actual metabolic level of calcium and magnesium in the hair tissue.

7. Compare the *zinc and phosphorus levels*. These can provide clues about changes in a person's vitality level, dietary changes, digestive changes, toxic metal elimination in progress, and general zinc status. A rise in a low phosphorus, even of one mg%, is an excellent sign.

8. Compare the *toxic metal levels*. A rise in a toxic metal level usually means a larger quantity of the metal is being eliminated through the hair, and perhaps through the skin, during the time the hair grew. Even a tiny increase in a toxic metal level can be significant.

A decline means that elimination through the hair and skin has slowed. It does not mean that one is now free of that toxic metal. The body may start eliminating more of it later, or perhaps it is being eliminated via the bile or urine. Perhaps the body has just cleared one organ, or one tissue, for now. In other cases, an illness or other condition stopped the elimination of the toxic metal for a while.

If no change occurs in a toxic metal level, it does not mean that nothing is happening in regards to it. It simply means that the amount being eliminated through the hair and skin are about the same as they were during the previous three month period. Recall that hair readings are averages, so the amount being eliminated may have increased and then decreased again, for example. We cannot tell this from hair testing without repeatedly cutting very short samples close to the scalp and sending them for analysis once a month, perhaps. Even then, these would be averages as well.

9. Other minerals. *Iron, manganese and copper*, along with *selenium* and *chromium*, will often rise as they are eliminated from the body. Most people, especially slow oxidizers, have excessive amounts of biounavailable forms of these elements, including even newborns.

Selenium and chromium often vary up and down on retests. This is normal and not a cause for concern. They may rise due to replenishing them in the diet and with supplements. They can move lower because as toxic metals are eliminated, selenium, chromium, zinc and especially magnesium are retained inside the body to replace the toxic metals in various sites.

COMMON MISTAKES IN INTERPRETING RETESTS

Interpreting retests take more practice than interpreting initial tests. Common errors are:

- *Focusing too much on any changes.* It is usually impossible to understand all the subtleties of a retest. It is fine to just know that the body must unwind many layers of imbalances, during which time mineral levels and ratios will rise and fall. Most important is to adjust the development program to maintain the oxidation rate and major ratios in balance.
- *Concern with a dramatic shift in the oxidation rate.* This usually just indicates a deeper layer of adaptation, which is excellent.
- *Worry over a decline in the sodium/potassium ratio or worsening of another imbalance.* Often the earlier level or ratio was displaced upward by the presence of toxic metals or some other stress factor. A decline in the sodium/potassium ratio, or going into a four lows pattern, for example, usually just represents a deeper layer of metabolic imbalance that has surfaced so that it can be handled and resolved.
- *Worry that an already very elevated calcium rises even higher on a retest, or the calcium/magnesium ratio becomes higher on a retest.* This is most often an elimination of biounavailable or ‘metastatic calcium’, a very positive change even if the test looks worse.
- *Worry that a zinc, chromium, selenium or phosphorus level declined on a retest.* Perhaps these minerals had been displaced upwards on the previous test and now truer values are revealed. In other cases, a vital mineral may be retained somewhere in the body for a while as toxic metals are replaced. The levels will recover on subsequent tests.
- *Worry that a slow oxidation rate became slower.* As the body relaxes, and as toxic metal ‘crutches’ are removed, the oxidation rate commonly looks worse for a while.
- *Worry that a fast oxidation rate becomes even faster.* This usually occurs because the elimination of toxic substances stresses the kidneys, perhaps, or other organs in such a way as to cause sodium retention and perhaps an adrenal stress reaction.
- *Excessive worry about an abnormal blood or urine test when a client is on a development program.* This is usually not warranted, in my experience. A retest of the blood or urine in a few weeks or months will usually confirm that it was a temporary aberration.
- *Worry about a lower sodium/potassium ratio.* However, this ratio will often rise as the oxidation rate slows, and the ratio may move lower when the oxidation rate increases. This occurs because a slower oxidation rate reduces a type of stress on the body that allows the sodium/potassium ratio to rise in most cases. On a retest, an increase in the oxidation rate with the same or a higher sodium/potassium ratio is often an excellent sign in a slow oxidizer. It means that stress was reduced enough that the body can maintain the Na/K ratio with a faster oxidation rate.

UNUSUAL RETESTS

In the following situations, retests can appear to make little logical sense:

1. The patient feels better, but the test looks the same or worse. Reasons for this are:

- *The retest is not interpreted correctly.* The doctor may overlook subtle improvements.
- *The retest does not show the current changes in body chemistry.* This occurs on occasion.

- *The adaptive energy level has improved, so the client feels much better.* The retest is simply revealing the next layer of adaptation that needs clearing.

Other, less likely possibilities include:

- *The retest is correct, and the client's improvement is temporary or superficial only.*
- *The retest readings might be inaccurate due to a laboratory error.* This is extremely rare with Analytical Research Labs. However, tests from laboratories that wash the hair before performing the analysis can return erratic results.

2. The retest looks better, but the client feels the same or worse. In most cases, the client is healthier, but does not feel it for many possible reasons:

- *The client does not recall some of his original symptoms.* This is extremely common and, in fact, everyone does this to a degree. When I hear from clients that they are not feeling much different, I always look back on the original intake forms and ask about specific symptoms. Often several are completely gone, but the client has forgotten about them.
- *An increased activity or stress level obscures the improvement in one's health.* As health improves, many clients increase their activity level. This can cause a relapse of sorts. It is not a problem with the program, but with the person's reluctance to keep resting adequately to permit healing to proceed. Careful questioning may be required to assess this situation.
- *Uncovering a deeper layer of imbalance.* As a deeper layer of adaptation is unwound or uncovered, a deeper layer may cause new symptoms to appear. This can easily be mistaken for a worsening of health.
- *A healing reaction is occurring.* This is a temporary flare up of an old or a new symptom that often accompanies the healing process. It can cause any imaginable symptom. Most retracing reactions do not last long, though occasionally a chronic infection or trauma may require a month or more for complete healing.
- *Ridding the body of a latent condition.* This is a specific type of retracing in which a latent health condition the client was totally unaware of is being resolved. Fatigue, aches and other minor symptoms are common during these events. It is not a worsening of health, however.
- *Major symptoms are the same, but improvement occurs in a minor symptom.* This occurs because development corrects all symptoms in the body's own order, not necessarily the order in which a client may wish for.
- *It is too soon for the patient to notice the positive changes the retest indicates.* This may occur because hair analysis can be an early indicator of changes in body chemistry.
- *A higher level of awareness can make a person feel worse for a while.* This is a common and interesting problem. For example, those with *sympathetic dominance pattern* are often unaware of their exhausted state when they begin a development program. As they progress, they relax and may become far more conscious of how tired they are. They may feel worse, but in reality they are better off because they are now more in touch with their bodies. Similarly, those with a *low sodium/potassium ratio* or a *calcium shell* are also often out of touch, and may feel somewhat worse as their awareness increases.

Environmental awareness also increases on the program. A gentleman wrote me that he cleaned up his house of all allergens, dust and toxic chemicals. Now, he complains, he is even more sensitive to allergens. I explained that he is actually in better health and just did not realize how sensitive he is to allergens until he cleaned up his house.

Increased emotional awareness also occurs. For example, as healing progresses, one may become aware of old habits of anger or negativity. This does not feel good. However, it is often a key to healing these old mental and emotional wounds.

3. Little or no change on a retest or in a client's symptoms. This is the most frustrating situation. Fortunately, it is rare if the program is set up right and followed correctly. Possible reasons this may occur are:

- *Inadequate compliance with the program.* Some clients don't tell the whole truth when asked how well they are following the program. Also, some clients require more strict adherence to the program in order to obtain excellent results.
- *Improper test interpretation.* Remember that small changes are significant on a hair analysis.
- *The client has forgotten some of his symptoms.* This is also common.
- *Stress or 'psychological override'.* Something in the client's lifestyle, health picture or even attitude is so negative or harmful for healing that it overrode and negated most of the benefit of the development program.
- *A serious illness may be present.* This is not common, but it can occur, especially in older people. However, even when a serious condition exists, most people still show some improvement on retests, even if it is superficial.

4. All four macromineral readings are higher on a retest. This often indicates improved vitality, especially if it is accompanied by a better sodium/potassium ratio and/or improved phosphorus level.

5. All four macromineral readings are lower on a retest. This usually occurs as toxic metals are eliminated. It means that the numbers on the previous test were somewhat falsely elevated due to the presence of toxic metals such as the 'three amigos' – iron, manganese and aluminum. As these metals are removed, often all four macrominerals will be a little lower, which is fine and usually a more accurate depiction of the person's true body chemistry.

6. A complete change occurs in the oxidation rate. An elimination of toxic substances through the kidneys at times causes a shift from slow to fast oxidation. Another possible cause is an acute infection or other acute stress conditions. A fast oxidation rate often changes to slow on a retest as toxic metals or other poisons that were irritating or stimulating the adrenals and/or thyroid gland are eliminated from the body.

PATTERNS ONLY DISCERNABLE ON RETESTS

Many interesting hair mineral patterns can only be seen on retests. This is a more advanced area of research (see www.drlwilson.com). Common retest patterns include:

- *Coming alive.* All four macromineral levels increase.
- *Settling down.* All four macromineral levels go down.
- *Amigo dump.* The levels of the amigos (iron, manganese, aluminum) all go up or down.
- *Armoring up.* The levels of many toxic metals become very low, indicating retention.
- *Getting help.* The level of magnesium increases at least 30-40% on a retest.

- *Rocking pattern.* The pattern shifts from fast to slow to fast oxidation on retests.
- *Diving Deep.* A low sodium/potassium ratio becomes even lower.
- *Bowling.* A person develops more of a bowl pattern on a retest, even if it is not complete.
- *Hilling.* A person develops more of a hill pattern on a retest, even if it is not complete.
- *Elevator patterns (up or down).* The levels of macrominerals go up or down, but the ratios stay about the same. It indicates that certain issues have not been resolved.
- *Forward Flip.* A pronounced correction, such as a very low Na/K changes to high Na/K.
- *Out Of The Tunnel Backwards.* A four lows pattern on the previous test changes to fast oxidation with no four lows pattern on a retest. This is not the usual way to exit four lows, and usually indicates the exiting is temporary and the person will go back into four lows.
- *Exiting the cult or group.* A rise in the nickel level from low to high on a retest.
- *On fire.* A rise in the phosphorus level on a retest of at least 2 mg%.

QUESTIONS REGARDING RETESTS

Why do retests change? The reasons include:

- *Release of a toxic metal or toxic chemical.*
- *Resolution of a chronic infection.*
- *Change in the activity of the glands, such as the thyroid or adrenal glands.*
- *Retracing of an older biochemical pattern or layer of adaptation or compensation.*
- *Direct effect of a dietary shift, such as reducing sugar or caffeine intake.*
- *Direct effect of supplementing a nutrient such as zinc.*
- *Direct effect of a detoxification procedure such as coffee enemas or saunas.*
- *The effect of a psychological or emotional shift due to the program or to other causes or circumstances.* This might include leaving a stressful job, or even just relaxing because one feels that help is on the way for one's health problems.

Why do some people change faster than others? The reasons include:

- *Which patterns are present.* In general, four highs and fast oxidation can change fastest. Slow oxidation and four lows, especially when sympathetic dominance is present, tend to change more slowly, in part due to a lower level of energy available to cause change. High amounts of toxic metals may slow change, although this is quite variable and not too reliable.
- *Compliance.* Most people do not follow the entire program faithfully. Those that follow it best and have the best support from their families will often change much faster.
- *Other stress.* More stress tends to slow the rate of change and could stop it altogether. Stress may be of any type such as a lack of rest, an illness, a family problem or others.
- *The vitality level, temperament, maturity, age and other factors.* For example, children tend to change quickly. They have greater vitality as a rule, and are generally healthier. They also almost always have fewer distractions and traumas that get in the way.
- *The types of health conditions that are present.* Chronic illnesses tend to respond more slowly, in general, though at times, a long-standing condition clears quickly.
- *Other natural or medical therapies.* If coordinated properly, adjunctive therapies such as chiropractic, body work, sauna therapy, coffee enemas, colon hydrotherapy or acupuncture needling can greatly speed progress. Other therapies severely block some kinds of changes,

in our experience. These can include many herbs and bio-identical hormone therapy. Other methods that do not combine well with development and are never recommended include using ionic footbaths, alkaline water machines and adding other supplements.

- *Correctness of the program.* At times, the program is exactly right for the person. At other times, it is not quite as perfect and therefore a bit less effective. Often this is unavoidable and occurs to some degree with most therapies.
- *Desire and commitment.* These matter a great deal in some cases, especially if one is very ill. A strong desire to be well and a commitment to one's health can move a person faster.

When should one be concerned about a retest result? In general, if a person is following the development program faithfully, progress is occurring, even if the new test readings are unusual or seem worse. Reasons why retests may look worse than expected or do not change as quickly as one would wish are:

- *Old or ingrained metabolic patterns are hard to break, at times, and take more time.*
- *A layer of compensation has been uncovered that is very out of balance in some way.*
- *A stress factor the client may be only vaguely aware of may slow progress.* It might, for example, be an increase in one's workload or a family concern.
- *The body can only heal itself at a certain rate.* This is dependent upon its vitality or adaptive energy level, along with many subtle qualities of the body and mind.
- *Clearing some imbalances, such as nasty old infections, can be a lengthy process, at times.*

How many retests does a person need? Symptoms often begin to improve within a few weeks or even sooner. However, in terms of deeper healing, the first three years often just get rid of the bulk of many people's toxic metals. For best results, most everyone needs to remain on a development program at least 10 years or more. Reasons for this include:

- *Even children today often have many layers of imbalances to correct.* It requires months or years to uncover and resolve them. Dr. Eck once mentioned that doctors know it can take nine months to replenish just one mineral such as iron. How long, then, must it take to replenish 20 or more vital minerals and other nutrients as well?
- *The body will not absorb too much of a nutrient at once.* This is due to complex buffering systems to prevent an overload of a nutrient found in food.
- *Removing toxic metals and toxic chemicals is a delicate process.* If done too quickly, it would be extremely dangerous. Only a certain amount of any toxic metal is allowed to be released into the bloodstream, or it would fatally overload the liver and kidneys.
- *One's identity may need to change as the body chemistry recovers and shifts in a healthy direction.* This takes time for most people, and is an important reason why many people cannot get well too fast without feeling anxious, for example. Chapter 12 discusses this.
- *This program can cause the release of old and deep physical and emotional wounds that results in what I am calling mental development.* This is a lengthy process that can go on for many years, and is well worth continuing on a development program for many years.

In addition, the lifestyle part of the program should be followed for life, in most cases. The supplements will be needed less, but the healthful lifestyle, the correct drinking water and a proper diet are basic human requirements for a long and healthy life on earth.

How often should retest hair analyses be done? Dr. Eck recommended retests every three months when a person is following a complete development program. This is best to catch subtle changes in body chemistry and adjust for them. To save money and for convenience, I allow clients to have a retest hair mineral analysis in six months, providing that 1) the client's health is fairly stable, and 2) the client is not in patterns of fast oxidation, four lows or four highs. A retest in three to four months is needed in these situations. It is also helpful to retest in three months if new symptoms arise, if serious illness is present, or with an anxious client who feels the need for closer monitoring.

Closer monitoring. If detailed monitoring is needed or just desired, a retest may also be done as often as every 4-6 weeks. In such instances, be sure to cut the hair sample as close to the scalp as possible and cut the pieces of hair used for the sample as short as possible. This will give a more current reading of the hair minerals. This is usually only needed if a person is very ill, very anxious about his health, or if unusual symptoms arise that cannot be explained.

Why, at times, do the levels of sodium and/or potassium jump much higher on retests, especially if the program is designed to reduce the levels of sodium and potassium?

This usually occurs due to kidney congestion as the body releases a toxic substance. If the Na/K ratio is very low, it could even be an elimination of bioavailable potassium.

Why can the levels of sodium and/or potassium decrease on a retest, especially when they are already somewhat low, and one is on a program to increase these levels?

This is usually unwinding a pattern called a *slow on crutches*. Basically, when certain toxic metals are eliminated, the sodium and potassium levels can decrease, even though the adrenal and thyroid glands are actually in better condition. An analogy is a person who is healing, so he throws away a crutch that was keeping him walking upright. He may wobble or even fall down, at times, until he becomes used to walking without the crutch.

Why may a program be incorrect and need altering? Possible reasons include:

- *Allergic reactions.* Rarely, a person reacts to a food or a nutritional supplement. This is very different from a person feeling strange on a supplement because it is causing detoxification. Recently, a client told me he cannot drink distilled water, for example, as it causes lightheadedness. This is more likely a detoxification reaction, not an allergy.
- *A fast and deep change in body chemistry.* For example, one could shift from fast to slow oxidation or vice versa. In this case, the program is now inappropriate and could easily make a person feel worse. At times, it can be altered without a retest. However, a retest is best.
- *A new stressor or lifestyle shift has occurred.* This may render the program inaccurate. For example, the onset of an illness like cancer, or an accident or major surgery could alter body chemistry and require a new hair analysis.
- *Traumas and retesting.* All injuries, accidents, surgeries and other traumas cause a fight-or-flight reaction to a degree. This may require a change in the program, at least for a while. Some cause permanent change, such as the drugs from a long surgery, for example. Others, such as a broken leg, perhaps, may cause only short-term alterations in body chemistry.

To observe the effects of a trauma on the hair tissue, one must wait at least one month after the trauma and then cut the hair very close to the scalp and throw away hair that is longer than about 1/4 to 1/2 an inch long to observe the most recent changes in the hair

tissue. Alternatively, one can attempt to adjust a program without a retest. This might be necessary if a person develops severe symptoms after an accident, surgery or other trauma.

How can one adjust a program, if necessary, without a retest? *Adjusting a program without a retest is very inaccurate.* The body is extremely complex. This is one time when using muscle testing, for example, may help guide the practitioner. However, this is only for emergencies and temporary until a retest can be done. Here are basic guidelines:

- If the person reports feeling more anxious, irritable or unable to slow down, perhaps the oxidation rate has increased. Recommend fewer tablets of kelp, Megapan, B-complex vitamins, manganese, copper and adrenal and thyroid glandulars. If extreme, stop these products altogether.
- If the person reports feeling more tired or depressed, perhaps the oxidation rate has slowed. In this case, discontinue or reduce SBF, Stress Pack, copper and perhaps calcium, magnesium and zinc supplements and see if this helps. Zinc, however, is helpful for healing.
- If a person reports feeling more energized after a trauma, perhaps stop the entire program except for GB-3 or other digestive aids until things settle down. This may promote faster healing than staying on a full program designed to remove toxic metals and balance other ratios. After an accident or trauma, the body may prefer to concentrate on simple wound healing for a week or two, or perhaps up to a month in rare cases. More rest is also critical.

What should one do if a person reacts badly to a development program? If a program seems incorrect because symptoms are worse, the first thing to do is to discontinue the strict dietary and supplement program for a few days to see if the problem goes away. If it does, it may have been due to a reaction to a product or dietary item. The symptom may also have been due to a healing reaction caused by the program. If no change occurs upon stopping the program, the cause of the symptom may have little or nothing to do with the nutrition program.

If the symptom improves off the program, after a few days or so *slowly* restart the program with perhaps just the diet, at first. If all is well for a few days, then add one dose of supplements per day or even one product at a time, to be extra cautious, to see if you can figure out which food or supplement is causing a reaction. Many times following this procedure the symptom will not recur. In this case, most likely it was due to a healing reaction that has gone through to completion and the client can resume the full program.

If it does recur, the person may be reacting to a product or food, though it could be causing a healing reaction in a few cases. If one is reacting to a product, a substitute may be tried, or one may be able to discontinue the offending product. However, one should try the product again in a month or two, as many times reactions to products that we use are temporary and due to a leaky gut or other digestive organ imbalance that will go away in time.

Rarely, a change in body chemistry occurs within a week or so after starting a development program, and the program may need modifying immediately. This can be awkward because a retest hair analysis cannot be done this soon. With some experience, however, a practitioner may be able to make an educated guess as to how the body chemistry has shifted. This can allow the program to continue until a retest can be done, usually within six weeks.

The Retest Hair Analysis Checklist. The checklist on the following page can be helpful for interpreting retests in a systematic way so as not to forget important details.

RETEST HAIR ANALYSIS INTERPRETATION CHECKLIST

Name: _____

Date: _____

Faithfulness with the program (mark how well the program has been followed (0 – 5):

___ Diet ___ Lifestyle ___ Supplements ___ Saunas ___ Enemas ___ Meditation ___ Sleep

Persistent patterns:

___ Four lows (needs a special program) ___ Four highs (always a slow under stress)

Changes in the oxidation type and rate

Type: ___ true fast ___ slow under stress or temporary fast ___ slow ___ mixed

Rate: ___ extreme ___ moderate ___ balanced

Change: ___ much faster ___ faster ___ slower ___ much slower

Eliminating biounavailable calcium and magnesium? ___ yes ___ no

THE PAIR

Calcium ___ level better worse

Phosphorus ___ level better worse

THE TRIPLETS

Magnesium ___ level better worse

Sodium ___ level better worse

Potassium ___ level better worse

THE TWINS

Zinc ___ level better worse

Copper ___ level better worse

THE THREE AMIGOS, PLUS TWO

Iron ___ level better worse

Manganese ___ level better worse

Aluminum ___ level better worse

Chromium ___ level better worse

Selenium ___ level better worse

RATIOS:

Sodium/potassium ratio (Na/K): ___ ratio better worse

good (2.5–5) high (above 5) low (below 2.5) extreme low (below 1)

Calcium/magnesium ratio (Ca/Mg): ___ ratio better worse

good (5 - 9.5) high (9.6 - 13.5) spiritual defensiveness (Ca/Mg > 13.5)

low (below 5)

OTHER TOXIC METALS:

Lead ___ level better worse

Mercury ___ level better worse

Cadmium ___ level better worse

Arsenic ___ level better worse

Nickel ___ level better worse

OTHER IMPORTANT PATTERNS:

___ sympathetic dominance ___ bowl

___ spiritual defensiveness ___ hill

___ overwhelming stress ___ step down

___ double high ratio ___ double low ratio

___ passive-aggressive ___ step up

25.

ADAPTIVE ENERGY OR VITALITY

*Donald, age 64, is an investment manager who was diagnosed with cardiomyopathy in 2004. He was told he might live another 5 years or less, and he would suffer with breathing and walking difficulties before he died. His symptoms included ventricular tachycardia, frequent premature ventricular complexes and hypertension. He also had glaucoma, chronic asthma, coughing, frequent colds, dry skin and an impaired memory. Don's first hair analysis revealed a pattern of three low macrominerals with an extremely elevated sodium level of 53 mg%. This is called the **overwhelming stress pattern**. It was literally killing him. A high sodium level is associated with high blood pressure, edema or fluid retention, and acute stress. He also had a **double high ratio pattern**, intensifying the acute stress pattern above. Also notable was a phosphorus level of 11 mg%, a low vitality indicator. Mercury was also elevated at 0.08 mg%.*

Don's response was slow, in part because he wasn't too interested in the nutrition program and basically started it because his wife insisted he try it. However, he used a near infrared light sauna daily for 25 minutes and followed the diet and supplement program well. On his second test, the extreme stress pattern was worse, with a sodium of 100 mg%. However, his calcium/magnesium ratio had normalized. Also, very significantly, his lead level increased six times to 0.34 mg%, a significant elimination of lead. Mercury came down, while arsenic and aluminum rose as they began to be eliminated. Don started to feel better at this time.

His next retest was six months later. The lead level decreased. Mercury rose once again to 0.067 mg%, indicating another round of mercury elimination. Phosphorus improved from 10 to 12 mg%. Also very important for heart disease, Don started eliminating the 'three amigos' - aluminum, manganese and most importantly, iron. These increased dramatically on his next test in February of 2006. Iron went from a low of 0.6 mg% on the first test up to 8.2 mg%, a very high reading. He also eliminated another round of lead, which shot up to 0.296 mg%. He began eliminating other toxic metals with nickel at 0.226 mg%, mercury of 0.047 mg%, arsenic of 0.018 mg% and aluminum of 1.81 mg%. He also eliminated a toxic form of chromium, as that reading went from a low of 0.02 mg% up to 0.642 mg%. At times, bioavailable and toxic chromium is eliminated along with the three amigos, iron, manganese and aluminum.

Meanwhile, Don's extreme stress pattern persisted, but kept improving slowly. The most recent hair analysis shows a much healthier macromineral pattern and much reduced toxic metal levels. Don reported that his newest cardiac ejection fraction tests are so good he has been discharged from regular care by his doctor. He lives a normal life and continues to work full time, travel on vacations and do everything he did before becoming ill.

Vitality or adaptive energy. This chapter discusses the single most important concept in development science, that of *vitality*. Dr. Hans Selye, MD, used the term *adaptive energy* to mean the same thing. In this text, these words are used interchangeably. Dr. Paul Eck and other physicians believed that *adaptive energy is the common denominator of health*. Bernard Jensen, DC, ND, another of my mentors, stated the same idea in saying that “fatigue is the basic disease”. In other words, low adaptive energy is the beginning of all pathology in the body. An analogy is that our bodies are like modern automobiles with many ‘power’ features such as power brakes, power steering and so on. As a result, if one loses power, all of these functions cease to operate correctly.

Our bodies work similarly in that all of its functioning depends on sufficient vitality or adaptive energy. As a result, low adaptive energy results in a decline of all activity from digestion and the immune response to circulation and nervous system activity. This is why the concept of vitality is central for healing and a focus of development science.

DEFINITIONS

ADAPTIVE ENERGY. Hans Selye, MD defined *adaptive energy* as that force that permits an organism to adapt to stress. This is somewhat different from energy used to just move the body around, for example. Adaptive energy is a more profound concept having to do with the body’s ability to alter itself in response to the constant challenges that come from its internal and external environment.

VITALITY. As used in this textbook, vitality is identical to adaptive energy above. However, there is another definition that is important in relation to vitality. One may call it life force energy of vital force.

VITAL FORCE OR LIFE ENERGY. This is an energy that permeates all things, both living and inanimate objects such as minerals, rocks and others. In other cultures it is called chi, qi, prana, life force, orgone energy, nerve energy or even God. Without it, all physical life stops. It is described in physics as certain particles such as protons and electrons. However, it is more than this, as it is also very related to life. The more it can be nurtured, enhanced and conserved, the more that life thrives.

Vitality in development science. Development focuses on nurturing a person’s vitality or enhancing the life force. This is actually closer to the ancient sciences of healing than it is to post-modern medical care that basically ignores it. Development, however, uses Western terms and concepts such as systems theory to make the process of nurturing the vital force more mathematical, precise and simpler for anyone to understand.

USEFUL PRINCIPLES REGARDING VITALITY

1. One cannot necessarily feel vitality or adaptive energy. This means that having plenty of adaptive energy or adaptive energy is not a feeling, although high vitality feels very good inside. It is more about potential or capacity to live well, adapt to stress and overcome illness and other challenges. In fact, when most people “feel energized”, often it is due, at least

in part, to stimulation rather than vitality. A cup of coffee, for example, does not add much vitality to a person. Instead, it mainly stimulates the body, which reduces vitality a bit.

Reasons why those with low vitality may appear to have plenty of energy include:

- *Use of stimulants.* Coffee or other caffeinated foods or drinks, sugar, hot spices, cigarettes, various medical and illegal drugs, anger, fear, sexual drive, a need for money and even certain music all act as stimulants for millions of people around the world.
- *Overexerting oneself.* Millions also run on nervous energy. They may have a sympathetic dominance pattern on a hair test and habitually push themselves, even when exhausted.
- *Toxic metals or toxic chemicals.* Many irritate the nervous system and act as stimulants.
- *Illnesses.* Hyperthyroidism, for example, can stimulate the body, at least for a while.

2. The amount of vitality, life force or adaptive energy inside of an individual is complex and depends on many factors. However, there are two main ones. The first is what a person is born with. This goes even beyond genetics and has to do with other factors, possibly. The ‘bank account’ of vitality that one is born with slowly runs down with age. This is why most babies and children are more vital than most older adults.

The second factor is how one lives one’s life. This aspect of vitality and vital force has at least three components:

- *How well one conserves the adaptive energy one was born with.*
- *How much vital energy one is exposed to in things like sunshine, air, food, water and even certain places that have a ‘healing energy’.*
- *How well a person is able to absorb and utilize vital force that exists outside and around oneself in the air, water and food, primarily.*

3. This means that nutrition, as well as other lifestyle and dietary factors, are multifaceted. Food, for example, is needed for at least four functions:

- *‘Fuel’ and ‘replacement parts’ for the physical body.* Certain nutrients, such as vitamin C, for example, also help remove harmful chemicals such as free radicals from the body.
- *The food is needed to preserve the integrity of each cell of the body to conserve the vital force that one was born with.*
- *A source of more vital energy.*
- *A way to heal and maintain the transducing or absorbing mechanism that permits one to utilize vital force that is in sunshine, air, water, food and elsewhere.*

4. To generalize from the paragraph above, to best promote healing, one should employ any and all methods that can:

- *Provide all the fuel, building and maintenance materials such as nutrients, air, water and perhaps others.*
- *Help conserve the vitality one was born with.*
- *Offer the body more life force.*
- *Preserve and enhance the body’s ability to absorb and utilize life force.*

Natural healing methods can excel by providing building materials and more life force energy at the same time. Medical drugs and surgery, in contrast, while they may save lives, usually do not provide more than this so they are limited, relatively speaking. For this reason alone they should be used sparingly as a last resort only. In addition, they tend to cause damage to the organism as they are foreign to it in most cases.

Natural healing methods must include much more than just the diet and lifestyle. They may include a person's sleep habits, attitudes, thoughts, integrity level, physical posture, breathing habits and more. They might also include very esoteric methods such as special kinds of drinking water, various electrical machines, certain herbs, special exercises or poses, sounds or chants.

5. Balancing the forces of yin and yang both preserves the life force one was born with, and enhances one's ability to absorb much more life force energy from one's food, water, air, sunshine and elsewhere. This is why development science:

- *Focuses attention on balancing the oxidation rate and the major mineral ratios on a properly performed hair mineral analysis.*
- *Avoids focusing on any single mineral, gland, hormone or symptom too much.* The latter is called symptomatic healing and is much less profound. It may relieve symptoms, but the person's adaptive energy or vitality does not improve much, and may become worse in the process. Spiritual development usually stops, as well.
- *Avoids everything that is yin, except in the rare case that the body is too yang.* Yin foods, for example, include almost all fruit, fruit juices, dried fruit, sugars, chemicals in foods and water, and yin vegetables such as tomatoes, potatoes, eggplant, peppers, cucumbers, okra, summer squashes and perhaps a few others.
- *Suggests cooking most food, which makes it more yang.*
- *Uses more yang methods of supplementation.* This means keeping the number of supplements low, and using special care in choosing nutritional supplements.

6. An entire book could be written about how to conserve and enhance vitality. In fact, it is a science all by itself. Development incorporates some important and easy ways to preserve and enhance vitality. Perhaps a separate book will go into much more detail on this subject in the future.

ADAPTATION AND VITALITY

A very important principle is that every time the body must adapt to its environment, energy is used up. This means that adapting to cold, heat, noise, infection, lack of rest, toxic metals, improper food or other stress of any kind is not helpful for one's health. This principle can be complex to apply, in that one's favorite activities may involve some stress. The stress could be the cold weather if one likes skiing, or the time and expense involved in raising a beautiful child. So the enjoyment must be weighed against the physical stress on the body.

This is a critical principle. For example, many doctors encourage vigorous exercise for its many benefits. However, as explained elsewhere, exercise is a powerful sympathetic nervous stimulant. This means that vigorous exercise may not be helpful for overall health and vitality,

though one may feel good while one is exercising and shortly thereafter. The oxygenation and movement are important. One may be able to obtain these in a gentler way, however.

Dr. Kenneth Cooper, MD, the founder of aerobics, realized this after some 20 years of recommending heavy exercise. He found that many people doing vigorous exercise were having heart attacks or even developing cancer. He changed his mind and now recommends gentler exercise, claiming it provides all the benefits of vigorous exercise with fewer risks.

TRIPLE ASPECTS OF BIOCHEMICAL ENERGY PRODUCTION

Development is extremely interested in increasing biochemical energy production, which has at least three aspects: *the energy pathway*, *the oxidation rate* or yin-yang balance, and the *enzyme efficiency or enzyme power* of the body.

An analogy. To function correctly, a car engine must: 1) have all parts of the fuel system in working order, 2) be tuned or adjusted properly and run at the right speed and 3) have all other parts not specific to the fuel system working properly as well, such as the crankshaft, belts, hoses and more. Let us explore these concepts in more detail.

Factor 1. The fuel system or energy pathway. This consists of:

- *Eating fuel foods.* This means the right kind of food, in the proper amounts, when needed, with excellent eating habits such as chewing thoroughly and eating in a relaxed place.
- *Digestion and absorption.* This occurs in the mouth, stomach and finally in the intestines.
- *Liver action.* Here amino acids and other nutrients are often changed into other molecules.
- *Moving nutrients into the cells.* This is impaired when the oxidation rate is unbalanced, when omega-3 fatty acids are deficient and, at times, in other situations.
- *Mitochondrial conversion of sugar and fatty acids in the glycolysis and Krebs cycles.*
- *The combustion of ATP to release energy.*

All the steps must function perfectly to have optimum energy. A missing nutrient, an infection, a toxic metal or a toxic chemical can block the process from working correctly.

Factor 2. The oxidation rate. This is the equivalent of the ‘tune’ or adjustment of the engine, or running the engine at the proper speed. It is a more complex aspect of energy efficiency, though it is well understood by auto mechanics, for example. In our bodies, all enzyme systems “run” at optimum rates of temperature, pressures, nutrient levels and so forth. When the system is tuned or balanced, it produces far more energy with much less wear and tear on the body.

For example, if the body’s engine runs ‘cold’, which occurs with a slow oxidation rate, it is very similar to a cold car engine, and will not produce optimal power. Similarly, if the body is running too hot, which occurs with very fast oxidation, it is like an overheating car engine. It will not run optimally and will be damaged if it continues for any length of time.

The body enzyme systems have a “torque curve”. The paragraph above explains why our bodies have the equivalent of a *torque curve*. This is a graph of the performance of an engine as its speed or revolutions per minute increase. The curve looks like a hill or mountain with the highest efficiency somewhere in the middle of the speed range of the engine. This is

exactly how it works with our bodies as well! When the “speed”, or oxidation rate, is balanced, efficiency increases dramatically. When the oxidation rate is either very slow or very fast, power output or power efficiency decreases significantly.

Sabotaging healing. Many times, a wonderful healing method or remedy is rendered less effective or harmful because the patient has a faulty oxidation rate. Also, making slight changes in the diet, the lifestyle and the supplement program based on a properly performed hair analysis can cause dramatic healing changes. Essentially, it occurs due to much better “tuning” of the body’s fuel system to produce more energy.

Factor 3. Overall enzyme efficiency. This is related to the first and second aspects above. However, it is broader and includes all the enzyme systems of the body. All of them play a part, large or small, in energy production. Enzyme activity and efficiency is the result of how well-nourished the cells are and how many toxic metals are replacing *preferred minerals* in enzyme binding sites. The fascinating concept of preferred minerals is discussed in Chapter 8.

Restoring the energy system. Just as rebuilding an engine is an involved job, so is rebuilding the body’s energy system. This was a major focus of Dr. Eck’s research. It is analogous to replacing worn parts, removing ‘gum’ in the engine (toxic metals and toxic chemicals), and lubricating the parts with the correct water and other substances such as omega-3 fatty acids. Frequent ‘retuning’ of the engine using hair mineral analysis retesting is also helpful because each time one fixes a part of the engine it can change the adjustment of the engine, or the oxidation rate and major mineral ratios.

ASSESSING VITALITY

Vitality may be assessed in several ways. They include exotic methods such as Kirlian photography, radionic machines, or taking the acupuncture pulses. All have some merit and measure different aspects of human functioning. Hair mineral analysis can also be used, with surprising accuracy in many cases. It also offers a very objective, affordable and mathematically precise method that can even be interpreted by a computer at a distance. General vitality indicators include:

High Vitality Level:

- *No four lows pattern.*
- *Mild or moderate fast or slow oxidation, but not extreme fast or extreme slow oxidation.*
- *Calcium between about 30 and 80 mg%.*
- *Potassium between about 5 and 20 mg%.*
- *Phosphorus between about 13 and 20 mg%.*
- *The sodium/potassium ratio between 2 and about 7.*
- *The calcium/magnesium ratio between 5 and 9.5.*
- *In most cases, toxic metal levels should be low.*
- *Children or adults less than 30 years old tend to have higher vitality.*

Medium Vitality Level:

- *No four lows pattern.*
- *Fast or slow oxidation may be moderate, but are not likely to be extreme.*
- *Calcium between 20 and 100 mg%*
- *Potassium between 2 and 20 mg%.*
- *Phosphorus between 12 and 25 mg%.*
- *The sodium/potassium ratio between 2 and 12.*
- *Toxic metals not too extreme.*

Lower Vitality Level:

- *Possibly a three lows or four lows pattern.*
- *Fast or slow oxidation with an extreme rate possible.*
- *The sodium/potassium ratio may be less than 2 or greater than about 12.*
- *Phosphorus possibly less than 12 mg%.*
- *Possibly a double low ratio pattern (low sodium/potassium ratio with a low calcium/magnesium ratio as well).*
- *Possibly a step up pattern (double low ratio with fast oxidation).*
- *Possibly extreme sympathetic dominance (potassium less than 3 mg%).*
- *Any age, but more likely if one is older than 50.*
- *Possibly a deep bowl pattern.*

The more of the patterns in each of the three categories above that are present, the more likely that this is the level of a person's vitality. If patterns persist on more than one hair test, this reinforces the tendency for high, medium or low vitality. A pattern that appears only on an initial hair test is less critical.

VITALITY AND THE ADRENAL/KIDNEY SYSTEM

In Chinese terminology, the kidney/adrenal system is the "source of the chi". This is close to a concept in development that the adrenal glands are central for one's vitality. This is an important parallel between the two systems of healing and Dr. Eck may have been aware of this connection.

BUILDING VITALITY

Every aspect of development science is designed to build vitality. This is what distinguishes development from many other healing sciences. Higher vitality, then does the healing at many levels at once. Methods used to enhance vitality in development are:

- *Reducing all exposure to toxins.* By definition, a toxic substance decreases vitality.
- *Correcting the diet and eating habits.* Avoiding yin foods such as fruits, sugars and chemicals in foods, and cooking most food balances the body as well.
- *Increasing oxygenation and hydration of the body.* Deep breathing of clean, pure air is the simplest method to enhance oxygenation. Other methods include adding about 2/3 of a cup of 35% food grade hydrogen peroxide to a bath, sitting in an ozone-rich chamber, drinking

ozonated water, use of deuterium sulfate or other deuterium products, or even using medical oxygen for a few hours a day. Distilled or spring water are usually best for drinking.

- *Balancing the oxidation rate.* This has been discussed above.
- *Improving the eliminative systems of the cells and the entire body.* Coffee enemas and saunas, for example, are very helpful for this. However, the entire program is geared to improving the body's ability to eliminate all types of toxins.
- *Modifying the lifestyle.* For example, more sleep and going to bed early are most critical.
- *The Roy Masters observation-meditation exercise.* This particular exercise is very helpful. It was not a part of Dr. Eck's original program, but it can bring up and help release old traumas, relax a person and balance the emotions. It can also increase vital energy in the body.
- *Sexual restraint.* This topic is out of fashion these days, but the ancients knew that sex depletes the body, particularly for men, and today for women as well. This does not mean one should avoid intimate relationships. In fact, healthy relationships are excellent for everyone. However, most men and women will progress much faster if they will conserve their sexual fluids.

IMPLICATIONS OF THE VITALITY CONCEPT

- *Enhancing vitality will assist healing of all conditions - physical, mental and emotional.*
- *High vitality assists with all cognitive and mental skills as well.*
- *Adaptive energy or vitality is also essential for development of certain higher nerve centers in the brain.* This may be called spiritual development or the development of the whole person. This development in many more of the world's people is the only real answer to many pressing world problems.
- *The culture, morals, and even the religions of a society are powerfully influenced by the vitality level of an entire population.* While this is a large subject, examples of how this works include:
 - Those with a high vitality level are able to produce more goods and services, and tend to make better citizens, parents, businessmen, government officials and even soldiers.
 - Those with a lower energy or vitality level often have more personal problems and are more likely to turn to drug use to feel better. In contrast, those with high vitality usually will have nothing to do with stimulants, depressants and other drugs, provided their bodies are balanced properly.
 - Also, following a moral code may seem far more difficult and less important when a person's vitality level is low. This is unfortunate because moral codes are powerful ways to improve people's vitality in the long run.

It is my sincere desire that development will help thousands of people to have a higher vitality level and therefore to live healthier, happier lives. Even if just one or two aspects of development science were implemented on a large scale, they would tremendously benefit most people.

26. DIGESTIVE DISORDERS

Regina, age 26, complained of frequent gas and bloating. She also suffered from alternating diarrhea and constipation. Anxiety and irritability were also a problem most of the time. Her medical doctor diagnosed irritable bowel syndrome, and prescribed a sedative and a fiber-rich diet. This only helped a little. Her first hair mineral analysis revealed common patterns of slow oxidation, hidden copper imbalance, with mercury and aluminum toxicity. These patterns are commonly associated with the overgrowth of candida albicans and other intestinal infections, since bioavailable copper is needed to prevent yeast overgrowth. Mercury can kill some intestinal organisms, but may cause others to flourish.

On a development program, Regina felt better almost immediately. Most likely, this occurred because she was told to avoid common allergic foods such as wheat and most dairy products. Also, she greatly reduced her sugar intake, which feeds yeast organisms. She also dramatically increased her intake of steamed vegetables that provide excellent fiber and many other nutrients that help digestion and can help flush out infections in the intestines.

At the same time, her supplement program began to enhance her slow oxidation rate and balance her tissue copper. This soon reduced her anxiety and irritability, which also improved her digestion. Her supplements included GB-3, a powerful liver support product and digestive aid. It can literally digest and kill hundreds of intestinal parasites, improve digestion and increase bile flow to normalize the pH and the flora of the small and even the large intestines. Within six months, Regina's symptoms had all but vanished.

Digestive and bowel problems, especially constipation, are perhaps the most common health complaints in the modern world. While fatigue and depression cause more doctor visits, constipation, in particular, is far more prevalent, especially by the definition in this chapter. Fortunately, it is usually easy to correct with simple, natural methods.

A BRIEF LOOK AT THE DIGESTIVE SYSTEM

Chew your food for healthy digestion. Digestion begins in the mouth with chewing to mechanically break down food. In addition, enzymes in the saliva, mainly amylases, begin starch digestion in the mouth. Many food components including some vitamins and minerals, sugars and others, can be absorbed directly from the mouth into the blood stream. Chewing each bite at least two dozen times is most helpful for good health. It is also a simple and very healthful way to eat less and lose weight. It may feel odd at first, but quickly becomes a healthful habit. If a person cannot chew food thoroughly for some reason, one should blend,

puree or juice the food in a blender or food processor. This is not as good as chewing. However, it is much better than swallowing food without proper mastication.

Digestion in the stomach. From the mouth, food passes to the stomach. Here acid and pepsin digest mainly proteins, breaking them down into polypeptides and some amino acids. Starch digestion from the mouth also continues in the stomach, but less intensely.

Intestinal digestion. Food then passes to the small intestines, where bile from the liver, pancreatic enzymes, as well as other intestinal secretions, are added to the food bolus. This is where most digestion is supposed to take place. However, most people do not secrete enough liver and pancreatic enzymes, especially if they overeat, as many do. The small intestine, as well as the large intestine or colon, are also home to a myriad of bacteria that assist the digestion process.

Reasons why the intestinal flora are incorrect or weak include:

- *Toxins in the food such as food additives and natural toxins.*
- *Improper food, such as too much starch or sugars.*
- *Bacteria in the food that seed the intestines with the incorrect flora.*
- *Low digestive enzyme levels that permit certain bacteria to flourish.*
- *An imbalanced pH of the digestive tract, in particular, and of the body, in general.*
- *Impaired health may reduce the production of many chemicals in the intestinal tract that protect it from invaders.*
- *Antibiotics, and perhaps other drugs as well, kill the normal flora and may damage the liver and other digestive organs as well.*

The appendix and large intestine. The appendix is a mystery in modern medical care. It secretes enzymes that help digest meats and other foods that may require digestion in the large intestine. Unfortunately, the appendix often becomes inflamed and filled with bacteria that the body is unable to remove. This negates its positive function in most people.

The large intestine. Here the food bolus is dehydrated and the stool forms. Some minerals, vitamins and other nutrients are also absorbed here. Otherwise, the main purpose of this important organ is to make sure that waste products are removed from the body.

Reasons why the colon is one of the most diseased organs in most adults are:

- *Drinking too little water and/or the wrong kinds of water.* I recommend adults drink three to four quarts daily of either distilled or spring water. All other types of water are not as good for hydrating the body, in my experience.
- *Fatigue and stress of every kind. All stress tends to affect the digestive system.* The large intestine is particularly sensitive to stress, which tends to slow its activity.
- *Hurried lifestyles and not heeding the call to evacuate.*
- *Refined foods in the diet.* These include white sugar, white flour, white rice and other poor quality, low-fiber, highly processed foods.
- *Chemicals added to many foods, especially refined and prepared food items.*
- *Chronic bacterial, viral, fungal or parasitic infections.* These are extremely common, though most people are unaware of them. The intestinal tract is home to millions of yeasts and bacteria. The flora must be correct. Any deviation I am calling an infection, since that implies an organism that is not supposed to be there. Infections may be due to spoiled or infected food, medical drug use, a weak immune response and other reasons.

- *Medical drugs.* These often damage the delicate intestinal tract. Among the worst for the colon are antibiotics, which can destroy the natural bowel flora. This allows harmful yeasts and other pathological organisms to multiply. Other drugs slow bowel activity or irritate the sensitive mucosa of the small and large intestines. Diuretics can remove too much water from the bowel and cause constipation. Vitamin tablets with iron can irritate the intestines.
- *Other causes.* The large intestine is subject to prolapse, diverticuli, intussusceptions (a situation in some babies), and cancers of the large bowel.

DIGESTION VERSUS PUTREFACTION, ROTTING AND FERMENTATION

Good digestion is the most important single process needed for health besides rest and sleep. However, most people have very poor digestion today, even though one may have no symptoms of it at all. Instead, most of their food either rots, putrefies or ferments:

- *Digestion.* This is a process whereby food is acted upon mechanically by chewing and then chemically by acids and enzymes in the intestines. As a result, the food is broken down into simpler chemical compounds. For example, protein is broken into its amino acids. Fats are broken into fatty acids. Starches and sugars are broken down to simple sugars. Proper digestion requires good food, proper eating habits, enough digestive enzymes and other favorable conditions in the intestines.
- *Putrefaction.* This is a chemical process in which mainly proteins from food are changed by certain intestinal bacteria into very toxic chemical substances. Among them are cadaverine, indol and skatol. Toxic gases such as sulfur dioxide are also produced. A little putrefaction is okay, but more is very harmful and toxic for the body. Causes for it include eating too much protein at one time, insufficient chewing, deficiencies of digestive enzymes such as trypsin and chymotrypsin, improper pH of the intestinal tract, and the presence of incorrect flora in the intestinal tract.
- *Rotting.* This is similar to putrefaction. However, it occurs in the absence of putrefying bacteria. This is what happens if you leave an egg or a piece of meat in the open air for a few days. The distinction between rotting and putrefying is not great and the words are often used interchangeably. However, technically they are not the same.
- *Fermentation.* This is a chemical process in which certain yeast organisms change sugars into methane, alcohol, vinegar, acetaldehyde and other very toxic substances. This is extremely common, especially in slow oxidizers. *Candida albicans* is the most common fermenting organism, but many other yeasts may be involved as well. One way to tell if fermentation or putrefaction is occurring in your body is the smell of your stool or intestinal gas. Fermentation smells mild, often like horse manure, for example. Putrefaction produces a more foul-smelling stool.

ZINC AND DIGESTIVE DISORDERS

Zinc deficiency is a primary cause of many digestive problems. Reasons for this include:

- *Zinc is needed for digestive enzyme production in the liver, pancreas and elsewhere.*
- *Fast-growing tissues such as the intestines depend heavily upon zinc because it is a co-factor or is required for enzymes such as RNA transferase and others involved in protein synthesis.*

- *Insulin production, secretion and effectiveness depend upon zinc.*
 - *The appetat mechanism that regulates hunger depends upon the zinc-copper balance.*
 - *The senses of taste and smell, along with all the senses, depend upon zinc and copper.*
 - *The health of the autonomic nervous system is heavily dependent upon zinc as well.*
- Digestion is a parasympathetic activity that requires a perfectly functioning autonomic nervous system for ideal digestive activity.

As a result, low zinc is associated with irritable bowel syndrome, ulcers, enteritis, colitis, anorexia, bulimia, loss of sense of taste and smell, and many other intestinal disorders.

Zinc deficient worldwide. Chapter 15 discusses all the critical reasons why zinc is so low in the population today. Most children are also born deficient in zinc because their mothers' bodies are very low in zinc.

HAIR ANALYSIS PATTERNS RELATED TO DIGESTIVE DISORDERS:

- *Zinc and copper imbalances.* These are discussed in Chapter 15.
- *Phosphorus less than about 13 mg%.* This indicates improper protein synthesis, which often has to do with zinc deficiency, the diet, intestinal infections and/or improper digestion.
- *A sodium/potassium ratio less than about 2.* This can indicate reduced vitality, reduced digestive enzyme production, and low hydrochloric acid in the stomach.
- *Four lows pattern.* This is often associated with digestive weakness, often due to overuse of the sympathetic nervous system and chronic and often severe fatigue.
- *Very slow oxidation.* This is often associated with digestive system weakness, hypoglycemia, cravings for sweets and starches, and constipation.
- *Sympathetic dominance pattern.* The sympathetic nervous system powerfully inhibits proper digestion and elimination.
- *Elevated lead, cadmium, mercury, aluminum, arsenic or other toxic metals.* These metals often impair digestion and elimination.
- *Very fast oxidation.* This is often associated with high levels of gastric acidity and conditions such as gastritis, and possibly ulcers and diarrhea.

CONSTIPATION

Definition. I will use the following definition of constipation, though some may disagree. Constipation is present whenever:

- *The solid matter of the colon (usually filling at least half of it or about a foot long) does not naturally empty each and every day.* It does not matter if a person has one large bowel movement daily or several smaller ones, as long as the colon empties well – OR,
- *The bowel transit time is greater than about 24 hours.* This means that the time between eating a meal and the passage of its residue from the body is more than 24 hours. This can be tested easily by swallowing about 6 charcoal tablets from the drug store or having a meal of raw or cooked red beets. Note how long it takes for the black color of charcoal or the red color of beets to appear in the stool. Reasons for constipation include:

- *Sluggish bile secretion (bile has a laxative effect).*
- *Poor muscle tone interfering with normal peristalsis.*
- *Slow oxidation, causing low energy levels and many other problems.*
- *Low digestive enzymes and/or incorrect intestinal flora.*
- *Intestinal infections that are very common such as candida albicans and many others.*
- *Psychological factors such as stress, fear and anxiety.*
- *Other bowel pathologies such as tumors.*
- *Temporary constipation occurs at times during development programs as certain toxins or infections are eliminated. Extra GB-3 or magnesium usually handles it easily.*

Conquering constipation. The simplest way to overcome most cases of constipation is to drink at least three quarts of warm water or mild teas daily. This method is widely overlooked. Other simple methods include more rest and sleep, more exercise in some cases, deep breathing, or a series of colonic irrigations or coffee enemas to tone the bowel and remove debris from the intestines. Among the various products available to help with constipation, the following are preferable in the order listed below:

1. *Products containing ox bile, black radish and dehydrocholic acid, such as GB-3 by Endomet Labs.* These can relieve constipation and tone the bowel by enhancing bile flow and liver activity. These products also kill harmful bacteria, yeasts and some parasites in the intestines. They can cause diarrhea, at first, for this reason, so begin gently with only one tablet per day and work up to 2 or 3 per meal.
2. *Magnesium supplements help some cases of constipation.* Magnesium increases water in the intestines, which softens the stool. Modern diets are often deficient in magnesium. Magnesium glycinate may not cause the stool to become as loose, probably because it is better absorbed. Preferably use a magnesium oxide, citrate or chelate.
3. *Soluble and insoluble fiber helps a few people.* Eating plenty of steamed vegetables will provide enough fiber, but sometimes more is helpful.
4. *Glycerin suppositories work, but are slightly toxic and do not address causes of constipation.*
5. *Herbal laxatives can be used temporarily.* Many can be habit-forming, however, such as senna leaves and cascara sagrada. These act by irritating the bowel, which is not ideal. However, they are effective when needed. Some other herbs such as slippery elm and others seem to nourish and tone the bowel. Dr. Eck did not use many herbs because of toxic effects and because of their variable quality.
6. *Enemas are a short-term solution, but are not harmful when part of a development program.* Coffee enemas, for example, will eventually tone the bowel if used correctly.

DIARRHEA

Diarrhea can be defined as either 1) liquid or very runny stools at any time or 2) a bowel transit time of less than about 8 hours. A simple case of diarrhea that passes within a day or two is usually not a serious concern. It may be due to stress, anxiety, food poisoning, use of some drugs or perhaps an infection. On development programs it occurs at times, usually due to the elimination of a toxic substance from the body.

Diarrhea that persists more than three days can become a serious health condition due to dehydration and loss of nutrients in the liquid stool. Water can be easily replaced. Nutrients lost due to diarrhea take much longer to replenish. Therefore, always take steps to stop any diarrhea that continues for more than two or three days.

Oxidation types and diarrhea. Dr. Eck found that fast oxidizers have a greater tendency toward diarrhea than slow oxidizers. Reasons for this are:

- *Generally faster metabolism.*
- *Lower calcium and magnesium levels tend to cause more powerful peristaltic action.*
- *More fats and oils in the diet, along with more active liver function, cause more bile secretion.* Bile tends to be laxative.

Correction of diarrhea. A single bout of diarrhea may just be clearing out a bad meal or a toxic condition in the bowel. This requires no treatment in most instances other than rest and drinking extra water. If it continues for more than a day or two, be sure to do the following:

- *Drink a lot more spring or distilled water only.* Reverse osmosis water does not adequately hydrate the body and can cause dehydration in a few cases. Dehydration is a potentially life-threatening condition, especially in babies and young children.

If possible, do not drink water with meals, as this further impairs digestion by diluting the gastric juices and digestive enzymes. In general, drink an hour or more after meals and up to 10 minutes before a meal. Also, do not substitute juices, coffee or most other beverages.

- *Resting and fasting for a day or two is excellent.* This rests the intestines completely.
- *Eat simply.* Avoid all raw, spicy or irritating foods. Also avoid all food additives, stimulants such as caffeine and others, as these can aggravate diarrhea.
- *Check any recent medications you are using.* Diarrhea could be a side effect of a drug or a drug combination. Drug side effects can begin at any time, even months after you started using the drug. Also check your nutritional supplements, and preferably stop all these while you have diarrhea. Products containing magnesium, bile acids or certain herbs, for example, can cause diarrhea in sensitive people.
- *To kill infections in the intestines, excellent remedies that are safe include a quality colloidal silver, bee propolis, garlic capsules (9/day at 500 mg each) or perhaps grapefruit seed extract.* Follow directions for these products and do not use for more than five days, as a general rule.
- *Other temporary remedies.* Charcoal tablets and bentonite clay in tablets or powder are quite safe in the short term and may reduce diarrhea caused by food poisoning. Herbal remedies and even over-the-counter drugs for diarrhea are usually safe if they are used as directed and taken only occasionally. Coffee enemas or colonic irrigation can also be helpful at times. They work by removing the offending toxin, infection, or other cause of diarrhea.

Further care for diarrhea. Diarrhea that continues more than a few days or recurs often requires more attention. A parasitic or other infection may be present. If it does not heal with colloidal silver, for example, one may require a stool analysis or, preferably, a bowel contents analysis to look for parasitic organisms. In most cases, a development program will eventually get rid of most, but perhaps not all parasites. Be sure to seek help if you are not sure how to use a remedy or if diarrhea continues for more than a few days.

WEIGHT LOSS AND WEIGHT GAIN

Most people who follow development programs will obtain a desirable weight very easily. At times, some weight gain or loss occurs during the nutrition program and this, too, balances out eventually. Most weight loss programs are dangerous from the perspective of development. They either starve the body, leading to worse problems later, or they unbalance the body with strange diets, too much exercise and the use of various drugs, herbs and other products that do not address basic causes of weight gain and weight normalization.

The reasons for weight gain are fairly simple, in my experience. I will divide them into four categories. These are 1) too much food, 2) improper diet, 3) emotional reasons or 4) metabolic imbalances such as fast or slow oxidation, or rarely other reasons such as a pituitary tumor. Let us consider each of these in more detail.

1. Too much food. Some people eat due to nervousness, or simply out of habit. Others eat to “keep up their strength”, which means that food stimulates them in some way. Others need to eat more because the food they eat is of poor quality and contains few nutrients.

Ways to eat less include maintaining good, regular eating habits, limiting snacking, keeping only the right foods in the house and avoiding situations where you tend to overeat. Anyone can learn better eating discipline if one wishes. Other hints are to chew thoroughly, substitute a glass of water or tea for food, and going to bed early instead of eating in the evening.

2. An improper diet. The most common dietary mistake today is eating too many carbohydrates such as breads, pizza, donuts, rolls, potato chips, pasta, soda pop, milk, French fries, Mexican food, chocolate, cakes and candy. In my experience, if one changes the diet to mainly steamed vegetables with some fresh meats and some whole milk dairy, weight is usually not a problem. Whole milk products are better in most cases than skim or low-fat milks. The fat in the milk fills one up so one eats less of other foods. Fat is not the culprit in most cases of overweight. Other hints are to avoid all wheat products of any kind, and avoid all gluten-containing foods in most cases. These are oats, barley, rye and wheat or spelt. To lose more weight, skip all the grains for a few months.

Use any gimmicks you wish to stay away from refined carbohydrates, in particular, such as only eating in East Indian, Thai, Chinese and perhaps a few other restaurants that you know serve a variety of vegetable dishes. Avoid Mexican, Italian, and American type restaurants that serve breads, beans, and a lot of starch. Though coffee is not recommended, a cup or two is usually better than soda or milk shakes, for example. Also avoid all artificial sweeteners as they tend to cause weight gain, perhaps by fooling the body into thinking a sweet meal has arrived. This may cause the body to secrete insulin, contributing to fat deposition.

3. Mental/emotional reasons for weight gain. Development can help with some of the following interesting causes for weight gain or weight loss:

- *Mental tension.* This impairs nutrition and often leads to unconscious overeating.
- *Hiding behind one's weight.* Some men, as well as many women today may use excess weight to avoid the attentions of the opposite sex or for other psychological reasons.

- *Hidden anger.* Some who are overweight are angry or perhaps fearful underneath. However, emotional imbalances also keep some people very thin. It appears to depend how the person reacts to the emotion, in terms of eating habits and other subtle factors.
- *Temperament.* Some people prefer to sit on the couch and watch television and drink beer. They tend to gain more weight than those who prefer running marathons, for example.
- *Eating for emotional reasons.* Food is an emotional reward for some people, or it may have other meanings in some cases. This can cause many types of eating disorders and cravings.

SLOW OXIDATION AND WEIGHT GAIN. Slow oxidizers tend to gain weight lower on the body, causing a tendency for a more pear-shaped body. Reasons for weight gain among slow oxidizers include:

- *Fatigue or depression.* Some eat to “keep up their strength” or to feel better emotionally.
- *Hypoglycemia and diabetes.* Many slow oxidizers have a tendency for chronic low blood sugar due to weak adrenal glands. This results in sweet and other food cravings.
- *Low digestive enzyme production.* This may impair appetite, but also reduces nutrient absorption and thus can cause more hunger for nutrients, a very common situation. This is just one reason why everyone needs a powerful digestive enzyme today.
- *Insulin excess in metabolic syndrome or syndrome X.* Insulin may be elevated in these cases because the body is trying to force more sugar into the cells to increase energy production. A side effect of high insulin is the conversion of sugars into fat.
- *Impaired circulation.* This can make it more difficult to break down fat deposits in the body.
- *Food sensitivities.* These are common and often cause bloating, gas and water retention.
- *Inflammation.* Inflamed tissues swell up with substances the body finds toxic, causing a watery appearance and weight gain. Most of those in slow oxidation have significant inflammation in the body, though they may have few other symptoms. Causes of inflammation in slow oxidizers include copper excess, zinc deficiency, omega-3 fatty acid deficiency, leaky gut syndrome, metal toxicity and possibly other causes.
- *Yin condition of the body.* Yin means expanded. This can express itself as weight gain.
- *Appetite problems.* All slow oxidizers have a degree of copper toxicity and zinc deficiency. This affects the appetite control mechanism of the body in different ways. It may result in anorexia, but it often causes odd cravings and a lack of a consistent appetite control.
- *Water retention due to impaired kidney activity.* This may occur in some who are more ill.
- *Metal and chemical toxicity.* The body can retain some fluid to dilute certain toxins.
- *Healing reactions.* During development programs a few slow oxidizers gain some weight temporarily. Possible reasons are a further slowing of the oxidation rate for various reasons, or it can be the result of toxin elimination from the body.

FAST OXIDATION AND WEIGHT GAIN. One might think fast oxidizers would all be thin because they burn their food quickly. However, many are overweight. True fast oxidizers tend to gain weight around the belly and upper body, while the legs and arms may remain more slender. This is the ‘apple-shaped’ body type. The ‘gut’ can become enlarged and the women often have larger breasts. Combinations of both the pear-shaped and apple-shaped body types are also common.

Fast oxidizers can gain weight for some of the same reasons as slow oxidizers, such as the desire to obtain more nutrients, intestinal infections, or food allergies to wheat, beef and perhaps other foods. Other reasons for weight gain in fast oxidizers include:

- *High cortisol and a Cushinoid body type.* Fast oxidizers have more active adrenals, which causes higher levels of cortisol. Their bodies can take on a mild form of Cushing's syndrome, a disorder of the adrenal glands. High cortisol causes fat deposition mainly in the abdomen and occasionally in the shoulders, where the fat pad is called a 'buffalo hump'.
- *Metabolic Syndrome or Syndrome X.* This is common in many adult fast oxidizers.
- *Higher insulin.* Fast oxidizers, as a rule, have somewhat higher insulin levels than slow oxidizers. Insulin tends to convert sugars to fat. Overeating on carbohydrates further stimulates insulin production, making the problem worse.
- *Water retention.* Fast oxidizers often have a waterlogged appearance and consistency of the skin. This may be due to high tissue sodium that causes some water retention.
- *Overeating on carbohydrates.* Starches and sugars, in part, break down to water.

Combinations of fast and slow oxidizer causes for weight gain and weight loss are common. This occurs due to complex adaptations and compensations to various physical, biochemical and emotional stressors taking place over many years time.

Losing weight with development. Gentle rebalancing of the body chemistry with periodic retesting of the hair will unwind the causes of obesity. As this occurs, extra weight generally melts away with little effort. There is no need for special diets, surgeries, medical drugs, bio-identical hormones or other methods that are much less safe and often extremely toxic or harmful in other ways. The only problem with this method is it requires some discipline.

Fast and slow oxidizers can reduce all grains, fruit and fruit juices to a minimum to lose more weight. Fast oxidizers must eat more fats and oils, however, or they will become extremely hungry. Both types should eat mainly steamed vegetables, some meats, eggs, perhaps whole milk dairy that is not pasteurized or homogenized.

Fast oxidizers can have some lamb and beef, though most beef is not as healthful a food today due to hybridization. Other good quality fats and oils include butter, especially raw butter, and cold-pressed hempseed, olive, and flaxseed oils. The tropical oils such as palm and coconut may be eaten once in a while. These, however, are too yin to eat in large quantities. A quality cod liver oil is also excellent, especially for children. Lard is not acceptable, as it may contain parasites even when well cooked.

Reasons why a lower-carbohydrate diet works well for most fast oxidizers include:

- *Eating carbohydrates increases insulin secretion, which causes the conversion of sugar to fat.* This is probably the main reason why a lower-carbohydrate diet works so well for them.
- *Quality fats and oils provide calories and help balance a fast oxidation rate.*
- *According to Dr. George Watson, in fast oxidizers the Krebs or carboxylic acid cycle is more efficient in comparison with the glycolysis cycle.* The Krebs cycle is where fats are converted to energy. Hence they may feel better on more fats and fewer carbohydrates.
- *Eating carbohydrates depletes more zinc, which causes one's sodium level to rise further.* This, in turn, may increase stress and worsen water retention.

Weight loss ideas to avoid. For safety reason, I would strictly avoid heavy exercise regimens, drugs such as amphetamines, surgery for weight loss, and all strange or deficient diets such as vegetarianism, raw foods, vegan diets or diets low in protein and cooked vegetables.

OTHER COMMON DIGESTIVE DISORDERS

Nausea. Many factors can cause this common symptom, from parasitic infections, enzyme deficiencies, constipation or food poisoning to eating too much, a hiatal hernia or even a toxic metal elimination through the liver. Emotional distress is another common cause. Rarer causes are tumors or other intestinal blockages. Removing the cause is the key to alleviating the symptom in most all cases.

Celiac disease or gluten intolerance. This is common and possible in anyone with gas, bloating, unexplained iron deficiency or anemia, failure to thrive, diarrhea, epilepsy, chronic hepatitis, osteopenia, osteoporosis, perhaps weight loss, mild depression and perhaps brain fog or constipation. Less common symptoms may include arthritis, asthma, schizophrenia, psoriasis, loss or early graying of hair, skin diseases, heart disease and blood abnormalities. The causes include stress, nutritional imbalances, and that wheat, in particular, is a very unhealthy food due to hybridization, even the best organic whole wheat in any form at all.

Ways to test for gluten allergy include tissue transglutaminase antibody (TTG) and antiendomysium antibodies. Another alternative is to simply eliminate all gluten-containing foods for at least a week and note how one feels. Many people feel significantly better. Eliminating all gluten for several months, in conjunction with a development program, may allow the intestines to heal enough that one can tolerate some oats, rye or barley.

Anorexia nervosa and bulimia. Anorexia means no appetite, which causes some people to skip meals. In severe cases, this can lead to death. While a distorted body image, for example, can be the main cause, nutritional factors also often play a role in the causation of anorexia and bulimia. Reducing copper, for example, can be extremely helpful to end this serious condition.

Anorexia nervosa usually occurs in young women, aged 11 to about 24. It may occur more in middle and upper class people. The young women feel pressured to look a certain way to be popular and to be accepted by their peers or even their parents. Anorexia nervosa is also a “disease of civilization”. This means it is rarely found in undeveloped nations.

Bulimia, or vomiting up one’s meal after eating, is often part of the anorexia syndrome in young women. It is more severe in that it is a more self-destructive act to throw up one’s good food after eating it. Symptoms that may alert a parent or doctor to anorexia may include:

- *Loss of the menstrual period.*
- *Denial of hunger and/or dieting with relish when not overweight.*
- *Frequent weighing and/or claiming to feel fat when not overweight.*
- *Preoccupation with food, grocery shopping and cooking, though will not eat.*
- *Excessive exercising.*
- *Abuse of laxatives.*
- *Leaving the dinner table and going immediately to the bathroom.*
- *Staying in the bathroom with the shower running for a long time.*

- *Hiding garbage bags and other containers of vomit.*
- *Feeling bloated and nauseated after eating small amounts of food.*
- *Bingeing, followed by dieting or fasting.*
- *Chewing food, then spitting it out.*
- *Social isolation or intolerance of oneself and/or others.*
- *Feelings of insecurity and a distorted body image.*
- *Feeling spacey or detached from reality.*

Help for anorexia nervosa. Most young women with this disorder are extremely copper toxic and zinc deficient. This, alone, distorts their appetite mechanism and may affect their thinking as well. Erratic eating habits then further distort their body chemistry. This sets up a vicious cycle whereby zinc becomes more deficient, leading to a reduced appetite and sense of taste and smell, and more copper in the body. This, in turn worsens the anorexia problem. This cycle can end in death unless something is done to break the cycle. Along with counseling and other measures, correcting the nutritional balance can be extremely helpful for these young women, who are often lovely and simply unhappy and confused.

Gastric esophageal reflux disease or GERD. This very common disorder of the esophagus and stomach was formerly often called heartburn. It is usually easily remedied without drugs. The drugs used for it unfortunately reduce acid secretion in the stomach. This worsens digestion, even if the drugs relieve the symptoms of GERD. *Barrett's esophagus* is a more aggravated version of GERD in which the esophagus becomes extremely irritated. The same healing principles apply to Barrett's esophagus and it, too, can be helped in almost all cases with a complete development program. In addition to a program, simple, safe ways to correct these common ailments are:

- *Avoid wheat and reduce other grains such as oats, rye, millet and even rice or corn for a time.* This is often helpful. Change to a diet of mainly steamed or lightly cooked vegetables. Also reduce hot spices, acidic foods, juices and fruits, and do not drink liquids with meals.
- *Avoid eating when upset, anxious or in a hurry.* Rest at least five minutes before meals. Sit quietly for meals and chew each bite at least 20 times before swallowing. Remain at the table at least 10 minutes after the meal before getting up. You may also leave the table, but sit quietly or lie down for at least 10 minutes before resuming your activities.
- *Take digestive enzymes such as GB-3 from Endomet Lab before or with the meal, not afterwards.* After the meal it could sit on top of the stomach and cause irritation.
- *For symptoms of heartburn, use aloe vera juice or gel.* A good brand is George's. You may need this for a time until symptoms clear up.
- *Reduce a hiatal hernia.* This can be done quite easily in most cases by first lying on one's back with the legs bent and the knees up. Then place three fingers from each hand in the hollow just below the sternum or breast bone. Breathe in deeply. As you begin to exhale, push your fingers into your chest and then move your entire hands down toward your feet, and perhaps a little to the left. Repeat this five times or until you feel a little better. You may have to repeat the exercise a number of times, as this problem can recur, especially if one strains at the stool. Over time, however, it should improve if you are following a complete healing program.

Intestinal infections or enteritis. The small and large intestines are extremely prone to infection. Some are the result of tainted foods, especially raw food grown in other nations with lower standards of sanitation. Also, the intestines are a warm, moist environment that favors the growth of most bacteria, fungal and other types of infections.

Development helps greatly to eliminate all intestinal infections. The main methods are to enhance general vitality, improve the diet, reduce consumption of raw foods, and to add digestive enzymes such as GB-3 that can actually digest many parasitic and other harmful microorganisms in the intestines. Coffee enemas and using a near infrared light sauna are also extremely helpful in some cases. Old intestinal infections can flare up as they heal during development.

Leaky gut syndrome. The end result of intestinal infections, nutrient deficiencies and defective intestinal flora is often a condition in which peptides and other partially digested food components, along with bacteria, viruses or other foreign matter pass too easily through a damaged intestinal wall and enter the bloodstream. This is called a “leaky gut”. It causes food reactions, general allergies, fatigue, aches and pains, and it overwhelms the liver, kidneys and other organs that must remove toxic substances from the body. It also sets the stage for many other intestinal and systemic diseases.

Causes of leaky gut syndrome. The most common causes are eating too much or eating the wrong foods. The worst offenders include all sweets and sugars, white flour products and artificial or chemical-laden food. Improper eating habits can also play a role such as eating on the run or not chewing sufficiently. Stress, fatigue, the presence of toxic metals, intestinal infections and nutritional depletion are other important causes. Correction of this conditions and others involving the intestines is not difficult using development, but can take a number of years to complete. The program will also take care of most parasites and other intestinal problems, in time. This is why we rarely need to recommend parasite cleanses with herbs or other somewhat toxic remedies. Such methods, if not needed, will slow one’s progress on a development regimen by introducing slightly toxic metals or chemicals into the body.

Candida albicans infection. This is epidemic today, although it is just one of many common intestinal infections. Dr. Eck found that an important cause is a *copper imbalance*. Copper is one of the body’s primary yeast killing substances. When copper is biounavailable, the body cannot easily get rid of yeasts adequately. Other reasons for the problem include:

- *Sugars in the diet, including fruits, juices and all types of sweets.*
- *In some cases, too many starches, especially potatoes and grains.* These are converted to sugars in the intestines, where they may nourish the yeast organisms.
- *The use of antibiotics, birth control pills, or steroids such as Prednisone, are other important causes, even if one only used them in the past.* Other medical drugs may also be problematic.
- *Low vitality for any reason might affect the body’s level of alkalinity and the copper balance.*
- *Mercury toxicity is thought to be related to infections such as yeasts in some instances.*

How to correct candida albicans. Development will correct chronic intestinal candida, along with other infections, usually without a need for specific anti-infection remedies. For best results, definitely avoid all wheat, perhaps all gluten-containing foods, all sugars, most fruit and

all juices. An exception, however, is that 10-12 ounces of carrot or green juice daily are so nutritious that they are worth drinking, if possible, unless one is extremely sugar-sensitive.

If an anti-candida remedy is needed for a short time, natural substances are usually best as they are the least toxic and often work very well. Avoid drugs of all kinds as they are rarely needed. I use GB-3, garlic, caprylic acid, or possibly grapefruit seed extract if the others are not effective enough. Usually, however, no anti-candida remedy is needed, even in stubborn cases, if one balances the body chemistry properly.

Gastritis. This is inflammation and pain in the stomach. Its causes include stress, emotional tension, improper diet or eating habits, fatigue, or rarely a medical drug or other cause. It usually goes away quickly with a development program that includes stress reduction and learning emotional control.

Colitis, Crohn's disease, and diverticulitis. The large intestine is prone to many common disorders. Most of these clear up quickly with development. Colitis is a general term. Crohn's disease is a form of colitis that is serious, at times, though it often responds easily to development programs. Diverticulosis and diverticulitis have to do with pockets of infection in the colon that are often slower to heal, as they must be cleaned out slowly as the colon is restored to health. Enemas and colonic irrigation are wonderful for these conditions, just as they are very helpful for almost all bowel and liver disorders.

Irritable bowel syndrome or IBS. This is a very common symptom that often accompanies food intolerances, candida albicans infections and general stress. It usually resolves easily and quickly as the diet and lifestyle are corrected.

Gastric and duodenal ulcers. This digestive disorder is often due to the use of drugs that irritate the stomach. The most common are non-steroidal anti-inflammatory drugs or NSAIDS. Other causes are uncontrolled emotions, general inflammation, improper diet or too many hot spices, for example, low zinc, high copper, improper stomach acid and a few other minor causes.

Post-modern medical care suggests that ulcers are due to a bacterial infection with H. Pylori. However, I believe this is just an opportunist organism that takes advantage of a weakened body. The drugs used for H. Pylori can be worse than the infection. Instead, correcting the causes above usually takes care of the ulcer quickly. A safe symptomatic remedy is aloe vera juice or gel if one needs a quick remedy for a while until complete healing occurs.

Hemorrhoids. Mild cases of hemorrhoids clear up easily with development. Causes of this common condition include:

- *Stress, straining at the stool or general weakness of this area.*
- *Liver congestion can contribute to the backup of blood in the hemorrhoidal veins that go from the rectum area to the liver.*
- *Imbalances that weaken the veins such as copper toxicity, zinc deficiency or imbalances involving vitamin C, for example.*
- *Pressure on the veins from a pregnancy or perhaps from a sedentary lifestyle.*

When the causes are removed, the problem usually disappears promptly. In very severe cases in which surgery is recommended, I am told that galvanic current treatments work very well with much less trauma to the area. Some doctors are also using a type of laser surgery for this problem that may be better than conventional surgery.

Cirrhosis of the liver. Cirrhosis may be due to alcoholism, or rarely is due to other causes such as chronic hepatitis or chemical poisoning. A hair analysis in these cases will often reveal a low zinc level, a lowered sodium/potassium ratio and often elevated levels of toxic metals, especially cadmium, lead or mercury. Cirrhosis can respond excellently to development in most cases, provided the liver is not damaged beyond repair.

Colic and other problems of babies. Babies should not have bowel problems when breastfed and when they do not receive vaccines and drugs. However, many babies and young children are born with nutritional imbalances and become colicky, allergic to foods or even severely constipated. Rarely, the cause is an intestinal malformation that must be corrected with surgery. However, far more common are the following problems:

- *Not enough breastfeeding, or problems with the mother's milk.* Most mothers today are in poor health, according to their hair mineral analyses. Sadly, the milk quality is not good enough for some children.
- *Some babies need more distilled or spring water.* This can even occur in a baby who is breastfeeding. Many mothers are somewhat dehydrated because they do not drink enough water, or they drink a type of water that does not hydrate them well enough. As a result, their milk is not supplying enough water.
- *If a baby is constipated, eliminate all sweets, fruit and juices and try adding a little magnesium or Epsom salts, perhaps, to some water or milk for the baby.* This usually works very quickly. Many mothers are low in magnesium and their milk may be low in it as well.
- *Sugars of any kind, can cause yeast infections in children that can contribute to constipation, colic and many other problems.* Common foods that cause problems are too much fruit, fruit juices and the worst is soda pop or other sweetened foods or drinks.
- *Vaccination.* This practice introduces many toxic substances into the baby, not just the organism being vaccinated against. Please read more about vaccination horrors on my website, www.drlwilson.com and other excellent websites critical of vaccination.
- *Iron in baby formulas.* Most store-bought formula is nutritionally deficient and unbalanced. One of the worst additives is additional iron. It irritates a baby's delicate digestive system, and can cause internal bleeding and constipation. Most babies are born with a two or three year supply of iron from their mothers. Breast milk contains little to no iron and babies do just fine on it.
- *Drug use, especially antibiotics.* These are often prescribed for ear infections, colds and minor intestinal upset. They damage the normal bowel flora and cause liver toxicity in susceptible babies. Chapter 45 discusses natural remedies for infections.
- *Stress, other infections, tainted food and other causes may also cause colic and other digestive problems in babies and infants.* Babies and infants do extremely well on very mild development programs.

27.

GENERAL ENDOCRINE AND ADRENAL GLANDULAR ASSESSMENT

Joe, age 25, complained of relentless fatigue, even after a good night's sleep. He was also cold most of the time, and his skin was dry with some acne. He craved sweets and salty food, and often felt apathetic and depressed. Constipation had begun to occur as well. He tried taking anti-depressants and other mood-altering drugs with little effect. I explained that he had the classic signs of adrenal exhaustion or 'burnout'. This involves nutritional depletion of the adrenal glands, and usually nutritional depletion of the entire sympathetic nervous system that controls the adrenals to some degree.

A hair analysis revealed very low levels of sodium and potassium and a low sodium/potassium ratio. Joe also had elevated levels of mercury and aluminum. His test also indicated hidden copper toxicity. This may have caused some of his emotional and other symptoms. On a complete development program, improvement was slow for the first four months. One reason is that Joe did not want to give up his exercise workouts several afternoons a week. I convinced him to wait until his adrenal glands were stronger before doing more exercise. Otherwise, it is like trying to walk on a broken leg before it heals. Stopping the vigorous exercise program allowed Joe to rest much more. His fatigue and other symptoms began to improve quickly. Within a year he felt better than he had felt for the past several years.

BASIC HORMONE EVALUATION

Assessing and balancing the endocrine system of the body is a complex task, consisting of more than just correcting the levels of the circulating hormones. To explore this more fully, let us review the basic steps required for hormones to act on the body tissues. They include:

- *Adequate hormone quality.* The strength or quality of the hormones must be adequate. Nutrient deficiencies, mainly, can impair the quality of the hormones the body produces. This is not discussed much in medical care, but I believe it is a factor in hormone problems.
- *Adequate hormone secretion.* The hormones must then be secreted in sufficient quantity. This is what most serum, urine and saliva tests measure.
- *Hormone activation.* Some hormones must be altered or converted to a different form to become more active in the body. For example, thyroid hormone (T4) is converted to T3, a more active form.
- *Adequate absorption into the cells.* The hormones must be absorbed from the blood into the cells. Faulty cell permeability, either too low or excessively high, can affect this step.

- *Adequate cellular effects or activity.* Once inside the body cells, the hormone must do its job correctly. A deficiency of a key nutrient or the presence of toxins, for example, can prevent this from occurring.
- *Correct feedback to tell the glands how the hormone is acting at a cellular level.* This is another critical link in the chain of events that is needed to keep the hormones balanced. This link is often disturbed when practitioners prescribe hormone replacement therapies.
- *Subtle factors such as stress, fatigue, emotional imbalances and even one's posture may affect the hormone balance in the body.* For example, extreme neck tension, which occurs in some people, can impact the thyroid gland by interfering with its nerve supply.

Possible hormone problems include:

- *The quality of the hormones produced is defective.* For example, this might occur in the thyroid when toxic mercury, fluoride, chlorides, bromides or copper are present in excess.
- *The quality is okay, but not enough hormone is secreted.*
- *Enough high quality hormones are produced and secreted, but they are not activated or metabolized properly before they reach the cells.* For example, female hormones such as progesterone may be transformed into too much testosterone.
- *Enough high quality hormones are produced, secreted, and metabolized properly.* However, problems with cell permeability impair their absorption into the cells. Alternatively, the cells may be too permeable, so that hormone uptake into the cells is too rapid. This may occur in fast oxidation, for example.
- *The correct amount of high-quality hormones reach the cells, but something interferes with their utilization or activity within the cells.* A common example is *insulin resistance*. In this situation, the body secretes plenty of insulin, but the intended result on the blood sugar level does not occur. This may be due to a chromium or perhaps a manganese deficiency. Alternatively, the hormones could have an exaggerated cellular effect due to some type of biochemical imbalance in the cells.
- *The proper quality and quantity of hormones are secreted, absorbed into the cells, and utilized within each cell.* However, a problem occurs with the feedback system that is supposed to inform the thyroid or adrenal glands, for example, how much more of each hormone to continue making and secreting.

Needless to say, hormone regulation is extremely complex. For this reason, development programs always seek to uncover and remove all the nutritional and other imbalances that can cause hormone dysregulation at every step of the process above. Dr. Eck learned that by measuring the final step in hormone activity, *the cellular response*, hair testing offers a unique tool for endocrine evaluation. All the steps are important, but the final cellular response to a hormone is clinically the most important. In other words, the most important aspect of hormones is whether they are balancing the body correctly, not the circulating hormone levels or even TSH, FSH or other pituitary hormone levels. A hair analysis is one of the few ways to measure this aspect of hormonal regulation.

Problems with bio-identical hormone therapy. Dr. Eck did not like hormone replacement therapy. It is very rarely needed if one balances the body chemistry. Serious problems with most hormone replacement therapies include:

- *Toxicity.* All hormones are slightly toxic. For example, a recent article by Jonathan Wright, MD, ND pointed out that replacement testosterone can be converted to estrogens in the body. This does not sound safe at all. Many doctors who prescribe hormones are unaware of the dangers of hormone therapy.
- *An unnatural therapy.* Unlike minerals and vitamins, hormones are not designed to be taken in from outside the body. Their levels vary moment to moment. This cannot be easily duplicated with replacement hormones. It does not matter if the hormones are “natural” or bio-identical.
- *Unbalances the body and wastes time.* Remineralizing, detoxifying and restoring a person’s body needs to begin immediately and takes a few years, at least. Hormone replacement might revive a dying person, but in most other cases it just upsets the body chemistry even more and retards deeper healing.
- *Costly.* Hormone testing is at least a few hundred dollars for each test. Yet hormones must be monitored frequently. Otherwise the therapy is even more dangerous.
- *A more superficial therapy.* ‘Balancing the hormones’ is difficult, and, in fact, impossible in a body filled with toxic metals and deficient in dozens of nutrients. It is just a palliative or symptomatic therapy, not a totally functional one.

The only times Dr. Eck suggested natural hormone replacement were:

- *If the hormone-secreting gland has been almost totally destroyed.*
- *If symptoms are extreme.* In these cases, which are very rare, replacement hormones should ideally be used only for a short time until deeper correction can be made. Most symptoms, however, such as hot flashes, PMS, hypothyroidism and adrenal exhaustion can be handled with diet and nutrient therapy until deeper correction can be made.
- *A few people over the age of 65 or 70 are too ill or debilitated to respond well to a development program.* In these cases, hormones will help them, particularly thyroid hormones and testosterone, in my experience. However, one never knows if a person can respond to development until it is tried first.

Why hair tests may not confirm serum, urine and saliva hormone evaluations. Most endocrine tests only measure the levels of circulating hormones. A few tests, such as ACTH and TSH, measure feedback from the pituitary. A hair mineral test tends to assess *the cellular effect or cellular response to hormone activity*. This is why hair readings may not agree with serum, urine or saliva hormone tests. Understanding this deeply will avoid a great deal of confusion. It can also help a practitioner understand problems that occur with traditional medical endocrine assessment and hormone therapies.

Confusing situations in which a hair test does not agree with other hormone level evaluations. Hormone evaluation using hair mineral analysis is a complex area that is beyond the scope of this book. However, thyroid evaluation is such an important one to learn about that the following chapter is devoted to it. The chapter following is devoted to blood sugar regulation, insulin and diabetes. Other hormone-related topics may be discussed in articles available at www.drwilson.com.

ADRENAL GLANDULAR ASSESSMENT

This is one of the most important sections of this book. The adrenal glands were one of Dr. Eck's primary areas of emphasis. I remember wondering, at first, why he paid so much attention to these two small glands that sit on top of the kidneys. Post-modern medical care hardly mentions them except for rare adrenal tumors and Addison's disease, another rare condition that I have never seen in almost 30 years of active nutritional practice. Dr. Eck taught the truth, however, that the condition of the adrenal glands is the single most important clue to understanding the stress response system of the body.

Functions of the adrenal glands. The adrenals secrete at least a dozen hormones including adrenalin or epinephrine, noradrenaline or norepinephrine, DHEA, pregnelone, progesterone, estrone, estriol, estradiol, cortisol, cortisone, corticosterone, testosterone and others that may not have even been discovered yet. The adrenals also help regulate many systems of the body such as blood sugar, blood salts, blood pressure and the autonomic nervous system.

ADRENAL INDICATORS ON A HAIR MINERAL ANALYSIS

A properly performed and correctly interpreted hair analysis can indicate many things about the condition and performance of a person's adrenal glands:

- *The sodium level = adrenal strength.* A good level is between about 20 and 40. When the level is low, adrenal effect at a cellular level is reduced. When the sodium level is elevated, adrenal activity or effect tends to be excessive. However, on early hair analyses, toxic metals or other factors can elevate the reading falsely. A number of retests during a development program may be necessary to remove these toxins and produce a more accurate assessment of adrenal glandular activity.
- *The sodium/potassium ratio = adrenal potential, charge or direction.* A good ratio is about 2 to 7. Dr. Eck, felt that a ratio below 2.5 indicates adrenal weakness and exhaustion. A ratio greater than 6 or 7 indicates acute stress on the adrenals and often an alarm response in progress.
- *The sodium/magnesium ratio = adrenal strength, joy and an aspect of the oxidation rate.* Dr. Eck called this the *adrenal ratio*. An ideal ratio is about 4.17. A higher ratio is associated with excessive adrenal activity at a cellular level, while a low ratio is associated with adrenal weakness and adrenal burnout.
- *The oxidation rate = sympathetic/parasympathetic balance and the stage of stress.* A faster oxidation is associated with increased adrenal effect at the cellular level. A sluggish oxidation rate is associated with reduced cellular adrenal effect.
- *Double high ratio or double low ratio patterns = more extreme adrenal stress.* These patterns are present when both the sodium/potassium and the calcium/magnesium ratios are either high or low. These are more extreme stress patterns. Double high is more acute, while double low is a very chronic adrenal stress pattern.
- *Four highs = a second wind.* When calcium, magnesium, sodium and potassium are elevated, it indicates a secondary adrenal stress reaction, also called a secondary alarm reaction. This is a very high stress level, in most cases, that is like a "second wind". It may be due to the presence of toxic metals, nutrient deficiencies or perhaps due to lifestyle or other stress. I

believe one can have several layers of these secondary alarm responses, in some cases, and they all need to be resolved for deep healing of the adrenal glands.

- *Sympathetic dominance = lifestyle stress.* This indicates a lifestyle or personality tendency to overuse the adrenal glands when they are, in fact, exhausted. A person with this pattern tends to keep himself in a fight-or-flight situation when he should be resting more. This pattern requires changes in one's attitudes and lifestyle in most cases in order to rest and rebuild the adrenals, along with the rest of the body.
- *Four lows = spinning one's wheels.* A person with this pattern is also overusing the adrenals. However, the situation is worse than the other patterns and more like spinning one's wheels in a ditch and getting nowhere. Dr. Eck eventually figured out how to resolve this pattern, in most cases, by "forcing the adrenals to rest" with certain supplements. Oddly, the worst thing to do when a person is in this pattern is to support the adrenals with vitamins, minerals, hormones or anything else other than loads of rest and a healthful diet and lifestyle.
- *Combinations of the above tell us even more about adrenal activity.*
- *Cortisol reversal.* Sympathetic dominance, four lows or perhaps others of the more extreme adrenal imbalance patterns may indicate **cortisol reversal**. This is when the cortisol level is low in the morning and increases as the day goes on, peaking at midnight in many cases. This is the opposite of the ideal adrenal secretion pattern. It indicates an autonomic imbalance.

RATIONALE FOR THE ABOVE INDICATORS

- *Sodium is associated with mineralocorticoid secretion.* All four adrenal indicators listed above involve sodium, which is regulated primarily by aldosterone, an adrenal hormone. The word mineralocorticoid just means that aldosterone regulates minerals. Greater adrenal effect tends to cause higher tissue sodium levels.
- *Potassium associated more with glucocorticoid secretion.* Potassium in the hair provides a very rough indication of glucocorticoid hormone effect. Cortisol, corticosterone and cortisone are the main glucocorticoid hormones. Glucocorticoids cause the conversion of glycogen, fatty acids and amino acids to glucose, which raises the blood glucose level. Glucocorticoids have many other functions as well, such as reducing inflammation. Hair must not be washed at the laboratory to obtain valid sodium and potassium readings.
- *Inflammatory hormones, adrenaline and noradrenaline, are secreted in the earliest stages of a stress reaction.* They act fast and cause most of the alarm reaction. Once they have done their job, they are removed from the blood quickly, as they are quite toxic.
- *Aldosterone is a medium stage stress hormone that is also pro-inflammatory.* It, too, promotes an alarm reaction, but not nearly as intensely as does adrenaline.
- *Cortisol, cortisone and corticosterone are later stage, anti-inflammatory adrenal hormones.* In the exhaustion stage of stress, the body is already quite inflamed due to the presence of toxic substances and a deficiency of the anti-inflammatory minerals such as calcium, magnesium and zinc. To cope with stress at this late stage, cortisol reduces inflammation, but at the expense of the general state of health. This is why steroid drugs, which contain synthetic cortisone, are among the most toxic of all medical drugs. They reduce inflammation in an attempt to stave off death, but have potent side effects, such as causing the disintegration of the bones and weakening all the tissues of the body.
- *The sodium/potassium ratio roughly measures the relationship between the pro-inflammatory and anti-inflammatory hormones or between aldosterone and cortisol.* A high sodium/-

potassium ratio is associated with more inflammation. A low ratio is associated with less inflammation, as well as more tissue breakdown due, in part, to excess cortisol. A low ratio is also a state of electrical discharge and some failure of the sodium pump mechanism that maintains the cell's electro-chemical potential.

- *The sodium/magnesium ratio is an overall adrenal stress indicator.* Dr. Eck found that ratios of antagonistic minerals often give a truer picture of glandular activity than just a single mineral reading.

OTHER ADRENAL PARAMETERS

The following concepts may seem rather esoteric. However, they provide even more insight into how a person's adrenals are functioning:

- *Cell permeability to adrenal and other hormones, in general.* This is most closely associated with the oxidation rate. A faster rate indicates greater cell permeability. A sluggish oxidation rate is associated with reduced cell permeability.
- *Glandular strength.* This is most closely associated with the sodium level. A higher level indicates better adrenal strength, while a low level indicates weak adrenal strength.
- *Glandular reserves.* Sympathetic dominance pattern or a very slow oxidation rate indicate low adrenal reserves. Also, some fast oxidizers may have low adrenal reserves, according to Dr. Eck, because they are functioning at peak adrenal capacity much of the time.
- *Glandular responsiveness.* This has to do with how quickly and effectively the adrenals can respond to stress. It is somewhat different than the other measures and more associated with the sodium/potassium ratio and perhaps the sodium/magnesium ratio.
- *The coordination between the adrenals and the rest of the body and mind.* This may be impaired if a four lows pattern is present, and also possibly with a four highs pattern or a very fast or very slow oxidation rate.

A problem with hair mineral testing. At times, a hair test will not accurately reveal all the adrenal stress indicators above. The reason for this is that more superficial layers of adaptations and compensations must first be cleared in order to reveal underlying adrenal exhaustion or other patterns related to the adrenal glands. This can require several or even many hair analysis retests, even when a person is following a development program. Adrenal gland indicators on hair tests are discussed in more detail in Chapters 22 and 43.

ADRENAL EXHAUSTION OR “BURNOUT”

Adrenal exhaustion or burnout was a favorite topic of Dr. Eck's. It is extremely common, even among children today. Some doctors call it *adrenal insufficiency, adrenal hypofunction, adrenal underactivity, adrenal shutdown* or just *burnout*. All these terms are used interchangeably in this text.

Symptoms of adrenal burnout. These include unrelenting fatigue and often low blood pressure, low blood sugar, sweet cravings, aches and pains and perhaps recurrent or chronic infections. Emotional symptoms are often prominent and include apathy, depression, despair, low self-esteem, irritability, compulsiveness, and often negative thoughts and sometimes hopelessness.

Addison's disease. Adrenal problems may be mild to extreme. The most extreme cases are diagnosed as *Addison's disease*, which is described as total adrenal failure that requires cortisone therapy. I have never seen a case of Addison's disease, so I don't know how different it is from severe adrenal burnout. I suspect it is similar in all ways to adrenal exhaustion and that it might respond well to development programs. One must be careful not to use the term Addison's disease loosely, however, as it can frighten clients into taking hormones and thinking they will never be well again.

A physical, not a psychological condition. When most people go to the doctor complaining of fatigue and depression, most leave with a prescription for an anti-depressant. This only gets in the way of healing the adrenals at the deepest level because it adds more toxins to the body and does not address the real causes of adrenal imbalances, which are mainly nutritional, structural and, at times, related to one's attitudes and emotions. In fact, development will correct adrenal exhaustion fully in almost all cases, though time is required to rebuild the nervous system and the body chemistry.

Fatigue versus burnout. Burnout is a deeper derangement of the body's energy system than fatigue. Fatigue goes away with a short vacation and a lot of rest. Burnout will not go away by taking a vacation, though symptoms might improve temporarily.

Living on stimulation. Those with adrenal burnout often end up needing stimulants to function at all. Some use coffee or sugar. Others stay angry and use their own rage to function because they have little real energy. Others stimulate themselves with loud music, medical or other drugs, pornography, excessive sexual activity, worry, scary movies or focusing on the news to stimulate the adrenals into activity. Otherwise they would just feel like sleeping all day.

Adrenal exhaustion affects all aspects of life. It affects schoolwork, family issues, relationships, job performance, one's intelligence, awareness and more. Adrenal exhaustion is also an early stage of disease that often leads to all the more serious diseases of our time such as diabetes, especially, but also heart disease, cancer, arthritis, depression and most others.

Burnout patterns on a hair analysis. Hair analysis is very helpful to assess adrenal exhaustion. Almost a dozen hair mineral patterns may relate to burnout. Sometimes a person has a **double burnout**, **triple burnout** or even a **quadruple burnout hair test**, based on how many of the following patterns are present on a hair test:

- | | |
|---------------------------------------|----------------------------------|
| 1. Low sodium and/or potassium level. | 6. Double low ratio pattern. |
| 2. Low sodium/potassium ratio. | 7. Four lows pattern. |
| 3. Slow oxidation rate. | 8. Four highs pattern. |
| 4. Very high calcium level. | 9. Step up or step down pattern. |
| 5. Low phosphorus level. | |

Correction notes for adrenal burnout. While this book does not focus much on correction, the following are very important to keep in mind for full correction of adrenal burnout:

- *The need for minerals.* Most people with adrenal burnout need supplementary kelp and sea salt. Also, they may need a product from Endomet Laboratories called Veg-Easy. These are dried vegetables in a capsule. One could use a 'green superfood' powder, instead. However, these often become rancid or lose their potency, which happens less with capsules.

- *Avoid all vigorous exercise.* For the fastest progress, limit vigorous exercise and all physical and even mental exertion.
- *Avoid fasting, all bio-identical hormone therapy, cleansing diets, most herbs and all medical drugs, as much as possible.* These may all provide temporary relief, but eventually slow or stop progress altogether. This has been our experience working with thousands of people.
- *The need for saunas and coffee enemas.* These are often essential for full recovery. There is simply too much toxicity to overcome if one does not do these simple home therapies on a daily basis. They are not particularly time consuming and well worth the time and effort they require.
- *Other testing.* While it may sound odd, I find that other tests for hormones, adrenal stress, vitamins, amino acids and many other factors are not usually needed. The most important other tests that are sometimes needed in very complicated cases are food allergy testing and/or stool testing for various parasites and intestinal infections. These can really hinder progress in a few cases, though not usually if a person does the development program correctly and eats well.
- *Other therapies.* The most important adjunctive therapy, in my experience, is chiropractic manipulation, which is essential in some cases. Others that may be excellent are foot reflexology, bodywork such as Rolfing, emotional release therapies, meditation with the Roy Masters exercise and perhaps other balancing and relaxing therapies.

The blessing of burnout. Many people become quite upset to learn they have adrenal exhaustion. However, it can be a great blessing that helps one transition quickly from a more superficial, stressful and frantic ‘go-go’ life to a calmer, and eventually much more satisfying one. Adrenal burnout may therefore be viewed as a very positive lifestyle transition condition.

THE ADRENALS AND THE KIDNEYS – A CLOSE RELATIONSHIP

The adrenal glands and the kidneys are located next to each other in the body. In Chinese medicine, they are also associated together, but not in Western medicine. This is a research topic that could yield valuable insights into adrenal and kidney problems. Both organs:

- *Secrete hormones.* Kidney hormones include erythropoietin (EPO), calcitriol (1,25[OH]₂ Vitamin D₃), rennin, angiotensin, prostaglandins and kininogen.
- *Are affected by stress and by emotional imbalances such as fear and worry.*
- *Regulate fluid and water balance, and blood sugar.*

28.

THYROID GLAND ASSESSMENT

Paula, age 38, is a nurse who eats fairly well, but works long hours. She suffered from muscle pain, sweet cravings, irritability before meals, heart palpitations, skipped heart beats, poor circulation, post-nasal drip, terrible and unrelenting fatigue, cold extremities, frequent urination and worst of all, premenstrual syndrome. Before her period she became irritable, paranoid, anxious and depressed. Her mind would race and she would develop brain fog, obsessive/compulsive tendencies, panic attacks and had trouble sleeping. Paula's first hair analysis revealed:

- *A very slow oxidation rate with a calcium level of 197 mg%. This is a **calcium shell pattern** seen in very sensitive and often spiritually-oriented individuals, most of whom are women.*
- *Excellent sodium/potassium and calcium/magnesium ratios.*
- *An aluminum level of 1.35 mg%, about 10 times the ideal level.*
- *Copper was normal as is common, but Paula's high hair calcium level indicated hidden copper toxicity. Copper imbalance is usually involved in premenstrual syndrome.*

Three months later, Paula wrote "It's incredible to have some energy again". Most of her symptoms were noticeably improved. She still has some premenstrual discomfort and some muscle pain, but much less than before. Paula's first retest indicated a calcium level of 650 mg% and a magnesium level of 95 mg%. Meanwhile, her sodium and potassium levels decreased. This means her oxidation rate slowed greatly. It is unusual for a person to feel a lot more energy when the oxidation rate slows so dramatically. Possible reasons for this are:

- *"Slow on crutches". This means that the initial hair analysis was skewed by the presence of toxic metals or even chemicals in the body that was making it look better than it really was, and also making Paula ill. Removing the crutches caused her oxidation rate to slow down dramatically, but she is actually healthier than before.*
- *An elimination of some biounavailable or so-called 'metastatic' calcium and magnesium through the hair raised the calcium and magnesium levels on the second test.*
- *More emotional stability. It is possible that Paula's much higher calcium level afforded her a more secure psychological environment that is needed by some people, at least until their health improves sufficiently that this type of protection is no longer required.*

Case #2. *Robert, age 66, was a neighbor. He consulted me because he kept up a busy lawn maintenance business, but was exhausted. His first hair analysis indicated a fast oxidation*

rate and very high levels of lead and cadmium. This was probably due to smoking, and perhaps from working on a farm earlier in his life. Farmers are often exposed to toxic metals while maintaining farm machinery and from handling feeds and pesticides. Many seeds, for example, are treated with mercury to kill mold and fungus.

I warned Robert that his development program would, at first, reduce his oxidation rate and he might feel more tired as a result. This was needed to balance his oxidation rate and improve his energy efficiency, which would powerfully assist to remove his toxic metals. This is similar to slowing down one's rate of pedaling a bicycle when pedaling too fast. It may seem more relaxed, but it generates more energy because energy is used more efficiently. It is also analogous to shifting the gears of a car so that the motor is not racing too fast, but is operating at its optimum RPMs or horsepower. It may seem like there is less activity because the motor makes less noise, but it actually runs more efficiently in the right gear, at the right RPM.

*On his first retest, Robert began to eliminate some of his lead and cadmium. He was still a fast oxidizer, however, so I had him continue with a similar development supplement program. A few weeks later, Robert stopped by to say he was quitting the program. His words were "Don't slow me down. I don't like it". Instead, he went to another doctor who tested his thyroid hormones. They were low, so the doctor prescribed a natural thyroid hormone replacement. **Fast oxidizers can have low serum hormones because of excessively permeable cell membranes that cause the hormones to be taken up by the cells rather quickly.***

I warned Robert that taking thyroid hormones would further enhance his already excessive oxidation rate and would throw his body dangerously out of balance. However, he had more energy on the hormones, so he continued to take them. A year later, I ran into Robert's wife. She informed me that Robert had recently developed kidney cancer and died quickly. In my experience, this can easily happen when one unbalances the body chemistry.

The ability to accurately evaluate the *cellular response or cellular effect* of the thyroid gland is one of the most important benefits of development science. A properly performed test also offers many clues as to the cause of most common thyroid ailments.

Thyroid anatomy and physiology. The thyroid gland sits in the front of the throat and is shaped like a large butterfly. The main hormone produced in the thyroid gland is called tetraiodothyronine, T4 or thyroxine. This hormone requires manganese, iodine, selenium and other vitamins and minerals for its production. Deficiencies of any of these, or their replacement by toxic metals such as copper or mercury, may impair thyroid hormone production.

After thyroxine or T4 is secreted, it circulates in the blood. The liver and other sites convert some of it to a far more active hormone called triiodothyroine or T3. The conversion process also requires many nutrients, especially selenium. Defects in the conversion process may also cause thyroid difficulties.

T3 and T4 must be absorbed into the cells and utilized there. This depends on the correct level of cell permeability, an aspect of body chemistry involving the oxidation rate, factors such as omega-3 fatty acids, and others as well. Another hormone called reverse T3 will sometimes rise too high, interfering with the activity of T3. According to some excellent doctors, this is simple to remedy by reducing the level of toxic metals in the body such as mercury.

Parathyroid hormones. In the same area as the thyroid gland are the parathyroid glands. These are small and produce parathyroid hormone or PTH, and perhaps other hormones as well. The action of parathyroid hormone tends to be opposite of that of the thyroid hormone.

Functions of the thyroid gland. The major function is to speed up the metabolic rate. The thyroid is activated by the sympathetic nervous system, especially during times of stress. Its hormones help prepare the body to fight or run away. It is thus a critical part of the stress response system of the body, along with the adrenal glands. Dr. Eck used to say the *adrenals supply the fuel for the engine* (by raising the blood sugar). *The thyroid provides the spark to ignite the fuel.* Both are needed in the right amounts to produce abundant vitality in the body.

Esoteric or psychological role of the thyroid gland. The thyroid gland is associated with the quality of will or effort. It is most closely associated with the fifth chakra or energy center of the body, which happens to be located right where the thyroid gland is also found. Imbalances related to the will, or expressing oneself, are possible emotionally-related causes of thyroid disease. For example, women suffer from much more thyroid problems than men. One reason may be that women's self-expression is more often suppressed in childhood. Very willful people also often develop thyroid abnormalities.

THYROID ASSESSMENT

Most doctors assess the thyroid using serum hormone levels, and perhaps antibody tests or other tests, on occasion. However, just assessing serum hormone levels is inadequate because this does not tend to address:

- *How well the hormones pass from the blood into the cells.* This depends on the integrity and permeability of the cell membranes. Slow oxidizers, for example, often have reduced cell permeability, while many fast oxidizers have excessive cell permeability.
- *How powerfully the hormones act on the cells, once they enter the cells.* The mitochondria, for example, are our cellular energy factories. They require many nutrients. If even one of these is deficient or if toxic metals are excessive, thyroid hormones may not be able to do their job of increasing the metabolic rate at the cellular level.

Dr. Barnes' improvement. The problems above led Dr. Broda Barnes, MD and others to use body temperature testing instead of, or in addition to, hormone testing for thyroid evaluation. Testing the temperature is often more accurate. However, this test is still general because many factors can affect body temperature. They include fatigue, poor circulation, some illnesses and sluggish adrenal activity. A good use of the test is in young children. They should be in fast oxidation and should have a higher body temperature. Other than in these cases, I do not consider the temperature test a reliable enough measure of thyroid gland activity.

HAIR ANALYSIS ASSESSMENT

Dr. Eck evaluated many ways to assess thyroid activity with a hair analysis. He eventually decided upon the **calcium/potassium ratio**. This, however, is a *cellular effect or cellular response to thyroid hormone*. It is quite different from serum hormone testing because it is a measure of the *end result of the hormones activity upon the cells*. For example, if circulating thyroid hormones cannot enter the cells very well, they will have a reduced cellular effect, even if the level of the serum hormones is perfect. The reasons Dr. Eck chose the calcium/potassium ratio for thyroid assessment are:

- *The thyroid regulates calcium.* A well-known effect of thyroid hormones is to *reduce* the calcium level in the blood, and eventually in the tissues. Other factors also influence the calcium level, but thyroid hormone activity is one of the most important ones. An *elevated* hair calcium level is associated with a *sluggish thyroid cellular effect*. A *low* hair calcium level is associated with an *excessive thyroid cellular effect*. For instance, classic symptoms of hyperthyroidism include tetany or muscle spasms, muscle tightness and muscle cramps. These are due to a low serum calcium level.
- *Potassium may sensitize the tissues to thyroid hormone.* Dr. Eck discussed this, though I do not have a reference for it. It means a *low* hair potassium is associated with a *diminished thyroid effect*, while an *elevated* hair potassium may be associated with an *excessive thyroid effect*. Combining the calcium and potassium levels provides the rationale for using the calcium/potassium ratio as the main indicator of thyroid effect or thyroid response.

Dr. Eck decided on an ideal calcium/potassium ratio in an adult of about 4:1. A ratio greater than 4:1 is associated with a reduced thyroid effect at the cellular level. A ratio less than 4:1 is associated with an excessive thyroid effect. *To obtain valid calcium, sodium and potassium readings, hair must not be washed at the laboratory.* In my experience, symptoms of low or excessive thyroid-related activity often match the calcium/potassium ratio well. It is often as accurate a predictor or more so of thyroid symptoms than serum hormone levels or the temperature test.

However, hair testing is also imperfect. At times, the calcium/potassium ratio is normal when thyroid symptoms are present. This occurs because hair analysis measures the entire body as a whole system. It is not specifically a “thyroid test”. So it reflects aberrations in the whole body system better than it reflects any specific organ or gland.

More specifically, early hair tests are often influenced by layers of adaptations or compensations that distort the hair mineral levels and ratios. When one is on a development program, months or perhaps longer may be needed to remove these adaptations in order to obtain a more accurate thyroid assessment. This can be viewed as a disadvantage of hair mineral testing. However, it is usually not a problem because development science is not really about thyroid or any other glandular testing.

It is concerned first and foremost with strengthening and rebalancing the entire body. This can be done, even if the thyroid aspect is not absolutely accurate. This is a critical notion, in fact, that with development one never focuses on the thyroid gland, or any other gland, for that matter. Instead, one always focuses on the overall balance of the body. When this approach is used, all the glands slowly move back toward balance, even if it takes a year or more to accomplish. This book is divided into chapters on the thyroid, the adrenals and other body systems for convenience, but the focus must always be on balancing the entire body chemistry.

CAUSES FOR THYROID IMBALANCES

- *Low available manganese, iodine and selenium.* For example, selenium is required for two steps in thyroid hormone utilization. It is involved in the deiodination reaction in the thyroid and in the conversion of T4 to T3 in the tissues.
- *High levels of toxic metals,* especially copper, mercury and the iodine antagonists.
- *Stress.* This upsets the autonomic nervous system, of which the thyroid is an important part.
- *Inhibited expression.* This can affect the fifth chakra located in the area of the thyroid glands.

- *Impaired cell permeability.* This can inhibit the passage of thyroid hormones into the cells.
- *Tension in the neck may be a factor in some cases.*
- *Pituitary imbalances.* The pituitary gland produces thyroid-stimulating hormone or TSH. Most of the factors above can damage the pituitary gland as well as the thyroid gland.

HYPOTHYROIDISM

Hair analysis is excellent for identifying low *thyroid effect or a reduced cellular response to thyroid hormone*. The hair test is often a far more sensitive test than serum or other hormone tests. This means it will detect subtle thyroid imbalances, and, at times, much sooner than other assessments. The hair test also offers clues as to the cause. Development often works excellently to correct low thyroid conditions, including Hashimoto's disease and other variants.

Correction notes. In addition to a complete development program, adding extra kelp may be essential. It is a source of many trace minerals, but particularly iodine. Iodine antagonists in the environment have caused widespread iodine deficiencies, even in those who consume traditional sources of iodine. However, I prefer not to supplement with pure iodine products as I believe they are less safe and less natural than kelp, a natural food. I add several 600 mg capsules to all slow oxidizer programs. If it makes a person jittery, then reduce the amount. Kelp not only provides iodine, but greatly speeds the remineralization of the entire body. Chapter 4 discusses kelp in detail. Do not use other sea vegetables or fish, however, as sources of iodine. They are all toxic with mercury. Kelp is also higher in mercury, but contains more alginates and other chemicals that bind toxic metals in the intestines and remove them.

Thyroid hormone replacement. I have never recommended thyroid replacement hormones, even in severe cases of hypothyroidism, of which I have had many. The hormones do not appear to be needed in most cases, and can definitely slow or even stop progress on a development program. They are dangerous if one is in fast oxidation as they further imbalance the oxidation rate and general body chemistry. The only situations in which I find that natural thyroid hormone replacement is needed are if the thyroid had been surgically or otherwise destroyed, or if one cannot follow a development program for some reason.

Myxedema. This is just a severe form of hypothyroidism. It shares the symptoms of simple hypothyroidism, plus one develops a doughy appearance of the skin, usually with significant weight gain and a general thickening of the facial features. This disorder is common today, especially in America, where iodine antagonists and poor quality diets cause many cases. Taking thyroid hormones helps a little, but is not enough to repair the thyroid and heal the condition fully. Development is a far more comprehensive approach to this disfiguring and depressing condition.

Hypothyroidism in fast oxidation. This situation is dangerous and deserves much more attention. Now and then, a person with a fast oxidation rate on a hair test has all the symptoms of hypothyroidism such as fatigue, weight gain, dry skin and hair, and low levels of T3 and T4. Doctors usually prescribe thyroid hormone replacement. Some symptoms improve, but the person's health may become much worse, including the development of cancer and other serious conditions. Possible reasons for low serum hormones in these cases are:

- *Increased cell permeability.* Thyroid hormone then passes into the cells very easily. The body may respond by slightly reducing thyroid hormone production. This is not a true hypothyroid condition, but rather an adaptation to increased cell permeability.

- *Stress is often the underlying cause.* Most or all of these people are not true fast oxidizers, but rather slow oxidizers under stress, or stress fast oxidizers, no matter what the hair readings indicate.
- *Toxic metals or a nutrient deficiency may interfere with some aspect of thyroid hormone production.*

Dangerous drugging. Taking thyroid replacement hormones when one is in fast oxidation can be quite harmful. It can prevent the body from relaxing into slow oxidation and can significantly increase stress on the body. The case of Robert at the beginning of this chapter illustrates what can eventually result. If a hair analysis reveals fast oxidation, I suggest extreme caution with thyroid hormone replacement, regardless of serum or other hormone test results. If one feels tired without them, which is usually the case, it is because the body is in a healing phase. This will pass if one is following a properly designed development program.

HYPERTHYROIDISM OR GRAVE'S DISEASE

Grave's disease is common, dangerous, and illustrates how traditional medical endocrine evaluation is lacking in depth. Also, the treatment of long-standing Grave's disease are barbaric and never needed, in my experience, if one understands the condition well enough. Hair mineral tests indicate there are at least two types of hyperthyroidism. I call them *primary* and *secondary*:

- *Primary hyperthyroidism* is found in extreme fast oxidizers. It occurs in some hyperactive children, for instance. However, doctors rarely measure thyroid hormones in ADHD cases and it appears to be rare.
- *Secondary hyperthyroidism* is much more common and found in slow oxidizers with generally a good sodium/potassium ratio and some degree of a calcium shell or biounavailable calcium. Most are young, adult women, although it occurs in some men as well. The symptoms include some classic hyperthyroid symptoms mixed with slow oxidation symptoms. For example, the person feels "hyper" or irritable, perhaps sweaty and often has a fast pulse. Along with this, the person is also weak and exhausted, whereas in primary hyperthyroidism the weakness is not as pronounced. *Stress almost always plays an important role* in the condition and must be addressed for complete correction.

Both types respond to development programs. Primary hyperthyroidism is like other cases of fast oxidation. Copper, calcium, magnesium, vitamins A and D, choline, inositol and others that slow the metabolic rate, along with a proper fast oxidizer diet, can usually control and reverse the condition quickly. Secondary hyperthyroidism is more complex, although the supplements mentioned above will help somewhat. Others may be needed as well, however. The other factor to be addressed with the secondary type is usually an *extreme stress of some kind*. Let us explore the nature of secondary hyperthyroidism in more detail.

Only partial thyroid gland involvement. In secondary hyperthyroidism or Grave's disease, the calcium/potassium ratio, or thyroid ratio, remains high. This indicates extremely weak *cellular thyroid effect* in the body. This is unlike primary hyperthyroidism, in which the calcium/potassium ratio is low, indicating too much thyroid glandular effect at the cellular level. This difference can be explained by the concepts put forth in the previous chapter about

glandular function. In secondary hyperthyroidism, one or more of the following must be occurring:

- *Impaired hormone quality.* This could be due to a genetic problem, a toxic metal, a nutrient deficiency or perhaps an enzyme defect that impairs the quality of the thyroid hormones. As a result, the cells keep sending signals to the pituitary gland and the thyroid gland to make more of them. This is a vicious cycle that results in Grave's disease.
- *Impaired cell permeability.* Perhaps the quality of the thyroid hormones is adequate. However, they cannot pass into the cells adequately for some reason. The cells therefore keep signaling the pituitary and/or the thyroid gland to produce more of them in an effort to flood the bloodstream and force more into the cells. Slow oxidation, which is present in all cases of Grave's disease that I have seen, is associated with reduced cell permeability because high calcium and magnesium levels tend to excessively stabilize cell membranes. Other possible reasons are deficiencies of omega-3 fatty acids or other cell membrane defects.
- *Low serum or tissue potassium.* Dr. Eck taught that potassium somehow sensitizes the cells to thyroid hormone. Everyone with Grave's disease appears to have a low hair potassium level, so this may also be a cause for the condition.
- *Overwhelming stress or an emotional shock.* Acute stress always appears to be important as a trigger for Grave's disease. The stressor may be too much exercise, too much fear or worry, an infection in the thyroid or elsewhere, a change in a relationship, or some other shock to the body. Stress definitely lowers the hair potassium level, for example, and raises the hair calcium level in a slow oxidizer. This may be the trigger for the condition.
- *The role of toxic metals.* High levels of mercury, copper and the *amigos* (iron, manganese, aluminum, and possibly chromium and selenium) are often found with Grave's disease. Their role is unclear to me, but they may weaken the adrenals, affect cell membranes or act in some other way to interfere with normal glandular regulation of the body.

Thyroid resistance disease. Grave's disease may be somewhat like cases of diabetes due to *insulin resistance*. In Type 2 diabetes, the body's insulin is not able to do its job properly. In Grave's disease, it appears that thyroid hormones are not able to their job properly. In both cases, the body responds by raising the level of the hormones in an attempt to compensate for the problem. A difference between the two conditions is that a high level of circulating thyroid hormones is quite dangerous for the heart, for example, so doctors must intervene to lower the hormone level. A high level of circulating insulin causes hypoglycemia, but this is a minor problem. One can simply eat some sweet or starchy food and the problem goes away.

A partial stress response with reduced adrenal gland activity. Secondary hyperthyroidism may also be viewed as a type of secondary alarm reaction in the body. However, unlike a normal stress response, there is very little participation by the adrenal glands. In slow oxidizers, the adrenals are tired out, or perhaps they do not respond because there is a problem of coordination with the activity of the thyroid gland. Thus, Grave's disease can be viewed as an ineffective or very partial type of stress response. This concept is explored in more detail in Chapter 11.

Correction of Grave's disease. Development is practically 100% successful with hyperthyroidism, in my experience, without a need for barbaric treatments such as surgery or radioactive iodine (RAI) destruction of the thyroid gland (and added radiation to the whole body). Anti-thyroid medication may be needed for a few months until the deeper causes can be corrected. For the best success with development:

- *The person must rest much more and reduce stress.*
- *One must avoid all supplements that enhance the oxidation rate temporarily.* These include all B-complex vitamins, and all thyroid or adrenal-enhancing vitamins, minerals, herbs and glandular products. These may be resumed once the condition is gone. Computer-generated supplement programs may or may not take this into account.
- *Sauna use with an infrared sauna daily is most helpful and may be necessary.* It relaxes the nervous system and removes toxic substances from the body that may cause the condition.
- *Other relaxing natural therapies such as Rolfing, foot massage and others are very helpful.*

'Crashing.' As Grave's disease heals, some clients will develop low T3 and T4 levels for a while. They may also experience symptoms of low thyroid activity such as feeling cold in winter, with very dry skin and hair. It is as though they 'crash' from a *hyperthyroid* state into a *hypothyroid* condition for a while. This is similar to coming out of a *four highs pattern*, which can also cause a type of crash as a person moves into slow oxidation. It is not a problem, and will balance out by itself. It should not be treated with thyroid hormones or other drugs.

CHILDREN'S THYROID CONDITIONS

Cretinism. In its full-blown state, this is a rare thyroid condition in babies and children due to an iodine deficiency and/or low thyroid activity during pregnancy. It causes mental retardation and various types of delayed development syndromes that may somewhat resemble Down's syndrome. The difference is that cretinism can be corrected with iodine supplements.

Today, I believe that mild cases of cretinism are once again a growing, silent problem in America and elsewhere. The babies appear normal, but have developmental delays and learning problems. The cause is not a frank iodine deficiency, but rather the presence of so many iodine antagonists in the environment. The topic of iodine antagonists is discussed in detail in Chapter 17.

For example, ignorant health authorities might suggest giving babies fluoride drops or tablets. Toothpaste, mouthwash and dental fluoride treatments add more of this poison. Also, I have reviewed the research indicating that baby food and children's prepared foods such as reconstituted fruit juices are sometimes extremely high in fluoride without adding more of it. In addition, babies may drink chlorinated water, and chlorine is used in bleach and other products in the baby's environment. Bromides are found in baked goods the children are allowed to eat. If health authorities were wise, they would immediately ban all these practices.

29.

DIABETES, HYPOGLYCEMIA AND METABOLIC SYNDROME OR SYNDROME X

Karen, age 49, has been an insulin-dependent Type I diabetic for over 25 years. Earlier in her life she had bulimia as well. Her first hair mineral analysis revealed a slow oxidation rate with elevated levels of copper, manganese, iron and aluminum. Iron toxicity is very common in Type I diabetes, but is often hidden on the first few hair mineral analyses and may not show up on serum iron, ferritin, TIBC or other blood tests, either. Most doctors do not want to bother with a liver biopsy, which is probably the best diagnostic test for iron overload. Karen also had low zinc and low phosphorus levels. After one year on a development program, Karen has reduced her insulin requirement by 25%. She has also gone through many emotional healing reactions. She feels much more energetic, and much happier as well.

HYPOGLYCEMIA

Hypoglycemia and diabetes are among the most common and the most important ailments of our times. Hypoglycemia, in the view of development, is simply an early stage of diabetes, yet it is often ignored by post-modern doctors. As a result, it sooner or later progresses to the advanced stage of diabetes. There it accounts for much of the cost of our medical care system, and a significant part of modern mankind's disability and premature deaths.

The ability to improve glucose metabolism at very deep levels is one of the centerpieces of development science. This must be emphasized because most holistic and medical programs only superficially improve a person's sugar-handling ability. Development can, with enough time, free a person from diabetes and hypoglycemia completely.

THE BODY'S ENERGY SYSTEM

Chapter 25 introduced the concepts of *energy*, the most important concept in development science. Restoring glucose and carbohydrate metabolism is really about restoring the body's energy system. Like an automobile, our bodies have a rather complex 'fuel' system that must work properly to provide power for all aspects of human health and activity.

Hypoglycemia and diabetes are similar to problems in an automobile in which the fuel system is not working quite right. In a book published in 1988, Robert Atkins, MD, wrote that he performed five-hour glucose tolerance tests on everyone who walked into his office for a period of months. Over 75% had abnormal tests. Today the situation is probably worse.

Restoring the body's energy system is critical because:

- *Energy is needed for all body functions.* These range from the immune response to the glandular and digestive systems.
- *Energy is needed for all activities, from thinking to moving the body.* As energy improves, every aspect of life improves.
- *It is key to reversing the stages of stress.* As one moves back to a healthier stage of stress, most illnesses and other health conditions disappear.
- *Energy is needed for spiritual development.* This is the unfolding of the entire spectrum of human capabilities and the development of the subtle human bodies.

TWO DEFINITIONS OF HYPOGLYCEMIA

The traditional medical meaning of hypoglycemia is *low glucose in the blood*. This is what a doctor means by the term if he uses the glucose tolerance test or GTT to measure it. This is fine as far as it goes, but it is not sufficient. Many people who feel weak before a meal, or very hungry before a meal and must eat on time, have normal GTT tests. The patient undergoing a GTT may become weak, confused or even faint, yet the blood sugar remains in normal ranges.

A more comprehensive definition. A more comprehensive way to define hypoglycemia is *low energy production at a cellular level*. This is the meaning of hypoglycemia whenever the word is used in this text. The level of glucose may be low in the blood, or it may be normal or even high in the blood. However, either the glucose does not reach the cells or, if it does, it is not utilized well by the cells. The result is the same – low cellular energy production.

CAUSES FOR HYPOGLYCEMIA

General causes include an improper diet or lifestyle, nutrient deficiencies and/or metal toxicity. Other toxins, such as chemical toxins, bacterial toxins and even mental toxins, may also play a role. More specific causes for hypoglycemia include:

1. ***Low glucose in the blood.*** This may be due to:
 - *Excessive insulin secretion* (called reactive hypoglycemia). Insulin is the pancreatic hormone that is needed to move glucose from the blood into all the body cells.
 - *Low glucocorticoid hormone activity due to diminished adrenal gland activity.*
 - *Very rapid uptake of glucose into the cells, along with inadequate glycogen reserves.* This occurs often in fast oxidizers.
 - *Eating incorrectly, which might deplete the body's glycogen reserves.*
2. ***Inability to transport sugar from the blood into the cells.*** This may be due to:
 - *Insufficient insulin secretion by the pancreas.*
 - *Poor quality insulin due to a zinc deficiency or other imbalances related to the pancreas.*
 - *Problems with insulin receptors. This might involve a chromium deficiency.*
 - *Inadequate cell permeability.*
 - *Other possible cell membrane defects.* These may involve fatty acid deficiencies, excessive calcium in the tissues, or other causes.

3. Problems utilizing glucose inside the cells. These may be due to:

- *Inability to convert glucose to adenosine triphosphate (ATP).*
- *Inability to metabolize ATP to adenosine diphosphate (ADP), which releases the energy of the glucose.* Some doctors refer to this problem and the one above as *mitochondrial defects*.
- *Infections, enzyme deficiencies or even a low body temperature.* These can compromise aspects of the cellular energy cycles and the conversion of glucose to energy.
- *A faulty oxidation rate.* This is like the tune or adjustment of an engine, or the rate of speed of the engine. It directly affects energy production, even if everything else is working right.

Dysinsulinism and insulin resistance. As the energy-producing system starts to fail, the body tries to force it to work better. It does this by raising the level of glucose in the blood in the hope that more sugar will find its way into the body cells. This is similar to trying to make a car go faster when it has a clogged fuel system by stepping down harder on the gas pedal.

The major way this is done is for the adrenal glands to secrete more cortisol, and perhaps other stress hormones as well. These convert more glycogen into sugar, and may cause the conversion of some proteins and fats into sugar as well. An elevated cortisol is not healthy, however. This process is known as gluconeogenesis in biochemistry books.

At first, the body's effort to raise the blood sugar does not work well. In response to a higher cortisol and sugar level, the body just secretes more insulin and this keeps the blood sugar within a normal range. The person may feel tired, weight may increase and cholesterol and other lipid levels in the blood may become abnormal due to cortisol and insulin imbalances. However, standard blood tests may not show much, and more testing is rarely done. The patient may receive a cholesterol-lowering drug, which can make things worse as most are quite toxic.

Metabolic syndrome or syndrome X. The long-term results of an improper diet too high in sugars and starches, along with higher cortisol, other nutrient imbalances and metal toxicity often gives rise to metabolic syndrome. People with metabolic syndrome are at increased risk of Type 2 diabetes, coronary heart disease, and other diseases related to plaque buildups in the artery walls such as strokes and peripheral vascular disease. The risk factors are:

- *Abdominal obesity* (excessive fat tissue in and around the abdomen). It is currently defined as a man's waist of 40+ inches (102 cm), and a woman's waist of 35+ inches (88 cm).
- *Increasing age.*
- *Serum triglycerides above 150 mg/dl.*
- *HDL cholesterol below 40 mg/dl in men and below 50 mg/dl in women.*
- *Elevated blood pressure above 130/85.*
- *Insulin resistance or glucose intolerance with a fasting glucose above 100 mg/dl.*
- *Increased blood clotting tendency with elevated fibrinogen or other clotting abnormalities.*
- *An inflammatory state, often with a high C-reactive protein level.*
- *Other.* Physical inactivity, hormonal imbalances and perhaps even genetic predisposition.

Over 50 million Americans have this condition! This is one out of every six people. Even some children have it today. Instead of correcting the causes, medical physicians usually medicate these individuals with cholesterol-lowering drugs, blood pressure drugs and others. Blood pressure pills may prevent some deaths, but this is another enormous medical blunder. It costs the nation billions of dollars every year, and costs many lives as well. With development,

the risk factors usually disappear by themselves, often within a few months, without the need for any drugs. However, do not stop taking prescribed medication without checking with the prescribing physician.

THE ONSET OF DIABETES

After one has been hypoglycemic and/or has dysinsulinism or metabolic syndrome for a while, one of two scenarios develop. Either the pancreas cannot keep producing so much insulin and the insulin level declines. Simultaneously, the blood sugar level starts to rise and the person has a full-blown case of diabetes. The other situation that arises is that the body keeps producing enough insulin, but the insulin doesn't work very well. That is, it cannot move the sugar out of the blood and into the cells well enough.

Doctors call this *insulin resistance*. It is likely due to a chromium deficiency or other factors that have to do with glucose transport across cell membranes. Perhaps it is caused by actual defects in the insulin molecule. Recall that the entire system is now under great strain and serious nutritional deficiencies are developing within it. Either way, clinical diabetes or high blood sugar is the result. From here, things go from bad to worse.

- Diabetes symptoms.** In its early stages, diabetes causes few symptoms, but may cause:
- *Frequent urination.* The kidneys attempt to control the blood sugar level by spilling some sugar into the urine. More water is lost with the sugar, so the result is more frequent urination. The word *diabetes* means excessive urine. This is not good because one can become dehydrated. Also, the body can lose more nutrients in the excessive urine.
 - *More thirst.* Losing more water causes more thirst as the body calls for more water to replace the fluid lost to urination.
 - *Fatigue.* This occurs due to cellular hypoglycemia, meaning an impaired energy production system. However, most diabetics are accustomed to this symptom, as it has gone on for years in most cases. They drink a little more coffee, tea or soda pop, and often use other stimulants such as fear and worry to keep themselves going day after day. Many diabetics are quite *driven*. This is a personality trait that is often found in diabetics.
 - *Other hypoglycemic symptoms.* These may include sugar and starch cravings, shakiness or irritability before meals, inability to skip meals, intense hunger every few hours, or others.

The glucose tolerance test or GTT. A simple blood test may or may not reveal high blood sugar at this point because the level may vary during the day. The definitive medical test is a 3- or 5-hour glucose tolerance test. A GTT should be performed, since diabetes is a very chronic and serious condition.

Diabetic complications. These often occur in spite of the medical 'cures' of insulin and other drugs. The first sign is often peripheral neuropathy such as tingling and numbness in the extremities. Later complications include erectile dysfunction, trouble walking called intermittent claudication, blindness, kidney failure, weight gain, heart attacks, strokes, ulcers, gangrene and even amputation of toes or even limbs. This costs us billions of dollars annually, since diabetes afflicts some twenty million or more Americans and many millions in other nations as well.

AN ALTERNATIVE APPROACH

Development offers an alternative to the above scenario that plagues so many people today. The key features of this alternative are:

- *Prevention.* A proper diet, healthful lifestyle and nutritional supplementation, along with removing toxic metals, can absolutely prevent diabetes in most, if not all cases.
- *True reversal of the condition.* Reversal may take a few months or even a few years. However, I am often surprised how quickly some diabetics respond. Reversal can be accomplished at any stage of the disease.
- *No need for toxic, costly and very inconvenient drugs that do not even prevent serious complications and an early, painful death in many cases.*

The time factor in diabetes correction. Correction of diabetes with development can occur in as little as a few days to weeks, provided the client will 1) stop drinking all coffee or perhaps even tea, 2) rest a lot more, going to bed by 9 PM and with a daily nap, 3) drink at least 3 quarts of spring or distilled water that hydrates the body properly, 4) eat a lot of cooked vegetables, and 5) take several very targeted supplements to balance the body chemistry, and not symptomatic remedies such as herbs. Deeper correction of the body is slower, depending on how long the condition has gone on.

Robert Atkins, MD wrote that he was often able to reduce blood sugar levels as high as 900 mg down to normal within a few days to a few weeks by eliminating ALL carbohydrates from a person's diet and supplementing essential nutrients. While his diet was extreme, its ability to reverse a serious condition so fast should tell us that nutritional approaches have merit and should be used first, before drugs and especially before insulin. A few doctors report reducing blood sugar very rapidly with a few days of a total water fast along with loads of rest. While a short-term approach and not as safe, in my view, it shows how natural methods can help.

Some development practitioners, including the author, have become discouraged when it takes a few years to reverse diabetes completely. The usual reason is simply that there are just many layers of adaptations to be uncovered, retraced and cleared. As a result, symptomatic improvement may or may not occur quickly, though often the person feels better very fast. So do not give up on diabetics. They often want a quick fix, and if they don't get one, they become very despondent and often give up hope. However, there is no reason at all to give up on them, as they will get better.

OTHER TOPICS RELATED TO DIABETES

The diabetic personality type. Diabetics, as a group, tend not be the most cooperative patients. This is one reason diabetes is harder to correct than some other diseases. While many exceptions occur, diabetics as a group are hard-driving, productive people who are itching to return to their hectic schedules or lifestyle. They generally have more difficulty than some others in changing their lifestyles to rest more and relax more to allow healing to occur.

Cannibalism and a low sodium/potassium ratio. As the body continues to try to force up the blood sugar in order to push more sugar into the cells, it begins to consume or convert actual body tissue into sugar. This just worsens health much more.

An analogy. If stepping on the gas pedal does not bring enough fuel to the motor of a car, one could drain out some engine oil, which can burn as well, and pouring it into the gas tank. When that doesn't work, one could drain the transmission fluid out and try putting that in the gas tank. When it doesn't work, one could drain out the brake fluid and pour that into the gas tank.

Diabetes is a form of inflammation. Many factors involved in diabetes are the same ones involved in all inflammatory conditions. They include an inflamed or 'hyped up' blood sugar level, iron toxicity, zinc deficiency and often a diabetic personality type that is too active and not the most compliant. Also, elevated blood sugar is associated with advanced glycation end products or AGES, which have oxidant properties that cause inflammation of the endothelial lining of the arteries. This is a cause of plaque and artery disease in diabetics.

Diabetes is usually a diet-related problem. The so-called diabetic diet is another dietetic and medical mess. Diabetes is often easy to control if a person severely limits carbohydrate intake for a while. In particular, however, one must avoid ALL refined sugars, all white flour products, all wheat (even whole wheat) and most fruits and all juices. Instead, one must eat many more cooked vegetables (but not potatoes and sweet potatoes) along with some animal protein such as meat and eggs.

Lifestyle habits and diabetes. Certain lifestyle habits often accompany diabetes:

- *Smoking.* All smoke is a powerful irritant and may stimulate the adrenals somewhat, even a depressant drug like marijuana. In addition, the smoke contains toxic metals that can affect any organ of the body.
- *Lack of rest.* Most diabetics do not rest nearly enough and push themselves. It is like a "lead-foot" driver who just floods the engine with fuel day after day. Eventually, the fuel system of the body becomes deranged. More rest is critical.
- *Alcohol.* Alcohol upsets the blood sugar, lowers zinc and other nutrients, and dehydrates the body to some degree.
- *Coffee-drinking and diabetes.* Many diabetics love coffee. This habit must cease completely. Even too much tea is not good. The effects of coffee, in particular, include:
 - *Acidification of the body tissues.* This is the most damaging effect of the coffee habit. While one cup per day of regular coffee, not espresso or cappuccino, is okay for most people, any more than this has a strong acidifying effect. This favors a high blood sugar and damages the body in many other ways, as well.
 - *Dehydration.* This alone can raise the blood sugar through a kidney-mediated mechanism. *Drinking coffee is the opposite of drinking the correct water, in this regard.* Making coffee with distilled water is even worse, as the chemicals in the coffee enter the cells even faster and more effectively. Everyone, but diabetics in particular, should replace all or almost all of their coffee-drinking with mainly pure spring water or distilled water, and few other beverages.
 - *Adrenal stimulation and eventually adrenal exhaustion.* Coffee is a powerful stimulant drug, more so than tea, that weakens the adrenal glands and stresses the body severely.

SUMMARY AND IMPLICATIONS OF THE ABOVE

- *All diabetics are hypoglycemic.*
- *Diabetes is always a nutritionally-related disorder.*

- *The “diabetic diet” most patients receive is faulty and often makes their condition worse.*
- *Oral anti-diabetic drugs such as tolbutamide, Diabinase, Glucotrol, Micronase, Tolinase and others are pancreatic stimulants. They do nothing to correct the cause of hypoglycemia and diabetes, and, in fact, make one worse off later.*
- *Real healing requires nutritional supplements and lifestyle changes in most cases. Even the ‘best’ diabetic doctors and hospitals often ignore this.*

HAIR ANALYSIS, HYPOGLYCEMIA AND DIABETES

Hair analysis can rapidly evaluate a person’s sugar-handling capability and cellular energy system, but is not diagnostic for diabetes or hypoglycemia. Five general trends Dr. Eck identified for hypoglycemia include:

- A very unbalanced oxidation rate.
- A sodium/potassium ratio less than about 2 to 2.5.
- A calcium/magnesium ratio above 9.5 or 10 or less than about 4.
- Certain trace mineral imbalances
- Elevated toxic metals, especially lead and cadmium.

These are quite general and, of course, extremely common today. Let us explore them further.

1. AN UNBALANCED OXIDATION RATE. Hypoglycemia and diabetes occur in both fast and most slow oxidizers.

Reasons for hypoglycemia in fast oxidizers include:

- *Burning up a lot of fuel.* Like an engine that is running too fast, these individuals burn up a lot of fuel or calories. If they eat fast-burning sugars, for example, they may experience extreme swings in their blood sugar levels. This is one reason why they do better on fats and oils. These foods contain more calories than sugars and burn much slower. *Fats are like hardwood logs* that burn for hours, while *sugars burn more like gasoline on a fire*, providing only short bursts of energy and seriously upsetting the delicate hormone balance. For this reason, eating too many sugars places extreme stress on the bodies of fast oxidizers.
- *Low glycogen reserves.* Glycogen is a storage form of carbohydrates. Dr. Eck said that fast oxidizers may have less glycogen or fuel reserves, thanks to high cortisol levels. As a result, if they eat incorrectly or are under a lot of stress, they can “run out of fuel” easily. This may also contribute to extreme and sudden blood sugar fluctuations, especially when the diet is high in sugars and starches.
- *Strong starch and sugar cravings.* Fast oxidizers often crave starches, sugars or perhaps alcohol to give them a quick energy boost. This causes a roller coaster-like effect on their blood sugar level. This is very hard on the body, somewhat like repeatedly flooring the accelerator on a car. They may do this all day long for years until they burn out many nutrients, leading to hypoglycemia and diabetes.
- *Stress seekers.* Many fast oxidizers live in the fast lane and have Type A personalities. This kind of life tends to deplete their bodies of nutrients even faster, worsening their situation.

- *Increased cell permeability.* A lower tissue calcium and magnesium level means that many fast oxidizers can move glucose into their cells very rapidly, depleting blood sugar quickly. This is especially the case when they are under stress, as they often are.

Mother's milk is excellent for fast oxidizer children. Mother's milk, rich in fat, is the perfect food for babies who are all fast oxidizers. Feeding babies and young children *sweets of any kind*, including juices and even much fruit or skim milk, is just asking for blood sugar problems. Babies and young children, in particular, require plenty of high-quality fats, including the omega-3 oils such as DHA for their brain development. A diet rich in quality fats and oils will not cause weight gain nearly as much as eating too many carbohydrate foods.

Reasons for hypoglycemia in slow oxidizers include:

- *Reduced adrenal and thyroid glandular activity.* This can cause generally lower cortisol levels, which tends to impair the conversion of glycogen to glucose, and results in chronic low blood sugar, at least in the early stage of hypoglycemia. Slow oxidizers often crave sweets or starches for this reason.
- *Lower insulin levels.* This may impair the body's ability to move glucose into the cells, causing somewhat lower cellular glucose levels.
- *Reduced cell permeability.* This can interfere with the body's ability to move glucose into the cells and move cellular waste products out of the cells.
- *Elevated calcium and magnesium levels.* Biounavailable calcium is associated with excessive cellular acidity that reduces cellular energy production.

Cravings for alcohol among slow oxidizers. Slow oxidizers may drink alcohol because it is an 'alternative fuel' that enters the bloodstream quickly, requires no digestion, is calming and solves the fuel problem, though it is only for a short time.

Protein helps slow oxidizers stabilize their blood sugar. Drs. Watson and Eck both knew this well. The reasons why adequate animal protein appears to be helpful:

- *It slightly stimulates the adrenals and thyroid glands, enhancing the oxidation rate.*
- *It enhances protein synthesis, an anabolic or building up process that also helps move one out of slow oxidation.*
- *Animal protein supplies primarily zinc, but also B-complex vitamins, manganese and other nutrients that slow oxidizers require.*

2. A LOW SODIUM/POTASSIUM RATIO. This is the most important indicator of sugar and carbohydrate intolerance. A ratio less than 2 is the basic indicator. Less than 1 is more extreme trend for carbohydrate intolerance. Reasons why this ratio is used include:

- *Weak adrenals.* The adrenals play a major role in maintaining the blood sugar level.
- *Tissue catabolism or breakdown.* This occurs because the body can no longer utilize sugars properly. As a result, it begins to cannibalize its own tissues. This may cause the hair potassium level to rise in relation to sodium as potassium is released from dying cells.
- *Other cellular, electrical and hormonal imbalances.*

2. A HIGH OR LOW CALCIUM/MAGNESIUM RATIO. Dr. Eck called the calcium/magnesium ratio the *sugar sensitivity* ratio. It appears to mainly reflect the dietary aspect of hypoglycemia and diabetes, rather than any internal aspect. Dr. Eck said that a ratio greater than about 10 is an indicator that one is *exceeding one's carbohydrate limit in the diet*. This can occur even if one is not eating that much sugar or starch. In addition, Dr. Eck felt that a ratio greater than 12 is associated with diabetes. I have not been able to confirm this diabetic trend, however, because a high calcium/magnesium ratio is extremely common today.

Instead, I am now using a tighter level for excessive carbohydrates in the diet of about 9.5 to 13.5. Since Dr. Eck's passing I have also noticed that a calcium/magnesium ratio above about 13.5 appears to indicate a *lifestyle factor or an attitude* that does not serve a person's best interests, rather than diabetes. For this reason, I sometimes call this ratio the *lifestyle ratio*.

Dr. Eck also said that a calcium/magnesium ratio less than 3.3 is another trend for carbohydrate intolerance. I have not been able to confirm this too well, either. Any ratio below about 4, however, is definitely not within the normal range for this ratio.

4. TRACE MINERAL IMBALANCES. Low or very high levels (biounavailability) of certain minerals are associated with glucose intolerance. These include:

Magnesium. This is needed for most enzymes involved with glucose metabolism. Magnesium is low in most diets and is biounavailable to some extent in all slow oxidizers.

Chromium. Chromium is believed to be needed for insulin to move glucose through the cell walls. Chromium is almost universally deficient in the American and European populations, especially among those who live on refined food, and more so in those above age 40 to 50.

Zinc. This critical mineral is also deficient in the entire population today. It is needed for insulin production, insulin release and to prolong the action of insulin. It is also needed to make digestive enzymes. A zinc deficiency may also cause the pancreas to secrete a less healthy and/or less effective form of insulin.

Manganese. This essential mineral is required in the mitochondria of all cells to burn or metabolize glucose. Biologically available manganese is deficient in most of the population.

Copper. Imbalance is associated with zinc deficiency, and often with energy loss due to low levels of available copper in the electron transport part of the Krebs energy cycle. Copper imbalance also often affects the thyroid gland. Fast oxidizers require more copper to balance their oxidation rate.

Selenium. Adequate selenium is needed for thyroid activity and for liver detoxification. Selenium is commonly deficient in the population. A recent study by Martin Maclaustra (2009) indicates higher serum levels of selenium in diabetics. The author concluded that diabetics are selenium-toxic. However, since most people are deficient in selenium, it is more likely that either 1) selenium was being lost into the blood, or 2) perhaps the selenium is performing a protective function or 3) perhaps it is in a biounavailable form in the blood for some reason.

Iron. Iron overload is very common and it can replace zinc in the pancreas, leading to some cases of diabetes. Iron is also required for cellular energy production in the electron transport system. Iron, in excess, causes oxidant and other inflammatory damage to the body in many ways that may include damage to the glucose metabolism system of the body.

5. ELEVATED TOXIC METALS. Toxic metals are commonly involved in hypoglycemia or diabetes. Cadmium, lead, mercury and copper in excess interfere with zinc

metabolism. Lead not only replaces zinc, but interferes with calcium metabolism as well. For this reason, the extra detoxification procedures I recommend are very helpful for those with hypoglycemia and diabetes.

Toxic metals mostly hidden, at first. This occurs because they are sequestered deep in body tissues. This is not a problem in development, as we assume they are present. The hair test provides enough information to guide the balancing of body chemistry. This, in turn, tends to mobilize ALL the toxic metals from storage and removes them, along with eliminating hundreds of toxic chemicals. More toxic metals will be revealed on retests as they are eliminated through the hair and skin. However, if the energy level is low, it is not uncommon to wait a year or more before many toxic metals are revealed on a hair analysis.

CARBOHYDRATE TOLERANCE ASSESSMENT PROTOCOL

1. Check the oxidation type and rate. Extremely slow or extremely fast oxidation rates are always associated with hypoglycemic tendencies. Even moderately unbalanced oxidation rates, both fast and slow, are often associated with hypoglycemia because energy is not used efficiently enough, leading to cravings for sweets and starches, and perhaps for alcohol as well.

2. Check the sodium/potassium ratio. When less than 2 this is another indicator for hypoglycemia and perhaps a tendency for diabetes.

3. Check the calcium/magnesium ratio. If it is between about 9.5 and 13.5, the person is likely exceeding his dietary carbohydrate tolerance. However, this may not mean the person eats a huge quantity of carbohydrates, since each person's tolerance for them varies depending on one's health, genetics and other factors. Carbohydrates are hidden in most foods, so a practitioner may need to ask detailed questions, at times, to discover where they are hidden in the diet. They can be high in milk, wine, beer, sauces, dressings and other unlikely places.

4. Check the levels of zinc, in particular, as well as chromium, manganese, selenium and perhaps iron, copper and phosphorus. These may provide additional clues to imbalances related to energy production.

5. Review the levels of lead, cadmium, mercury, arsenic, nickel or aluminum. All of these replace vital minerals and can potentially upset blood sugar and energy production.

6. Signs and symptoms. Often signs and symptoms are extremely helpful to identify blood sugar imbalances. *Hypoglycemic symptoms* may include fatigue even if one sleeps well, irritability before meals, inability to skip or miss meals, and cravings for chocolate, sugar, salt, hot or spicy foods, or other 'pick-me-ups'.

Diabetic symptoms include frequent urination during the day and at night, excessive thirst, cravings for carbohydrate foods, yeast problems, weight loss in some but not all cases, and at times generalized weakness. A review of several hundred thousand mineral analyses confirms the value of these simple indicators for both detecting and monitoring glucose tolerance. These indicators, together with symptoms, can usually and easily determine whether hypoglycemia and possibly diabetes are present.

A glucose tolerance test or GTT should be done on anyone in whom the practitioner suspects diabetes. A GTT for hypoglycemia, in my view, is not needed if one has a hair analysis. Problems with the GTT abound. The person may start shaking or have other hypoglycemic symptoms, and the results are not easy to interpret. Robert Atkins, MD, who ran a lot of them, suggested that insulin should always be measured with glucose to make the test more accurate.

30.

CARDIOVASCULAR AND RESPIRATORY DYSFUNCTIONS, OXYGENATION, ALLERGIES AND ANEMIAS

Richard, age 59, was a retired school teacher. His blood pressure had been mildly elevated (about 140/100) since age 18. He had no other significant health problems. Richard ate a high-quality, mostly vegetarian diet and took vitamins regularly. Both parents died of arteriosclerosis at age 76. At times, high blood pressure is due to some degree of kidney impairment. Richard's first hair analysis revealed several indicators of kidney stress:

- *The sodium/potassium ratio was low at 1.27 (50% of normal).*
- *Cadmium was elevated. Cadmium is highly toxic and accumulates in the kidneys, where it can affect blood pressure. Cadmium is also associated with hardening of the arteries because it replaces zinc in the arteries.*
- *Calcium and magnesium levels were very high. This can indicate calcium deposition in the soft tissues. Calcification can occur in the delicate vessels in the kidneys, causing congestion and increased resistance to the blood flow.*

After three months on a development program, Richard reported his blood pressure was slightly lower, about 138/84. His first hair analysis retest revealed:

- *The sodium/potassium ratio was higher, but still somewhat low, indicating kidney stress.*
- *Cadmium doubled! This indicates a rapid elimination of cadmium through the hair and skin.*
- *Iron was elevated. Iron toxicity can cause high blood pressure. Iron toxicity is often associated with feelings of anger and hostility, which are also known to raise blood pressure.*
- *Nickel and lead were also elevated on this test, indicating they were hidden before and were now being eliminated.*

Six months later, Richard reported his blood pressure was 130/80. It has remained at this level for over five years, without the need for a nutritional program or any drugs. Note in this case how many toxic metals were hidden and not revealed on the first hair mineral analysis.

Case #2. *A young friend and neighbor, age 28, stopped in and complained of mild chest pain that reminded me of angina pain. He did not want to bother with a hair analysis. I guessed that he did not eat well and probably was low in calcium and magnesium. (I don't normally guess, as I am often proven wrong by the hair analysis). I gave him a bottle of chelated calcium and magnesium tablets and suggested he take one tablet three times daily to see what would happen. At least, I thought, this is fairly safe.*

Several days later he stopped by again and said the pain was completely gone. I reminded him to keep taking the tablets. He thanked me and went on his way. A few weeks later I saw him and asked if he was still taking the tablets. He said he was not very regular with them and the pain in his chest had come back. A few months later, I came home from work to find the paramedics at his apartment. At 28, he had died of a heart attack. I believe this tragedy could have been averted if the young man had just taken the time to balance his body chemistry with a simple dietary and nutritional supplement program.

Cardiovascular health. Development is very helpful to prevent and correct most cardiovascular conditions. These include angina, heart attacks and strokes. Others include arteriosclerosis, aneurysms, congestive heart failure, heart valve problems, venous stasis, circulation problems such as Reynaud's disease, as well as others. Their biochemical causes are:

- *Connective tissue problems.* Most, if not all cardiovascular diseases have a connective tissue component. This has to do with copper imbalance and zinc deficiency in many cases, along with low vitamin C levels. Copper and vitamin C are direct antagonists. This means that slow oxidizers, who often have too much copper, also need more vitamin C, within reason. Too much vitamin C, however, is very yin, which unbalances the body. It may also chelate and remove other essential minerals including zinc, copper, manganese and others.
- *Toxic metals.* These are almost always involved. The heart is a smooth muscle that readily absorbs certain toxic metals such as arsenic, lead and others.
- *Obesity, sedentary lifestyles, and horrendous diets and eating habits.* These often play an important role in cardiovascular disease.
- *Autonomic imbalances.* The cardiovascular system is activated by the sympathetic nervous system. Autonomic imbalances are often involved in cardiovascular disease, along with emotions of fear, anger, rage and others. Phrases such as "he died of a broken heart" are not without some truth.

Imbalances on a hair analysis associated with cardiovascular conditions include:

- *All magnesium imbalances.* These are perhaps the most critical imbalances having to do with the heart and cardiovascular diseases. Too much magnesium in the tissues indicates biounavailability, a trend for heart attacks, atrial fibrillation and other imbalances. Too little magnesium is sometimes also associated with these and other conditions.
- *Toxic metals.* For example, cadmium replaces zinc. Lead replaces calcium and perhaps magnesium. Iron and manganese replace zinc as well. Mercury replaces zinc and other vital minerals in the artery walls and elsewhere.
- *Low tissue calcium and magnesium.* This causes chronic vasoconstriction and is part of the fight-or-flight syndrome.
- *High tissue calcium and magnesium.* This is strongly associated with deposits of calcium that can harden the arteries everywhere in the body. This leads to high blood pressure, kidney disease, general inflammation in some cases, aneurysms and other problems.
- *Copper deficiency or biounavailability.* Copper is essential for the integrity of connective tissues, which include the arteries, veins, capillaries and the heart valves.
- *Low zinc.* Zinc is required for the flexibility of the arteries and to reduce inflammation.

- *Low energy or vitality.* The heart uses a lot of calories and energy. When energy is low, the heart will feel the strain and will not work as well.
- *Fast oxidation.* This is associated with high blood pressure, tachycardia or fast pulse, and often with certain types of arrhythmias, palpitations, angina and other symptoms.
- *Slow oxidation.* This is associated with many cardiovascular diseases, from impaired circulation and arrhythmias to certain types of heart attacks and strokes.
- *A low sodium/potassium ratio.* This is associated with tissue catabolism or tissue breakdown. This may affect the arteries and the heart itself, leading to cardiomyopathy, for example. This serious condition can respond excellently to development and sauna therapy.
- *Low hair potassium.* This is associated with many cardiovascular problems such as palpitations, skipped beats, heart attacks and others.
- *High hair Sodium.* High sodium is associated with fluid retention, edema and hypertension.
- *Low hair sodium.* Very low sodium is associated with fluid loss and a lower blood pressure.
- *Elevated iron.* Toxic iron can build up around the heart and even in the heart muscle itself.

Other risk factors for heart disease. These include a family history, aging, menopause, smoking, eating sugar, eating hydrogenated and trans-fats in foods like margarine, hypertension, obesity, lack of any exercise, stress, anger, depression, diabetes, high total cholesterol, high LDL cholesterol, low HDL cholesterol, high homocysteine, infections of all kinds, high fibrinogen, high C-reactive protein, high insulin, high triglycerides, low testosterone, metabolic syndrome, use of some prescription or recreational drugs, and any exposures to radiation, toxic metals, pesticides, EMFs and many toxic chemicals.

HEART ATTACKS (myocardial infarction)

Causes. Doctors do not often emphasize enough the two primary types of heart attacks:

- *Those caused mainly by constriction of all the arteries leading to the heart.* These are more common in fast oxidizers.
- *Those caused mainly by a blood clot or piece of plaque that becomes lodged in one coronary artery.* These are more common in slow oxidizers.
- *Both can be aggravated by narrowed, inflamed, brittle or otherwise damaged arteries.* Development can often predict which is more likely. It can also help prevent heart attacks in the first place, and assist rehabilitation to avoid second heart attacks, as well.

Fast oxidation and vasoconstriction. Fast oxidizers are more prone to heart attacks caused or aggravated by muscular constriction of the coronary arteries. These are the arteries leading to the heart. The arteries may constrict as part of a fight-or-flight reaction. The heart attack occurs due to the following cascade of events:

- *An acute stress, or perhaps a small blockage of an artery leading to the heart, occurs first.*
- *This causes pain, faintness, shortness of breath, and perhaps other symptoms.*
- *The result is a more intense fight-or-flight response, which further constricts the arteries.*
- *This causes more pain and discomfort, and an even more intense fight-or-flight response that further constricts the arteries.*
- *If this vicious cycle is not broken fast, usually with an injection of magnesium sulfate at a hospital, blood flow to the heart decreases, causing severe or fatal damage to the heart.*

Slow oxidation and thromboses. The cause of this type of heart attack is:

- *A small piece of plaque breaks free and lodges in a coronary artery.* This is called an embolism or thrombosis of a coronary artery. This causes pain, faintness and other symptoms. The area of the heart served by this artery usually dies.
- *However, since there is not much of a fight-or-flight response in slow oxidizers, the other arteries do not constrict and keep functioning normally.*
- *As a result, this type of heart attack usually only affects a small part of the heart and the patient often survives.* It is usually only fatal if the heart has been previously damaged or if the blood clot happens to be in a very large coronary artery, which is actually rare. Some of these heart attacks are even “silent”, meaning they give no symptoms at all. One is only aware of them later because a routine electrocardiogram or EKG shows some heart damage.

A combination of the two types occurs at times, as well. This explanation of heart attacks may sound simplistic. However, if it were widely known, it would save many lives because both types, and especially the first and more fatal type, are quite easy to prevent with a development regimen, or even just calcium and magnesium supplements, in most cases.

Secondary and underlying causes of heart attacks. Many factors can contribute to both types of heart attacks. Medical doctors are aware of the impact of smoking, obesity, alcohol consumption, thickened or sludgy blood and perhaps inflammation (a high C-reactive protein, for example). Factors they are less aware of include fast and slow oxidation, zinc and copper imbalances affecting all connective tissue, vitamin C deficiency, or even a sulfur imbalance in some people. Other subtle factors are toxic metals in the arteries, biounavailable calcium that builds up in the arteries, inflammation, low energy production leading to inability to adequately repair the arteries, and others. Development usually addresses all of these factors much better than most symptomatic remedies such as herbs, vitamins or exercise regimens.

HIGH BLOOD PRESSURE OR HYPERTENSION

Most hypertension is labeled 'essential', which means the doctor does not know the cause. However, hair testing often easily identifies half a dozen or more causes. These may include:

- *Stress and/or anger.* These alone will elevate the blood pressure. Hair analysis patterns with this may be a fast oxidation rate, a high or low sodium/potassium ratio or possibly others.
- *Arteriosclerosis.* This is a common cause of high blood pressure. Systolic blood pressure tends to elevate more than diastolic pressure when calcification of the arteries is present.
- *Atherosclerosis.* This is a form of arteriosclerosis in which fatty plaques accumulate in the arteries. Zinc deficiency, copper toxicity or high toxic metals causes arteries to become brittle and inflamed. They may become coated with plaque for protection or as a response to inflammation. Cadmium, in particular, is associated with hypertension, although all the toxic metals can contribute, as can many toxic chemicals as well.
- *Kidney impairment.* Most of one's blood flows through the kidneys every three minutes or so. Especially as one ages, the kidneys usually become congested and toxic, impairing blood circulation through them. Hair analysis indicators of kidney stress include a low or very high sodium/potassium ratio, and elevated levels of mercury, cadmium and/or nickel.

- *Fast oxidation.* In this situation, low calcium and magnesium levels, and increased adrenal and thyroid gland activity cause vasoconstriction. This often results in a labile or fluctuating hypertension. An elevated tissue sodium level may also cause a higher blood volume and blood pressure. Fast oxidizers may also be more angry and stressed, which can affect blood pressure in some cases.
- *Diabetes, stress and uncontrolled emotions are other important causes.*
- *Metal toxicity.* Common toxic metals found in cases of hypertension include cadmium, mercury, copper, iron or others.
- *Fatigue.* Becoming too tired tends to increase the blood pressure. Circulation slows with fatigue and the body may increase the secretion of adrenaline to keep one going. This can increase the blood pressure. More rest is the simple solution for this cause.

LOW BLOOD PRESSURE OR HYPOTENSION

Low blood pressure is usually associated with adrenal insufficiency and a slow oxidation rate for the following reasons:

- *Low levels of adrenal hormones cause relaxation and thus some dilation of arterial muscles.*
- *Slow oxidizers are often in a parasympathetic state, associated with lower blood pressure.*
- *Slow oxidizers generally have lower tissue sodium due to insufficient aldosterone secretion.* Sodium loss causes a lower blood volume, which contributes to lower blood pressure.
- *Overall lower energy levels may also contribute to lower blood pressure.*

Extra sea salt is often helpful to increase the blood pressure if it is very low. Other supplements that can be helpful are adrenal and thyroid glandular substance, kelp or other iodine supplements, vitamin C, vitamin E and perhaps B-complex vitamins. However, the real answer is an integrated program to restore biochemical balance at the deepest levels. True fast oxidizers rarely have low blood pressure. When low blood pressure is present in a fast oxidizer, one must suspect the person is really a slow oxidizer under stress, also called a temporary fast oxidizer.

ARTERIOSCLEROSIS. Hair analysis indicators are:

- *Low copper.* The hair and serum copper level may be high, low, or normal. However, all fast oxidizers need some extra copper. Slow oxidizers may experience bioavailable copper that could contribute to the problem as well.
- *High calcium.* Calcium greater than 70-80 mg%, especially with a high calcium/magnesium ratio, is associated with calcium and perhaps even magnesium deposits in the arteries. When sodium and potassium levels become low, some calcium precipitates out of the blood and deposits in the arteries and other soft tissues.
- *Low zinc or high toxic metals such as cadmium.* Cadmium, mercury and other toxic metals can replace zinc and other vital minerals in the arteries. This causes brittleness and inflammation. The body often then coats the inside of the artery with cholesterol or calcium plaques to prevent further damage.
- *Diabetes.* This is a common cause of atherosclerosis and small artery disease. See Chapter 29 for the discussion of the causes of diabetes. Many have mild diabetes and do not know it.

- *Inflammation.* This is recognized as an important cause of artery disease. Doctors suggest taking aspirin forever to counteract it. In development, inflammation is dealt with by removing its causes such as low zinc, high copper, higher toxic metals and other imbalances.
- *Hypertension.* High blood pressure due to another cause can weaken the arteries and cause the body to coat them with plaque to protect them. Arteriosclerosis also causes hypertension.

Symptomatic natural remedies for inflammation. These include extra omega-3 fatty acids, zinc and magnesium supplements, cod liver oil, and perhaps coenzyme Q-10, hawthorn berry, taurine, garlic, curcumin, other spices and other supplements, at times.

Bypass surgery should never be needed if development science were applied. According to several large medical studies it is not even helpful in the long run. It is extremely costly, dangerous and always leaves the person with some brain damage due to the anesthesia and other drugs used in the procedure. Even in medical studies, more conservative treatment with diet, lifestyle, and perhaps drugs, if absolutely needed for a while, have been shown to be just as good. Sauna therapy, especially as part of a development program, can help remove anesthetics and other drugs that result from surgeries such as bypass.

TACHYCARDIA, PALPITATIONS AND ARRHYTHMIAS

Both fast and slow oxidizers can experience these symptoms. Fast oxidizers may experience all of them due to low levels of calcium, magnesium, zinc, copper or other vital minerals. These are needed to calm and regulate the heart. Toxic metals occasionally play a role as well. A faster pulse is part of the fight-or-flight response.

Slow oxidizers may experience palpitations and tachycardia due to a potassium deficiency, or due to biounavailable calcium, magnesium, zinc or copper. Low thyroid and adrenal activity in slow oxidizers can cause a weak and/or slow pulse in many older people. Toxic metals such as mercury, cadmium and others also often play a role in arrhythmias, palpitations and tachycardia. As they are removed, atrial fibrillation and other heart rhythm imbalances usually disappear without the need for pacemakers or other interventions.

Retracing and arrhythmias. During a development program, many people notice temporary, short episodes of irregular heart beats, palpitations or tachycardia. The usual cause is the release of toxic metals from storage sites and their temporary presence in the bloodstream. Most symptoms pass quickly.

Heavy sweating can be dangerous for those with a 1 or 2 mg% potassium level. Such individuals can experience cardiac arrest and death if potassium becomes too depleted due to a low potassium diet and fatigue, perhaps, combined with heavy exercise or pushing hard and then sweating heavily outside, in a sauna or elsewhere. This is what kills some young athletes.

HIGH CHOLESTEROL

Cholesterol is the vital raw material that is converted into all the adrenal and the sex hormones. Lowering it with drugs is silly and often dangerous. Elevated serum cholesterol is an indicator of stress involving the liver and adrenals, and little else.

Studies of the newer "statin" drugs reveal very serious side effects and minimal benefit for most people if one reads the studies carefully. Also, most of the studies were paid for by the drug makers themselves and cannot be trusted. Serum cholesterol levels normalize easily with a

development program in almost all cases, without any extra dietary cholesterol restriction. In fact, quality eggs and meats are important foods for most people. Extra fiber in vegetables also helps remove excess cholesterol.

'TYPE A' PERSONALITY

The personality described in medical literature as 'type A' is commonly associated with fast oxidation and/or sympathetic dominance. 'Type A' personalities tend to be aggressive, hard-driving, and have a tendency for high blood pressure and cardiovascular disease, especially if they are angry. Newer research has shown that not all 'type As' develop heart conditions. Those who are hostile and frustrated are the most susceptible. Interestingly, hostility and frustration are associated with a low sodium/potassium ratio on a hair mineral analysis. This is indeed one of the hair analysis indicators for heart disease, as well as for ulcers and other symptoms to which these individuals are prone.

IMPAIRED CIRCULATION

Impaired circulation is often easy to correct with development. Hair testing will often reveal the cause of the problem, so it can be addressed properly. The causes include:

- *Arteriosclerosis, atherosclerosis, diabetes or heart weakness from any cause.*
- *Slow oxidation with sluggish thyroid and adrenal glandular activity.*
- *Low blood pressure, which is often due to reduced adrenal gland activity.*
- *Skin congestion, toxicity or some other problem in the skin.*
- *Excessive sympathetic nervous system activity.* Especially when combined with weak thyroid and adrenal glands in the pattern called sympathetic dominance, the body tends to shunt the blood away from the extremities and toward the interior of the body as a defense mechanism.
- *Reynaud's syndrome.* This is a very severe autonomic imbalance that can be corrected, but may take longer to unwind because it has become a habitual fight-or-flight response to stress.

EDEMA AND CONGESTIVE HEART FAILURE

Swelling or edema of the ankles and other areas of the body has several causes. Most commonly it is due to kidney problems or heart problems. Hair analysis indicators are:

- *A low sodium/potassium ratio.* This may indicate kidney and/or cardiac stress. Either can contribute to edema. A very low ratio may be associated with congestive heart failure, a very serious cause of edema, although it is one that can be helped in many cases.
- *A high sodium or an elevated sodium/potassium ratio.* This can indicate water retention due to excessive sodium in the blood or tissues.
- *A high-carbohydrate diet.* This may cause yeast or other infections. It may also cause a higher sodium level due to inflammation and zinc depletion. Reducing dietary carbohydrates may have a beneficial diuretic effect. Eating wheat may cause edema due to allergic reactions and because it is highly inflammatory, due in part to its high glutamine content.
- *Low zinc, often from stress.* This can allow sodium to rise. Deficiency of vitamin B6 and magnesium may have a similar effect, as these nutrients act together with zinc.

- *Cadmium toxicity.* This often affects kidney activity and may cause sodium retention. Other toxic metals such as mercury, nickel, lead and others may have similar effects.
- *Protein deficiency.* This occurs rarely in some vegetarians, anorexic patients or others on extreme diets such as fruit diets. It can cause swelling due to osmotic imbalances.

Congestive heart failure. This is a failure of the heart to pump adequate blood. Fluid build-up occurs often in the feet and ankles. Causes of congestive heart failure include damage or weakness of the heart muscle, heart valve disease, hardened arteries that force the heart to work harder, and the emotion of sadness. Development is often helpful. In addition to the usual nutrition program, supplementary vitamin B6, zinc, bioflavonoids, coenzyme Q10, hawthorn berry and kidney glandular substance may be helpful.

ANEURYSMS

Weakness and bulging of the arteries are often due to zinc and other vital nutrient deficiencies. Toxic metals such as cadmium, lead or mercury may replace the zinc, weakening an artery wall. Usually, surgery is performed promptly when an aneurysm is detected. Recently, however, a doctor I work with was able to monitor an aneurysm with x-rays on a patient who refused surgery and simply followed a development program. The aneurysm decreased significantly in size and no surgery was performed. This surprised me, as the gentleman was in his 60s at the time. I suspect that many small, sub-clinical aneurysms may disappear during the course of development programs.

RESPIRATORY CONDITIONS

OXYGENATION, A PRIMARY NEED TODAY

To oxygenate every body cell adequately is critical for optimum health. Today this is problematic for many reasons. The most important of these are:

- *A lower oxygen content of the air, particularly in urban areas, mainly due to auto emissions.*
- *Chronic lung, sinus and bronchial infections in many adults that reduce breathing efficiency.*
- *Shallow breathing, particularly in women. This is largely due to a combination of chronic fear, lack of grounding and not wanting to move the abdomen in and out with each breath.*
- *Low anti-oxidant nutrient levels and smoking anything damages many people's lungs.*
- *Impaired general circulation and mild anemias that are fairly common in young women.*
- *Sedentary lifestyles and poor posture.*

Solutions. Everyone needs to learn good posture and to breathe deeply. Chapter 2 describes ways to do both of these. Healing all lung and bronchial infections with development science is also important, and may take a few years, as many are very chronic. Sauna therapy is most helpful for this purpose. In addition, everyone can use an ozonator/ionizer air purification machine. These are not too costly, and they convert some oxygen in the air to ozone or O₃. When it reaches the body, it is converted to O₂ and supplies a little bit more oxygen to the body cells. Chapter 49 contains information concerning how to purchase and use this machine properly in your bedroom. Hydrogen peroxide baths may also be excellent.

ALLERGIES

Allergies are inflammatory responses to foreign proteins and other foreign material that finds its way into the body. While the most commonly known ones are environmental allergies such as hay fever and a runny nose, other types include food sensitivities and brain allergies. Food allergies or sensitivities are almost universal. They are due to a combination of toxic food products and a deranged digestive system in many people today. They are extremely common in babies with developmental problems, for example, not just adults.

Brain allergies refer to reactions that take place in the central nervous system as a result of eating the wrong foods, or exposure to toxic chemicals or other allergens. They can be a hidden cause for many mental and emotional symptoms. The main causes of allergies are:

- *Weak adrenal glands.* When the body does not produce enough adrenal hormones, susceptibility to allergies increases. This is why the medical treatment for an acute allergic reaction is often adrenal hormones such a shot of cortisone or adrenaline. The success of certain common remedies for allergies is due to their effects on the adrenals. These include vitamin C, pantothenic acid, manganese and B-complex vitamins. As the adrenals recover and rebuild, allergy problems often subside.
- *Fatigue or stress.* These often make allergies worse by further depleting the adrenal glands.
- *Excessive cell membrane permeability.* This allows foreign matter to enter the body too easily. Causes include 1) fast oxidation and/or 2) low hair calcium and magnesium levels.
- *Leaky gut syndrome or low omega-3 fatty acids* are common causes of food allergies.
- *Low adrenal reserves.* Low adrenal reserve capacity can contribute to *acute and often severe* allergic reactions, including asthma and anaphylactic shock in a few cases.
- *Higher histamine levels.* Dr. Eck said that fast oxidizers have higher histamine levels, though it is also possible that they simply release histamine more easily, since their cells are more permeable.
- *Other possible causes.* Other nutrient deficiencies, toxic metals or even an attitude of closing oneself down or rejecting the world might contribute to some allergies.

Correction. At times, a simple remedy may suffice to control allergies. For example, supplementary calcium, magnesium, bioflavonoids and perhaps vitamin A often have anti-allergy effects in fast oxidizers and perhaps in sympathetic dominant slow oxidizers. These nutrients can strengthen capillaries, stabilize cell membranes and may slow the oxidation rate somewhat. More fat in the diet may help control allergies in fast oxidizers by reducing the oxidation rate. A complete development program is best as it can better identify and correct underlying causes for many kinds of allergies.

ASTHMA

Asthma is often a chronic allergic phenomenon involving a constriction of the bronchial tubes that causes difficulty breathing. The incidence of asthma, especially in children, has increased dramatically in the past 30 to 50 years. Most of the above regarding allergies applies to asthma, and it often responds easily to nutritional correction. In addition:

- *Chronic bronchial or lung infections may be involved with more difficult cases of asthma.* Getting rid of the infection will often take care of the asthma.
- *Food allergies are often present in many cases of asthma.* The most common allergic foods are wheat, beef, dairy, eggs, soy and sometimes corn. However, any food can cause a problem. A development program with a better diet can often reduce all food sensitivities rapidly.
- *Emotional factors may be important with asthma.* The person may feel suffocated for some reason. Inhibited expression may also be an emotional basis for asthma.
- *Stress often makes asthma worse, and may precipitate an attack.*

Fast oxidation with a low sodium/potassium ratio is a common acute asthmatic pattern. Slow oxidizers often experience a more chronic form of asthma. Development usually helps eliminate asthmatic conditions by reducing all allergic phenomena, relaxing the nervous system, reducing food reactions and enhancing digestion, and by bringing up and resolving chronic bronchial infections.

RESPIRATORY INFECTIONS

Causes of respiratory problems. These include the usual nutritional factors and toxic metal excesses. Other contributors include smoking, stress, poor diets, fatigue, air pollution, and shallow or disturbed breathing. Other possible causes include a lack of exercise or breathing very cold or foul air in closed spaces such as auditoriums, ships, planes, trains and buses.

Respiratory infections tend to respond well to development programs. Chapter 45 discusses simple, safe, non-toxic treatments for all infections.

Sinus infections. Most adults, in my experience, have some degree of chronic sinus infection. Symptoms are often minor, such as post-nasal drip or occasional sinus headaches. Other symptoms can be intense such as headaches and pain. The causes are poor circulation to the area along with the architecture of the sinuses that makes it easy for bacteria, and particularly fungi, to colonize there. For chronic infections, a development program will slowly improve the terrain until the infection becomes acute and is eliminated. In addition, for an acute sinus infection, excellent, powerful and quite safe remedies are:

- *Sniff and rinse the sinuses several times daily with preferably warm salt water.* Use about 1/2 teaspoon of Hain sea salt in 6 ounces of distilled water.
- *Sniff or inhale a little colloidal silver into the nostrils.* It should also be taken orally at the same time. It is quite non-irritating and is a wide spectrum anti-infective agent. I prefer products that contain less than 50 parts per million colloidal silver for this purpose, though sometimes the higher concentration of silver works well, too.
- *Buy a 250-watt, R40 base, reddish "heat lamp" from the hardware store.* This is really an infrared heat lamp, though they are not labeled this way. Place it in a socket that can handle a 250-watt bulb. Close your eyes and shine the lamp directly at the sinuses, as close as you can get without burning yourself. Keep moving the lamp around the sinus area for a maximum of 10 minutes at a time, 5-6 times daily. Results are often excellent. You can combine this with the salt water rinses and colloidal silver methods above.

- *The reddish heat lamp also works wonders, at times, on ear, nose, throat, bronchial and other types of infections.* Also, for general flu and infection symptoms, shine the lamp on the thymus area at the upper part of the chest for 15 minutes at a time 4 or 5 times daily. This treatment appears very safe. Cautions are do not touch the hot light bulb. Also, never shine the lamp directly in your open eyes and do not use the lamp on any part of your head for more than 10 minutes at one time. Wait at least an hour between sessions. You may leave the lamp on longer when it is shining on your chest, back or other part of the body.

Rhinitis, bronchitis and pneumonias. These common problems plague many people and can develop into more serious disorders such as chronic obstructive pulmonary disease or COPD, bronchiectasis and emphysema. Chronic infection is usually a factor in all of these conditions. A development program will slowly bring up stubborn lung and bronchial infections for healing. A number of years may be required, especially in older individuals.

A hair analysis may reveal a low sodium/potassium ratio in these instances, indicating a tendency for infection. However, this may not always be the case. Elevated nickel is also associated with lung damage in a few cases.

Nasal stuffiness during development programs. Clearing sinus problems and the elimination of toxic metals and chemicals from the brain are the causes in most cases.

Athletic training and development. Development is excellent for all athletes, but is not specifically designed as a performance enhancing program. In fact, vigorous exercise training tends to slow all deeper healing in the body by 1) increasing sympathetic nervous system activity, 2) depleting nutrients, and 3) interfering with rest and regeneration. For these reasons, vigorous exercise regimens are never helpful with development science.

ANEMIAS AND OTHER BLOOD DISORDERS

Dr. Eck took an interest in anemias and their close relationship with toxic metals. Blood is produced in the marrow of all the long bones of the body. This may seem like an unusual place for blood formation, but the reason for it is that the bones actually protect the marrow from most contamination due to various toxins, including toxic metals. Today, however, most people have some toxic metals in the bone marrow itself, and this is one reason for blood disorders.

Once all of the blood cells are formed in the marrow, they circulate for about four months before they are destroyed in the spleen, liver and elsewhere. Their components are then recycled to make new red and white blood cells. This is actually a fascinating process and one that can go awry due to many factors. Among the most common types of anemias are:

- *Iron deficiency anemia and copper.* Many apparent iron deficiency anemias are caused by copper imbalance and require a program to balance copper in the body. Most are mild, chronic, microcytic, microchromic anemias in young women and, at times, in children. Available copper is required for the conversion of iron from the ferric to the ferrous form, and back again, to produce hemoglobin. Anemia due to copper imbalance appears identical on blood tests to iron deficiency anemia. However, the cause is different and it does not respond well to supplemental iron. A hair mineral analysis can help distinguish the two, since taking iron is not healthful for most people and unnecessary in most cases. Times

when iron may be needed include 1) young women with very heavy periods, 2) strict vegetarians, and 3) anyone who is malnourished, especially if they do not eat meat or eggs.

- *B12 anemia common in older people.* Most people lose some ability to absorb vitamin B12 from their food as they age. This is a serious problem for many over the age of 60 or perhaps younger, especially if the digestive tract is in poor condition or if one is under a lot of stress.

Vitamin B12 deficiency causes a macrocytic or so-called *pernicious anemia*. It can cause permanent brain damage with symptoms of confusion, memory loss, dementia and even death. It is often missed by doctors in its early stages. A mild B12 anemia may also occur in vegetarians, or others who do not eat much meat or eggs. The cost of supplementary vitamin B12 is so low that this simple problem ought to receive more attention by the medical community. It is also a reason why everyone needs a digestive aid, especially older people.

- *Lead and other toxic metals.* Lead poisoning is well known for causing a type of anemia that can be fatal. Hidden lead toxicity may be responsible for the so-called *anemia of chronic disease*. This is seen commonly with cancer and other degenerative diseases. Elevated lead is often not revealed on any tests until it is eliminated from the body using a development program or some other method. Lead is often hidden because it is deposited deep within bone marrow and other inaccessible areas of the body. One or more years may be required to mobilize hidden lead with development science. Chelation therapy with EDTA and other drugs only removes more superficial lead deposits, in general, and unfortunately also removes essential minerals such as calcium and zinc.
- *Combination anemias and other blood disorders.* Toxic metals such as cadmium, mercury and others may also affect the bone marrow and interfere with zinc or copper metabolism. This occasionally causes unusual types of anemias and other blood problems that can leave doctors scratching their heads. As health improves, these unusual blood disorders often improve on their own without other treatment.

Other vitamin and mineral imbalances associated with anemias include:

- *Vitamin C deficiency may interfere with iron absorption.*
- *Vitamin E deficiency affects the stability of the red blood cell membranes.* Low vitamin E also causes a macrocytic anemia with shortened lifespans of the red blood cells.
- *Copper deficiency can impair iron absorption and incorporation of iron into hemoglobin.*
- *Zinc deficiency can cause a higher copper, which, in turn, interferes with iron metabolism.*
- *Vitamin B6 deficiency can inhibit synthesis of the heme portion of the hemoglobin molecule.*
- *Rarely, excess zinc intake can interfere with iron absorption and cause a copper deficiency.* It also decreases copper and iron levels in the liver. This can affect the incorporation and release of iron from liver ferritin. It may also increase the fragility of red blood cells.

Other causes for anemias. These include internal bleeding, most commonly seen in older people who use non-steroidal anti-inflammatory drugs for pain such as aspirin, ibuprofen, Tylenol, Aleve and the others. These drugs damage the stomach lining and cause chronic internal bleeding in thousands of people. Chemical poisoning due to pesticide exposure or something else will occasionally cause unusual blood disorders. Development programs can slowly remove the chemicals once exposure has stopped. Leukemias are discussed in Chapter 35 with cancers.

**31.
REPRODUCTIVE AND KIDNEY DISORDERS, THE IMMUNE RESPONSE,
SEIZURES AND HEADACHES**

Debra, 34, came for help because she was unable to become pregnant, in spite of many visits to fertility clinics. She was also fatigued, frequently nauseous, constipated and had recently had a miscarriage. She suffered from premenstrual syndrome, hair loss and chronic vaginal yeast infections, for which she had tried many anti-candida regimens. Her initial hair analysis revealed a copper level of 22.6 mg% (normal is 2.5 mg%). I advised Debra not to get pregnant until the copper level was corrected. Otherwise, she was likely to experience severe morning sickness and possibly other complications of pregnancy due to very severe copper toxicity. She reluctantly agreed to wait.

Two years later Debra's copper was down from 22.6 to 9.4 mg%. She reported no more yeast infections and much better energy. She also became pregnant at this time. She experienced nausea throughout her pregnancy, but went to term and delivered a healthy baby.

A year later Debra contacted me because her hair and her baby's hair were falling out. Hair loss is often associated with copper toxicity. A new hair analysis revealed that the copper level had risen to 18.4 mg%. One reason for this may have been that Debra was told by her doctor to continue taking her prenatal vitamin that was loaded with copper. I suggested discontinuing the vitamin, and I put her back on a regimen to balance her entire body chemistry. She was breastfeeding her baby at the time. Soon after she began this new program and stopped her incorrect vitamin supplement, both hers and the baby's hair stopped falling out.

Case #2. *Scott, age 45, had multiple seizures daily for thirty years that had not responded well to any form of treatment. He had tried medication, nutrition, chiropractic, homeopathy and other therapies. His entire life and that of his wife revolved around preparing for and handling his daily seizures. His first hair analysis revealed a four lows pattern and excessive mercury. Everyone with four lows also has hidden copper, another mineral often associated with epilepsy.*

It is rough going for Scott at times, because taking even one tablet of a nutrient that dislodges mercury, for example, can trigger an increase in seizures. Other toxic conditions may also be involved that upset his delicate system. I have had to change the program over the phone a number of times. However, after three years of working together, seizures activity is decreased, though still present. Scott is also much happier and healthier in other ways as well.

REPRODUCTIVE DISORDERS

Zinc and copper have much to do with reproductive health. Zinc is considered a *male mineral* because men need more of it, though women certainly need it, as well. Copper is called a *female mineral* because it plays a more important role in female fertility and in all female organ conditions. The fascinating connection between these two minerals and reproductive activity is explained more in Chapter 15. Sexual dysfunctions and aspects of development is a large topic discussed in Chapter 41. Sexually transmitted diseases are so subtle and common today that they can be impossible to diagnose and may cause many chronic and unusual symptoms in younger people, in particular.

Sexual and reproductive conditions may have a strong psychological component. For example, many children are abused sexually in very subtle ways that will never be discovered just by talking about one's feelings. The cause may be very subtle interactions between young children and their mothers and fathers, and perhaps siblings. While these imbalances can be corrected, it can take sometimes a few years of development therapy and other natural therapies, or even longer to slowly bring up various issues related to the reproductive organs.

In addition, all women, and some men, are very delicate creatures and the usual male-female interactions as teens and young adults can have quite severe consequences for this area of the body. In most women, for example, it is tense and often disfigured or distorted by age 30 or so due to various tensions that arise and remain in the pelvic area and the hips. Men can suffer such problems as well, which are only made worse by their nutritional and glandular imbalances.

Women under stress. Stress is intense today for most women. Traditional roles for women are changing. With this come new challenges and new expectations. While this may be politically incorrect to say, hair analysis demonstrates that women are different than men in terms of their energy level and how they tend to handle life and stress. When women assume the roles of men, it stresses their bodies even more. These women often "burn out" and develop adrenal exhaustion, depression and other serious symptoms.

In part for this reason, women today take most of the anti-depressants and other stress-related drugs in America and around the world. This is a serious issue because all drugs remain in the body and are passed on to the fetuses during pregnancy. Therefore, women are harming not only themselves, but in many cases they are damaging the next generation of babies by using these harmful substances with impunity.

In general, women require more rest, more peace and quiet, and more time with people than men. Someday soon I hope our society will realize this before most of our children develop ADD, autism and other serious disorders. If I seem hard on women, it is only because they bear the next generation of children. At the rate we are going, soon there won't be any healthy ones. This is a truly sad situation in America and around the world.

COPPER AND THE FEMALE REPRODUCTIVE SYSTEM

Copper imbalance is present in most, if not all female organ conditions. I am surprised that copper is not mentioned more frequently in this connection. Copper levels in the body tend to rise and fall with estrogen levels. Excessive copper may impair the hepatic detoxification of estrogen, allowing higher levels of estrogen to remain in the blood. Other mechanisms must also

be responsible for the link between copper and estrogen levels, though I have not seen them explored in any medical articles. Common causes of copper imbalance include:

- *Physical or emotional stress.* This affects the adrenals and tends to lower zinc.
- *Birth control pills and patches, and copper intra-uterine devices.* I consider these birth control methods quite insane due to their possibly lethal side effects.
- *A slow oxidation rate and especially adrenal exhaustion.*
- *Widespread zinc deficiency in food.* This is discussed in Chapter 15.
- *Vegetarian diets are usually very low in zinc and higher in copper.*
- *Other sources of copper.* These might include water pipes, fungicides, pesticides, and bathing in swimming pools and/or hot tubs treated with copper algicides.
- *Cadmium and lead toxicity, which can lower zinc levels and cause a low zinc/copper ratio.*
- *Congenital high copper.* Many children are born with high copper due to the nutritional imbalances of their mothers.

Conditions related to copper imbalance. A partial list of reproductive disorders that experience indicates are related to copper includes premenstrual syndrome, estrogen dominance, dysmenorrhea, amenorrhea, polycystic ovaries, endometriosis, uterine fibroids, ovarian cysts, yeast infections, miscarriages, morning sickness, toxemia of pregnancy and post-partum depression. Symptoms of many of these and others improve easily when the body chemistry is balanced. Some conditions respond quickly, such as hot flashes, most often without the need for hormones. Others, such as uterine fibroid tumors and ovarian cysts, take much longer to respond. Below are details on a few of them.

Premenstrual syndrome or PMS. This is almost a pure copper toxicity syndrome. Before the menstrual period, copper and estrogens rise in the blood and in the tissues. This tends to raise the sodium/potassium ratio on a hair analysis in most instances because this is the action of copper in the mineral balancing system. A rise in copper also tends to slow the oxidation rate in some cases by raising calcium and lowering potassium. The exact changes vary with each person. In a few cases, the sodium/potassium ratio declines, causing a different set of premenstrual symptoms. This appears to be rare, however. Different forms of PMS are discussed by Catherine Dalton, MD and others who have written about it in depth.

Symptoms of tension, headaches, acne, fatigue, sleep problems, breast tenderness and swelling, weight gain, moodiness or anger are similar to the symptoms of elevated tissue copper. If symptoms are severe, here are simple changes in a development program that can help:

1. For symptoms before the menstrual period: About a week or so prior to the menses:

- *Discontinue all products containing B-complex vitamins, as well as those containing adrenal and thyroid glandulars.* These products tend to raise the sodium/potassium ratio.
- *Increase the amount of zinc and vitamin B6.* For a week or so, one can safely take up to 120 mg daily of zinc and up to 1000 mg daily of vitamin B6 or pyridoxine-5 phosphate.
- *A day or so after the period arrives, go back on the regular development program.*

2. For menstrual cramps, if the above does not help:

- *Rest more, making sure you nap every day in addition to getting plenty of sleep at night.*
- *To relax the muscles, add extra calcium and magnesium to your program.*
- *If blood clots are a problem, eat more cooked vegetables. This may help by increasing your intake of vitamins C and K. Most greens are rich in these vitamins.*
- *When cramps subside, be sure to return to the regular development program.*

3. For symptoms with the period. For the first day or two of the menstrual flow, some women experience extreme fatigue and perhaps depression. This can be related to the drop in estrogens, progesterone and copper that occurs with the menstrual period. Do the following:

- *Stop taking all zinc and vitamin B6, since these lower copper.*
- *Increase your intake of vitamin B-complex, and adrenal and/or thyroid glandulars.*
- *Possibly, add copper at about 2 mg/day or a product from Endomet Labs called Limcomin at 1-1-1 or even 2-2-2 if the situation is severe.*
- *After two or three days, one can usually return to the regular supplement program.*

Eventually, both premenstrual and post-menstrual symptoms usually go away as the hormone balance improves and general body chemistry becomes stronger and more balanced.

Herbs and hormones for PMS. Dr. Eck preferred not to use natural progesterone or herbal remedies for PMS. These may work, but often delay deeper healing since they are somewhat toxic and they can unbalance general body chemistry. However, they are often better, if needed, than birth control pills, anti-depressants, Tylenol and other drugs used for PMS. For optimum health, especially avoid the birth control pill and patch, and anti-depressants for PMS.

Amenorrhea and irregular periods. Stress and nutritional imbalances cause many young women to stop menstruating or have very irregular periods. This is common in female athletes and some high school and college girls. These problems go away, providing the young woman is willing to rest and sleep more, eat better and take a few targeted nutritional supplements to balance her body chemistry.

Moon time. As health returns, most women's periods will align with the full moon. This is the correct time for the menstrual period, according to many ancient sources.

Heavy menstrual periods. This is often caused by a subtle hormone imbalance. It should correct in time. However, it may cause a young woman to lose a lot of nutrients and can therefore slow progress on a development program. A remedy to try if the problem continues more than a month or two while on a development program is to add black cohosh to the program. This older herbal remedy is not recommended often, but this is one case where it may be helpful.

Infertility. This is epidemic in Western nations and should be no surprise. Women's bodies are in such poor health, often despite a beautiful exterior, that pregnancy is actually dangerous and unwise. Fertility drugs are a poor answer. They are dangerous for the mother and may cause extremely unhealthy children. Restoring fertility naturally is easy in most cases. It

may take a few months to a year or more, depending on the state of health of the woman and her partner. Development also offers many other benefits. The most important is far better overall health for both mother and usually the child as well. Pregnancies and births are also often easier and much safer.

Menopausal symptoms. Menopause is not a disease, though it is too often treated that way. It is a signal that one is not fit enough to bear children any more. Menopause can reverse on a development program as a middle-aged woman regains her youthful vitality. This is disconcerting to some women, but it should not be. It simply means that she is producing more hormones and her body can now handle the stress of pregnancy better. The use of hormone replacement products for menopausal symptoms is not needed and quite insane in most cases. Restoring better health with development programs usually takes care of these symptoms easily, often within a few days to a few weeks.

Symptomatic remedies for hot flashes. One can use Thyro-complex from Endomet Labs at a dose of 1-1-1 or up to 3-3-3. If this is not effective, add chelated boron, about 3 mg up to 3 times daily. If this is not adequate, another product from Endomet Labs called Ova-adren often helps. The dosage is 1-1-1 or up to 3-3-3. I suggest these remedies before thinking about hormone replacement or phytoestrogen-containing herbs.

MEN'S HEALTH CONDITIONS

Zinc and men's health. Zinc deficiencies cause or contribute to most men's health conditions such as prostate enlargement, prostatitis, erectile dysfunction, and prostate and other men's cancers. Prostate cancer often responds well to natural healing methods including sauna therapy, Protocol and the Kelley metabolic cancer therapy. These are discussed in Chapter 35. Other causes of men's disorders include adrenal exhaustion and toxic metal accumulation in the prostate gland, testicles and in other structures. Diabetes, even in a mild form, can also cause erectile dysfunction in some cases.

Older men will have a slower response, in general, as more time is needed to detoxify the body and replenish nutrients. Recall that the zinc and copper levels on a hair mineral analysis are not the correct ways to judge zinc and copper status or a need for these minerals.

Testicular pain on development programs. Eliminating toxic metals from the testicles can result in temporary, but at times intense testicular pain. This is harmless and usually passes within a few hours to a day. Chapter 41 discusses other sexually-related disorders.

KIDNEY AND BLADDER CONDITIONS

Dr. Eck placed emphasis on the kidneys and frequently suggested a kidney support formula to help remove toxic metals. In Chinese medicine, the kidneys are considered the source of the chi or vital energy. They are closely related to the activity of the adrenal glands. Causes of kidney conditions include the presence of toxic metals, particularly mercury, cadmium and nickel. These are known to accumulate in the kidneys. Even some difficult conditions such as kidney stones, cysts, infections and renal failure may respond very well to development.

Assessing kidney activity. Hair analysis is often a much more sensitive indicator of kidney stress than standard blood or even x-ray exams of the kidneys such as pyelograms. Hair analysis indicators for kidney imbalances include:

- *A sodium/potassium ratio less than about 2.* This is also associated with chronic infections, kidney cysts, which are common, and a tendency for diabetes that often affects the kidneys.
- *Elevated toxic metals, particularly cadmium, mercury, nickel and lead.*
- *A sodium/potassium ratio greater than about 15.* This can indicate inflammation or other kidney problems causing sodium retention or potassium loss.
- *A very slow oxidation rate may indicate somewhat compromised kidney activity.*

Frequent urination. If the volume of urine output is high and urination is frequent, one must rule out diabetes. Urination is usually heavy at night if diabetes is present, but not necessarily. Other reasons for frequent urination are less important and include:

- *Toxic metal or toxic chemical elimination through the urine that irritates the bladder.* This occurs during development programs, at times.
- *A chronic infection may irritate the bladder or urethra.*
- *A 'nervous bladder', which means the bladder signals a need to empty before it is full.* This occurs somewhat more often in fast oxidizers and those with sympathetic dominance pattern.

Kidney stones. I am somewhat amazed that a development program can usually halt this painful and common condition. Here are comments about kidney stones:

- *Development can often help even when the condition is longstanding.* The program need not be altered in any special way when kidney stones are present.
- *Calcium supplements do not worsen kidney stone formation, and are often needed.*
- *No single hair analysis pattern appears to correlate well with kidney stones.*
- *Existing stones will slowly dissolve and will eventually pass, causing the familiar symptoms of kidney stones.* This is to be expected and is not a problem. If possible, a hospital may be able to break up the existing stones in the kidneys with ultrasound to prevent passing them.
- *If a stone passes, one may relieve symptoms by taking extra magnesium and vitamin B6.*

Kidney and bladder infections (nephritis, cystitis and urethritis). Most cases are easy to care for naturally. Causes include not drinking enough water, stress, fatigue, improper diets, imbalanced body chemistry and eating sugar or excessive carbohydrates. Sexually transmitted infections are everywhere, as are infections spread by swimming pools, hot tubs and even at public toilets. Rarely, other causes are important, such as an anatomical problem or a result of childbirth that may rarely be helped by corrective surgery.

Remedies for kidney and bladder conditions. For stubborn or recurrent bladder irritations and infections, and for some genital and kidney problems, try the following:

- *Vitamin A.* Adults can take about 100,000-200,000 iu daily for up to a week or so of natural vitamin A, or retinyl palmitate, but not beta carotene. Vitamin C in doses of up to 5-6000 mg daily may also help.
- *Genital baths.* These are often superb, and very safe. The procedure is in Appendix VI.

- *A single reddish infrared “heat lamp”.* This can be shined on the area for 10-20 minutes several times daily for a week or more safely. Move the lamp around and have it as close as possible to the area without burning yourself.
- *Avoid ALL sugars, fruit and fruit juices in the diet and rest a lot more.*
- *Drink at least three quarts of spring or distilled water daily and perhaps more.*
- *Avoid all irritating supplements and foods such as spicy or peppery foods.*
- *Chapter 44 discusses other excellent natural remedies for infections of all kinds.* If possible, do not use antibiotics, as most are quite toxic for the liver, and can damage the intestinal flora as well.

Flare-ups. During development programs bladder irritation may occur as toxic substances are eliminated through the kidneys and bladder. This may cause pain, burning and a frequent desire to urinate. More water is usually all that is needed and the symptoms will pass. Old bladder and genital infections will also flare up as they are healed with a nutrition program. Many people have chronic bladder and kidney infections, but are not aware of them.

THE IMMUNE RESPONSE AND INFECTIONS

Many doctors speak of the *immune system*. However, the body’s response to outside attack involves most body systems to some degree. Thus, I prefer to speak of the *immune response*, rather than calling it a system. Symptoms of an impaired immune response include recurrent infections, infections that won’t clear up completely, or a tendency to ‘catch’ whatever is going around. The immune response is also impaired in all cases of cancer, systemic yeast infection, chronic fatigue syndromes, chronic Epstein-Barr virus syndrome, Lyme disease if it is active, AIDS and many other chronic illness syndromes. Basic causes for infections include:

- *Deficient diets and particularly a zinc deficiency.* Zinc, along with many other nutrients, is critical for the immune response.
- *Uncleanliness, including contaminated foods and beverages.* Do not eat raw eggs, raw meat or any raw food in a restaurant. Always wash food, especially that which comes from outside the country. Do not drink water from a stream or lake without first boiling it.
- *Lowered energy levels and fatigue.* As energy improves on development programs, chronic infections are often brought from a chronic state to an acute state and then resolved. Sauna therapy and the use of coffee enemas causes this to happen much faster.
- *Sympathetic dominance.* This hair analysis pattern is associated with inhibition of the immune response due to excessive activity of the sympathetic nervous system.
- *Overuse of antibiotics.* Antibiotics are rarely needed. Their overuse has spawned many drug-resistant strains of bacteria, viruses and fungi. Also, antibiotics are toxic and can weaken the immune response, in some cases.
- *Bioterrorism.* One can deny this, but those who investigate it know that it is going on in America and elsewhere. Those perpetrating it would prefer we are not aware of it.
- *Swimming in pools and worse, using hot tubs except perhaps your own.* Pools and hot tubs are ideal breeding grounds for infections. Chlorine, bromine, copper, ozone, silver and other ways to sanitize hot tubs cannot kill all the pathogens. Perhaps 35% food grade hydrogen peroxide is best at 200-250 ppm.

- *Airplanes, theatres and other closed, crowded spaces.* If you are susceptible to infections, avoid these and other locations where you are forced to breathe stale, recycled air.

Hair analysis indicators for acute and chronic infections include:

- *A sodium/potassium ratio less than about 2.* The lower the ratio, the greater the tendency for an impaired immune response. A *double low ratio* pattern is an even more important indicator. It consists of a low sodium/potassium ratio and a low calcium/magnesium ratio. Several hair tests may be required before a low sodium/potassium ratio reveals itself. On an initial analysis, the sodium/potassium ratio may appear normal, but a calcium/magnesium ratio may be low. On subsequent retests, as the calcium/magnesium ratio normalizes, the sodium/potassium ratio may become low.
- *Toxic metals.* In particular, mercury and cadmium toxicity are often found in those with immune deficiency syndromes. These toxic metals replace zinc, selenium and other essential minerals in enzyme binding sites and damage the immune response in many subtle ways.
- *Copper imbalance.* The presence of any indicators for hidden copper imbalance often indicates an impaired immune response. Excessive copper interferes with zinc metabolism and destroys vitamin C. Copper is also needed for the electron transport system, a critical part of the body's energy system.
- *Slow oxidation.* All slow oxidizers do not generate adequate adaptive energy. This also contributes to immune response dysfunction.
- *Glucose intolerance.* This causes low energy and impairs the immune response. For example, insulin therapy has been used with success for people with cancer. The insulin assists the body to utilize sugar to generate the energy necessary to activate the body's defense systems. This is very different from insulin potentiation therapy or IPT. The latter is a cancer treatment involving small doses of chemotherapy. I do not recommend this cancer therapy. In my limited experience, it may produce fast results, but they do not last too long.

AIDS. This condition is actually one of the easier ones to handle with development. The only proviso is the patient needs to do the entire program including the diet, nutritional supplements, proper drinking water, coffee enemas, saunas and lifestyle changes. The sauna alone is excellent to boost the immune response. Several patients have been virus-free for several years without any recurrence of symptoms.

Acute and chronic hepatitis. These respond very well to development programs. Many people are amazed that chronic hepatitis C is not difficult to eradicate by improving the immune response of the body. I consider chronic hepatitis C just another opportunistic infection. Iron toxicity is always a factor in hepatitis. The use of coffee enemas is excellent and sometimes crucial for healing hepatitis, in part for their ability to help mobilize excess iron from the liver.

Symptomatic remedies that may be helpful include high-dose vitamin C, even intravenous vitamin C if all else fails. A treatment that does NOT work well, though it is good for other infections, is intravenous hydrogen peroxide. This is because the peroxide does not clear the iron from the liver, as do vitamin C and development programs.

Candida albicans or chronic yeast infections. This is almost universal in modern America, in particular. The causes include too much sugar in the diet, copper imbalance, an

overly-alkaline intestinal tract, sluggish bile flow, improper bowel flora, and a weak and depleted body chemistry. Slow oxidizers are particularly prone to all fungal infections, which are more cold or yin.

Symptoms vary from none at all to fatigue, cravings for sweets or starches, pain between the shoulder blades, diarrhea, bloating, intestinal gas, brain fog, food sensitivities and possibly others. Development works much better and more permanently than most other anti-candida regimens because it addresses the deeper causes, not just the yeast organisms, which are mainly opportunists in the intestines. The yeast problem almost always goes away on its own, without the need for anti-candida remedies or drugs.

In rare cases, natural anti-candida remedies are helpful for a while, until the body can control the yeast overgrowth itself. Garlic capsules or caprylic acid work excellently in most cases, but are rarely needed. Others include colloidal silver, bee propolis and for some uses, tea tree oil. Prescription anti-fungal drugs such as Nystatin and Nizoril are quite toxic and I have never needed them. They should be used only as a very last resort and are probably little if any better than natural anti-fungal remedies.

Flare-ups or retracing of infections. All infections can flare up during development programs as they heal. Chapter 45 discusses this topic in more detail.

Parasites. These are very common and cause varying degrees of discomfort and illness in most people. Liver flukes, borrelia (which causes Lyme disease) and trichina cysts and worms are almost universal. Lyme disease parasites come from tick bites, though they can be spread easily by other means, even dirty toilet seats. Trichina comes from ingesting or even handling any products from pigs, including most sausage, lard in tamales and, of course, pork and ham. Other very common parasites are the various species of amoebas, especially among Mexican immigrants and others from tropical nations, in particular. Other common parasites are round and flat worms of various types such as hook worms and tapeworms.

Most parasites live in the intestines, though most can burrow through the walls of the intestines and migrate throughout the body. Parasitic infections occur most often among people who have traveled outside America or Western Europe, or who work with or spend a lot of time with immigrants from Mexico or other undeveloped nations. In medical school, I was taught that 98% of these populations probably carry parasitic infections. Most are not bothered by it too much, but they can transmit it easily, even just shaking hands if the hands are not clean.

Correction. An unhealthy body is difficult to rid of parasites and other infections. A very healthy, yang body does not support their growth much at all. Parasite clearing with development is slow and steady. Medical drugs or herbal treatments are helpful in a few cases when the amount or type of parasites are severe. Otherwise, the gentle development method is much less toxic and works well using a combination of methods:

- *Very little raw food.* This removes an important source of infection, especially in restaurants.
- *No food products from pigs.* Unfortunately, all of these may be contaminated, even if well-cooked. For this reason, I suggest avoiding all pork, ham, bacon, sausage, lard and others. The only exception is porcine pancreatin, which appears very safe and is used in GB-3.
- *GB-3.* This product contains powerful pancreatic enzymes that can digest and destroy hundreds of different parasitic organisms in the intestinal tract. This is an important reason

why I much prefer this product over all the other digestive aids for everyone, unless they cannot take it due to diarrhea or some other reason.

- *Making the body more yang.* Parasites thrive best in a yin environment. Development corrects this condition slowly in a person's body, providing a person avoids most sugars, sweets, fruits, fruit juices, food additives, random supplements, and most herbs and drugs. Plenty of rest and sleep are also critical.
- *Improving vitality.* This helps the body fight off all parasitic and other infections.
- *Sauna therapy and coffee enemas.* Saunas heat the body a few degrees, which stimulates the immune response. Some parasites are also weakened or killed by a higher body temperature. Saunas also greatly improve circulation, which helps flush parasites out of hiding. Coffee enemas or colonics clean the colon and greatly assist liver detoxification.

Drugs and other remedies for parasites. When needed, medical drugs and herbs are helpful, though most are somewhat toxic. A good product is called *Clear* made by the Awareness Corporation. Another gadget that may help is the zapper recommended by Hulda Clark. Her herbs, however, are too toxic and I have heard of too many problems with their use.

Use of hydrogen peroxide as a disinfectant. To prevent and even treat some infections, an interesting method, especially in hot tubs and swimming pools, is to add about 200 ppm of 35% food grade hydrogen peroxide to the water. Hot tubs require about a cup per week, while pools will require several gallons weekly. Food grade 35% hydrogen peroxide is available on the internet. It must be handled with care, but is an excellent disinfectant. Otherwise, I suggest avoiding hot tubs or pools due to the risk of sexually transmitted and other diseases that are everywhere. They are easily spread in pools and hot tubs, no matter how much chlorine, bromine, silver or other disinfectants are used.

So-called autoimmune disorders. This group of illnesses includes rheumatoid arthritis, lupus, Hashimoto's thyroiditis, scleroderma and several others. I am not sure if these are really a separate class of diseases, as medical science asserts. They may simply be special cases of toxic metal poisoning and tissue breakdown. They respond well to development programs in many, but not all cases. Earlier cases are generally easier to work with.

Multiple chemical sensitivity or MCS. This was formerly known as environmental illness. It is common and development is very helpful, providing the client is willing to:

- *Go through some healing reactions, which can be difficult for these clients.*
- *Do coffee enemas and use a near infrared sauna every day.* These can be extremely helpful, especially if the person cannot take many supplements.
- *Tolerate occasional food and supplement reactions.* One must be willing to tolerate a few of these for a while. This may be discouraging. However, they will cease as health returns.

COMMON NEUROLOGICAL DISORDERS - EPILEPSY OR SEIZURE DISORDERS

Epilepsy or seizures is a serious medical disorder that often responds well to development science. By correcting the causes, most epilepsy will be brought under permanent control, usually without a need for medication. Causes for seizures include:

Chronic infection in the brain, perhaps indicated by a low sodium/potassium ratio.

- *Necrotic or dead tissue, or other unusual lesions in the brain, perhaps indicated by imbalances in minerals such as selenium and zinc.*
- *Toxic metal accumulation, especially copper and mercury.* However, others may contribute as well. The toxic metals can replace sedative minerals, such as calcium, magnesium and zinc. Copper and mercury may enhance excitatory neurotransmitter production.
- *Very fast oxidation may cause some febrile or other seizures in babies and young children.*
- *Toxic chemicals can possibly cause seizures.* Although they are not revealed on hair tests, development programs will slowly remove hundreds of toxic chemicals.
- *Food chemicals can cause seizures.* One must temporarily avoid the offending food. However, development can often reduce many food sensitivities.
- *Other macromineral imbalances can cause seizures, such as very low calcium or magnesium.*
- *Other, rare causes of seizures include head trauma, chiropractic misalignments and brain tumors.* These should be ruled out.

Extra nutrients for seizures. Due to the severity of the seizure problem, a larger supplement program may be better. One can add the following extra nutrients in most cases:

- *ICMN.* This product from Endomet Laboratories contains inositol, choline, methionine and niacinamide. This can assist liver detoxification and may have sedative effects as well. It contains methyl donors that may help relax the adrenal glands in complex ways.
- *L-Taurine, and extra vitamin B6 and magnesium.* These can also reduce seizure activity.
- *GABA, valerian and other products may also be helpful if the regular development program is not enough to control the seizures.* However, fewer supplements are best for restoring overall health and biochemical balance, so do not use extra products unless needed.

HEADACHES

Norman, age 65, suffered from migraine headaches for over 40 years. They would incapacitate him for several days at a time, in spite of using drugs, to which he had become addicted. He is a natural healing practitioner and had tried many kinds of therapies over the years. His hair analysis indicated extreme copper toxicity with a copper level of ten times normal. At first, I suggested just a diet and nutritional supplements, but this was not enough. Several years later, I convinced him to build himself a near infrared light sauna. This was the deciding factor. Norman is now off all medication and his headaches seldom recur.

Headaches are generally quite easy to resolve with development science, combined with chiropractic, postural correction, foot reflexology, and occasionally other tension release or other detoxification methods. Causes of headaches include:

- *Toxic headaches.* These are the most common ones and may be due to toxic metals, bowel or liver toxicity, constipation, toxins from infections, or lack of rest that impairs detoxification.
- *Copper imbalance.* These affects women more often, and occur more commonly before the menstrual period. They are often one-sided and migraine types of headaches.

- *Tension headaches.* These are due to poor posture and usually tension in the neck and back. They are also often secondary to nutritional imbalances such as low levels of available calcium, magnesium, potassium, zinc or perhaps other essential nutrients.
- *Allergic headaches.* Allergic reactions to food or food chemicals may cause headaches.
- *Chronic sinus congestion or infection.* This is a common cause of frontal headaches.
- *Blood sugar imbalance.* Allowing the blood sugar to fall too low often causes headaches.
- *Dehydration.* This affects detoxification and many other body functions. Often, more water or a different type of drinking water solves these easily.
- *Vision problems.* These include incorrect eyeglass prescriptions, a need for glasses, and eyestrain due to eye diseases, reading without enough light, squinting or other causes.
- *Retracing* during development programs can involve headaches. These usually pass quickly, although they can occasionally be severe. Coffee enemas or extra sauna sessions may be very helpful. The use of Tylenol or other drugs can prolong headaches.
- *Other.* One may need to rule out chiropractic or cranial misalignments, and more rarely vascular abnormalities, brain infections such as with parasites, or tumors.

Correction of headaches. Correcting the cause of the headache usually takes care of it quickly. For severe toxic headaches, bowel cleansing and saunas are necessary to rid the body of deeply-buried toxins. Other simple, safe remedies that I have found helpful include foot reflexology and Epsom salt baths. Reflexology can be amazingly helpful, at times. When rubbing the feet, rub deeply all around the toes on both feet. One will often find tender spots that, when rubbed enough, can diminish the severity of a headache. Hot baths, especially with Epsom salts, relax the muscles and may promote detoxification.

NERVOUS IRRITABILITY OR ANXIETY

This condition is extremely common and is discussed in Chapter 38. It is usually easy to handle with development science.

32.

DENTAL DISORDERS, ARTHRITIS, OSTEOPOROSIS AND OTHER CONNECTIVE TISSUE AND NEUROMUSCULAR CONDITIONS

Reinhold, age 67, fractured his ankle, which did not heal. A year later, in an attempt to assist healing, his doctor fused the bones of the ankle. However, this did not heal, either. As a result, Reinhold was restricted to a wheelchair. His first hair analysis revealed a zinc level of 11 mg% (ideal is 16-20) with a sodium/potassium ratio 0.9 (the ideal is 2.5:1). This low ratio indicates exhaustion and excessive tissue breakdown, the opposite of what is needed for healing. Also, cadmium was 12 times normal, lead was 8 times normal, mercury was twice normal, aluminum was 50 times normal and nickel was 6 times normal. These all can interfere with key enzyme systems needed for wound healing. Cadmium is probably the most harmful, interfering with zinc metabolism. The combination of low zinc and high cadmium is even worse, since adequate zinc is essential for protein synthesis needed for wound healing.

On a development program, Reinhold's pain decreased in a few weeks. The fracture and the fusion of the ankle healed, and he regained his ability to walk. His general health and strength also increased. Reinhold's second hair analysis revealed even higher levels of mercury, cadmium and aluminum. Meanwhile, his zinc decreased to 8 mg % and his sodium/potassium ratio worsened to 0.2. On his third hair test, the toxic metals began to decline. However, the zinc decreased to 6 mg% and the sodium/potassium was still only 0.64. By this time, one year had passed. Reinhold was up and walking, with no need for even a cane. He had also changed emotionally. His family reported he is happier, more stable and gets along much better with others. Sadly, at this point Reinhold decided to stop the program. This is all too common that people stop a healing program because their immediate symptom improves, yet their body chemistry is still far from ideal.

DENTAL DISORDERS

Infections. Chronic and usually hidden dental infections often spew highly toxic bacteria and other chemical substances into the bloodstream. This, in turn, affects the entire body. Weston Price, DDS, a pioneer in nutritional approaches to illness, noted the impact of dental infections on general health in his classic book, *Nutrition And Physical Degeneration*. Joseph Issels, MD, a German cancer specialist, wrote that many cancer patients got well when all root canal-filled and other infected teeth were removed.

Sources of dental infections. These include 1) seemingly healthy teeth that may have hairline cracks or old fillings, 2) root canal-filled teeth, 3) cavitations or sites of former dental

procedures, and 4) possibly gum disease. However, the organisms involved in gum disease are not usually as toxic. These subtle, hidden infections are often ignored because:

- *They may give few obvious signs or symptoms.*
- *They often do not show up on x-rays, so they are difficult to identify.*
- *Once found, they can be difficult to eradicate with standard methods.*
- *Most dentists are not trained to look for them.*
- *Many people ignore minor dental discomfort.* They are often not aware of its significance and some don't want to spend the money going to dentists.

How to tell if a dental infection is present. Possible clues include some pain or sensitivity. It is more likely if it is in a root canal-filled tooth or an area where you have had extensive dental work. X-rays might be helpful, but they must be read very carefully and they will miss some hidden infections. Dentists familiar with these infections may use other methods such as electroacupuncture or other devices to find them, but finding such a dentist is not easy.

What to do about chronic dental infections. They need to be resolved. Development, and particularly the continued use of the near infrared sauna, may help a lot. One must use the sauna for at least half an hour per session and move your jaw area as close to the lights as possible for 5 minutes at a time, which is simple to do. This may take care of some cavitations without surgery, and perhaps some infected teeth as well. With root canal-filled teeth, the tooth may need to be removed if it is infected. Some severe cavitations may require surgery to clean them out. Gum disease is discussed later in this chapter.

If antibiotics are recommended for dental procedures, I have found that high quality colloidal silver may work as well without the side effects of most antibiotics. One can take the silver by mouth and leave it in the mouth next to the infected tooth until it is absorbed. Be sure to take enough of a good product.

TOOTH DECAY. Causes for dental decay include:

- *Lead toxicity.* This is extremely common and weakens bones and teeth.
- *Sugar consumption.* Any at all, even fruit sugars, upsets calcium metabolism, according to the research of Dr. Melvin Page, DDS.
- *Low available calcium.* Most dairy products and other sources of calcium are cooked, which renders them less bioavailable. Raw, certified dairy products, along with fresh carrot juice, are excellent calcium sources.
- *Deficiencies of other trace minerals.* These include bioavailable copper, manganese, boron, zinc and perhaps several others.

Fluoride treatments. Please avoid this toxic dental procedure, especially for babies and young children. Parents must monitor their dentists to make sure about this. Children get too much fluoride already in their food, and especially in beverages.

The use of water fluoridation. Except for America and Great Britain, the entire world has abandoned adding toxic fluoride to their water supplies. Fluorides are extremely toxic substances that contributes to hip fractures, hypothyroidism and even cancer and birth defects. Their benefit for the teeth has been overstated and many studies show no benefit whatsoever. If you want extra fluoride, drink tea, which is naturally high in a more bioavailable form of this

mineral. I strongly suggest avoiding all fluoride in tooth pastes, mouthwashes and in your drinking water. This controversial topic is discussed in greater detail in Chapter 18, in an article at www.drlwilson.com and at other sites critical of water fluoridation.

MERCURY AMALGAM FILLINGS

The standard material used to fill cavities for the last 150 years is a mixture of mainly mercury and copper, along with some silver, cadmium and other metals. Some 50 million of these fillings are placed each year in America alone. The compound is called an amalgam. It is similar to an alloy except that the metals are mixed at low temperature. Amalgam dental fillings are one of the worst features of post-modern dental care. Problems with amalgams include:

- *The intense toxicity of mercury.* Mercury in any amount is very toxic. Each time one bites down on an amalgam filling, a small amount of mercury is squeezed out. It often moves easily to the nasal passages and into the brain, one of the organs most vulnerable to mercury toxicity.
- *The metals separate out after a number of years, releasing mercury, copper and other toxic metals into the mouth.*
- *To place the filling, the tooth must be hollowed out, weakening it significantly in some cases.*
- *The filling provides no extra strength to the tooth, and cracked teeth are a common result.*
- *The filling is electrically conductive, which causes subtle problems in many people.*
- *The filling contains dissimilar metals.* This can cause the production of random and often harmful electrical currents and even radio waves in the mouth, very near the brain.
- *The metal filling is also likely to alter the acupuncture meridian that passes through it.*
- *Placing amalgams is very toxic for the dentist and all of his staff.* It makes dentistry the most toxic branch of the medical profession, with shorter life spans and suicide problems as well.

Amalgam removal. If possible, remove all amalgams from your mouth as soon as possible, except if you have active cancer. A few tips and cautions in regard to amalgam removal are:

- *All fillings need not be removed at once.* If funds are limited, have them removed as you can afford it. Dental insurance may also pay for amalgam removal.
- *If a holistic or biological dentist is not available or too expensive, any good dentist can do the work.* Extra suction and a rubber dam to protect you from mercury vapors are excellent ideas. Some dentists also offer blood tests for allergies to various dental materials. This is great, but not needed in every case.
- *Some people become ill during or after amalgam removal.* I have observed that people on development programs tend to do well. Those on other nutritional regimens may not fare as well.
- *Do not remove amalgam fillings if one has active cancer.* This can be fatal. Wait until the cancer is definitely in remission.

Nickel crowns. Some years ago, crowns were made of about 75% nickel. They may be white or metallic in color. Unfortunately, nickel is highly toxic. It is still used in some dental wires and appliances. If your health is not improving on a development program, this may be

one reason. If you have dental crowns, try to find out if they made of nickel and, if so, have them changed as soon as possible.

Novocain and other dental anesthetics. Novocain is not a highly toxic substance. However, some people react adversely to it. It also remains in the body for years. On a sauna therapy program, several people have reported areas of the face becoming spongy and numb in the same location where Novocain had been injected, often years before. The numbness passed in a few days or less. This is an interesting example of a drug retracing reaction.

Allergies to dental materials. Before placing fillings and other dental materials in your mouth, some dentists suggest a blood test to check if you are allergic to certain dental materials. This is not required for most people. However, if you are very sensitive to metals, plastic resins and other materials, consider this option.

Temporo-mandibular joint or TMJ problems. Misalignment of the temporo-mandibular joints, just below the ears, can cause fatigue, headaches, neck aches, facial ticks, disturbed sleep and other symptoms. Stress on this joint is common. It may be due to generalized tension, an imperfect bite, missing teeth, dental appliances, accidents, poor posture or other causes. It may go away slowly with a development program. At times, other cause must be addressed.

GUM DISEASE OR PERIODONTITIS

Inflammation and often infection of the gums is very common today. Development will usually eliminate this problem, though it may take a while if the condition is chronic or severe. Symptomatic relief often occurs quickly using 35% food grade hydrogen peroxide and baking soda mixed together. This is far more physiological than mouthwashes that contain alcohol, for example, which irritates the gums. Another approach that works well for some people is the blotting technique. Dr. Joseph Phillips, DDS, developed this simple and inexpensive method many years ago. For more information about it, call the International Oral Health Society at (715) 839-9103. If these simple methods are used for gum disease, surgery should rarely, if ever, be needed.

OSTEOPOROSIS

Development can identify and correct hidden causes of this condition, which cannot generally be diagnosed by x-ray. They include:

- *Calcium deficiency.* Quality sources of calcium are difficult to find today, thanks to stupid laws that forbid the sale of certified raw dairy products. These laws are entirely politically motivated to help farmers whose milk is not clean and who therefore want all milk pasteurized. However, heating the milk damages the proteins and the availability of calcium in the milk products. Other sources of calcium are carrot juice, kelp, raw carrots, sesame seeds, almonds and a few other foods that most people do not eat in great enough quantity.
- *Biounavailable calcium and magnesium.* This occurs in most slow oxidizers. It is often indicated by a hair calcium level greater than about 80 mg%. The higher the hair calcium, the more likely some of it is precipitating out of the blood into the soft tissues. The body

then robs calcium from the bones to replenish the blood, slowly depleting the bones of calcium.

- *Low hormone levels.* Slow oxidation, in particular, is often associated with low levels of estrogen, progesterone, testosterone and other essential adrenal, testicular and ovarian hormones. One of the actions of these hormones may be to protect one from osteoporosis.
- *Low levels of hydrochloric acid.* This leads to general malnutrition and specifically impaired calcium absorption, which requires adequate stomach acid.
- *Copper imbalance.* Copper is needed to retain calcium in the bones. Both fast and slow oxidizers often have a copper imbalance.
- *Manganese, zinc, boron, vanadium* and other minerals all play a part in bone health and in the prevention of osteoporosis. Most diets are deficient in these minerals.
- *Lead toxicity.* This is an important cause of osteoporosis. Lead replaces some calcium in the bones, weakens them and often some lead leaches out of the bones as one ages. Lead will not show up on Dexascans because it is radio-opaque. It will also not be revealed on most toxic metal tests, including most initial hair analyses, because it is hidden deep in the bones.
- *Fluoride poisoning.* Fluoride is a common contaminant in our food, water, and even in the air in some areas due to smokestack emissions. Fluoride is also radio-opaque, so it can skew x-rays of the bones. However, it weakens the bones and is associated with a greater incidence of hip fractures, for example.
- *Tissue catabolism.* A low sodium/potassium ratio and/or a low phosphorus level can indicate some breakdown of the protein matrix of the bones that holds the calcium in place.
- *Other toxic metals such as cadmium, arsenic or mercury.* These may also displace some calcium in the bones, leading to weakness. They can also inhibit protein synthesis and impair general health.
- *Sedentary lifestyles and lack of exercise* play a role, but less so if body chemistry is balanced.
- *Celiac disease* or gluten sensitivity is an occasional hidden cause of osteoporosis. See page 314 for more on this important condition.

These causes are slowly corrected on a development program. To hasten correction, an excellent product is microcrystalline hydroxyapatite complex or MCHC. This bone extract may help replenish minerals faster. MCHC may be given to all post-menopausal women or anyone else at risk of osteoporosis in place of calcium chelate, citrate or others, as it may be slightly more helpful. If one substitutes MCHC for Paramin, which is fine, one must also supplement with magnesium because MCHC does not contain much magnesium.

ARTHRITIS

The joints are bathed in a fluid that lubricates them and repairs wear and tear damage that occurs every time the joint is used. However, circulation is poor and stress is high on some joints, which often causes inflammation. Medical doctors basically classify arthritis as *osteoarthritis* or *rheumatoid arthritis*. Osteoarthritis is characterized by bone spurs and calcium deposits. Rheumatoid arthritis is a more destructive process, in most cases, with fibrous tissue growing into the joints, often causing deformity. Pain also can migrate, regress and advance. A properly interpreted hair analysis can identify the following possible causes for arthritis:

- *Biounavailable calcium may move out of the blood and deposit in the joints.*

- *Toxic metals.* These may not be revealed on any type of test.
- *Sluggish adrenal activity.* This can cause low levels of anti-inflammatory steroid hormones such as cortisol and cortisone. If this is the cause, symptoms may be worse upon awakening or after sitting still. They improve with activity and then may worsen again in the evening as the adrenal glands become more fatigued.
- *A low vitality level.* This impairs the ability of the body to regenerate joint surfaces in response to normal wear and tear. This is a problem for those with a very slow oxidation rate or other indicators of low energy such as a low sodium/potassium ratio or a low phosphorus.
- *Inflammatory patterns.* These include a high sodium/potassium ratio or iron toxicity, for example. Iron plays a role in many cases of arthritis. Elevated manganese or aluminum levels indicate hidden iron toxicity in many cases.
- *Low phosphorus on a hair analysis.* This indicates low vitality and perhaps impaired protein synthesis that inhibits regeneration of joint surfaces.
- *Zinc and other nutrient deficiencies.* Zinc is needed for the synthesis of protein structures including joint cartilage. Zinc is also needed to make all the digestive enzymes so that one can absorb most nutrients. Zinc, bioflavonoids and omega-3 fatty acids are also important anti-inflammatory nutrients that are often in short supply in those with any inflammatory condition.
- *Protein catabolism.* A catabolic state of body chemistry often affects the joints. A hair analysis may reveal a low sodium/potassium ratio or a low phosphorus level. Fast oxidation with a low sodium/potassium ratio is a pattern for rheumatoid arthritis, according to Dr. Eck.
- *Trauma.* The joints are relatively delicate structures. They are damaged by falls, car accidents, poor posture, too much weight on them, too much stress due to athletic activities or heavy lifting, and by spinal misalignments and other chiropractic and soft tissue damage that affects their alignment and mobility. Often weight is distributed unevenly on the joints and this alone will cause arthritis. Poor posture and general tension commonly cause neck strain, for example.
- *Food reactions and other allergies.* Reactions to foods and other substances can affect the joints. Citrus fruits, especially unripe citrus, and the nightshade family of vegetables (tomato, potato, eggplant and all peppers) often cause or worsen joint pain. In some people, red meat may increase inflammation due to its higher iron content.
- *Infections and other toxins.* These causes are less common, in general. Tuberculosis and other infections can destroy the joints, as can certain chemical toxins.
- *Retracing.* During development programs, joint pain may temporarily occur as toxins are dislodged from the joints and surrounding tissues.

Development programs are superb for assisting in the correction of many types of joint pain. In particular, the near infrared sauna's gentle heat dramatically improves circulation, and the infrared penetrates into the joints to enhance healing. Cleansing the colon assists with the removal of toxic substances that often contribute to joint problems.

Fibromyalgia. This painful condition is an inflammatory condition of the joints and muscles, in particular. It usually occurs in slow oxidizers with copper toxicity. Copper imbalance is often related to inflammation and pain in the soft tissues of the body. Emotional factors such as fear and loneliness may also be important contributors, along with toxic metals such as mercury. Fibromyalgia can respond well to development. The adjunctive therapies

including the Roy Masters meditation, sauna therapy and coffee enemas or colon cleansing are often extremely helpful and are often required to reverse fibromyalgia.

Muscle cramps and spasms. Hair analysis patterns seen with muscle cramps include:

- *High or low calcium and magnesium levels.* High levels often reflect some degree of bioavailability of these minerals. Low levels often reflect deficiency states. Magnesium is also depleted by exercise, which can cause muscle tightness and cramps.
- *Low sodium and potassium levels* are also associated with muscle cramps. Potassium is required for muscle relaxation, and low levels of these minerals reduce the bioavailability of calcium and magnesium.
- *Toxic metals* are frequently also associated with muscle cramps.
- *Low energy and poor circulation, as found in the sympathetic dominance pattern.*
- *Retracing.* Muscle cramps may occur during development programs as the body eliminates toxins from the legs, in particular. They are usually mild and pass quickly.

Besides a development program, severe muscle cramps or tightness may be helped by extra calcium and magnesium, vitamin E, niacin, ginkgo biloba and techniques such as massage and warm baths with Epsom salts. More saunas and other methods may also help.

Tendon and ligament problems. Low energy states, inflammation patterns, copper imbalance, and manganese deficiency are often associated with ligament and tendon problems such as tendonitis and bursitis. Muscles that are weak or inflamed due to low energy, toxic metals and other causes do not pull evenly, leading to structural imbalances and chiropractic misalignments. Chiropractic adjustments may not hold in people with these imbalances.

Non-union of fractures and slow healing. Wounds and fractures that are slow to heal respond extremely well to development. Many imbalances discussed in this book will affect the rate of healing of wounds or injuries. Improvement is often very rapid when the correct nutrients are provided and when the diet is appropriate for the oxidation type. Refer to the case at the beginning of this chapter for an example of how healing can be facilitated.

NEUROMUSCULAR DISEASES

These include Parkinson's disease, multiple sclerosis, amyotrophic lateral sclerosis, scleroderma, sarcoid disease, lupus and perhaps a few others. Toxic metals and *mental exhaustion* tend to be involved with all of them except sarcoidosis. Development can help with all of them, especially if caught early. In late cases, as with some other diseases, a person's vitality declines so much that reversing the process is more difficult. Here are some general principles that may help practitioners who deal with neuromuscular and other chronic illnesses related to them:

- *Restoring vitality is all important.* This means more attention to the diet, the right type and amount of drinking water, and all aspects of the lifestyle such as plenty of rest and sleep.
- *Restoring oxygenation and hydration of the body are often essential to build vitality.* For this reason, oxygen therapies may be helpful such using an ozone air purifier in the bedroom,

ozone steam baths, soaking in ozone, baths with a cup of 35% hydrogen peroxide, deep breathing exercises, drinking oxygenated or ozonated water or even breathing concentrated oxygen for a few minutes to a few hours daily. See the Resources in Chapter 49 and Appendix VI for more about these therapies.

- *Improving digestion with a digestive enzyme product such as GB-3 is essential, as much of it as can be comfortably tolerated up to about 3 per meal.*
- *Other areas that may need attention are food sensitivities, removal of all dental amalgams and nickel wires and dental appliances.* Some crowns were made of 75% nickel and these might need replacing as well.

Parkinson's disease. Mercury, lead or manganese toxicity often play an important roles in this condition. Constipation has been reported to play an important role in some cases. The symptoms of manganese toxicity closely resemble the symptoms of Parkinsonism. Early cases can respond extremely well with development.

Multiple sclerosis. Mercury toxicity, sympathetic dominance pattern, gluten sensitivity and perhaps a more serious vitamin D deficiency appear to always be involved in this condition. In addition to extra vitamin D, I suggest adding Renamide 3-3-3 and a food-based selenium 100 mcg three times daily for these clients, to help with mercury and other metal toxicity. Early cases often respond excellently to development. More advanced cases present more difficulty, often because vitality is very low.

Interesting qualities of *sympathetic dominance pattern* are present with multiple sclerosis, even if this hair mineral pattern is not revealed on early mineral tests because it is masked by other imbalances. These qualities include 1) heat sensitivity and 2) a relentless type of mental efforting. The particular type of mental drive may be associated with greater intelligence mixed with a strong will, and a desire to overcome situations using the will.

These same traits are also found in many multiple sclerosis patients. They unfortunately cause this illness to be more difficult to heal since excessive sympathetic nervous system activity severely impairs all healing. If, however, a person who has MS learns about the qualities of sympathetic dominance pattern, this may assist a process of letting go mentally that is often extremely helpful in these cases to relax the nervous system and allow full healing to occur.

Lupus and amyotrophic lateral sclerosis or ALS. Those with lupus can do extremely well with development programs, even more advanced cases. Those with early amyotrophic lateral sclerosis, or Lou Gherig's disease, can also respond well with development, especially when they add the detoxification procedures such as sauna therapy and coffee enemas or colonic irrigation.

Scleroderma. This can be mainly a copper toxicity syndrome and may involves a bioavailable manganese deficiency. It can respond well to development science if a person will do the entire program and stay with it for a few years.

33.

SENSORY ORGANS, SKIN, HAIR AND NAIL CONDITIONS, PAIN AND INFLAMMATION

Karrie, age 40, visited the emergency room several times each week with intractable head pain that required intravenous pain killers. These episodes had occurred for several years since a brain surgery to repair an aneurysm. Ten years before, she had also contracted Hodgkin's disease that was treated with chemotherapy. I was not too hopeful that I could be of help. However, Karrie responded excellently to a development program, along with many colonic irrigation treatments. Within a year she had stopped all visits to the emergency room. Her neurologist kept me informed of her progress. She was only on a development program for about two years and has remained fairly pain-free for the past 12 years. The program was done completely 'long distance' by mail and telephone.

SENSORY CONDITIONS

Vision disorders. Zinc imbalance is involved in most eye disorders. It is especially important for the retina and fovea. Zinc deficiency can cause inflammation, irritation, and oxidant and other damage to the eyes. Eye doctors are the only physicians that often prescribe zinc, along with anti-oxidants, to their patients. Perhaps this is because they can observe the improvements clearly when supplements are given. Eye conditions also have to do with liver toxicity, according to ancient Chinese acupuncture theory.

Eye infections respond well to development. Chronic ones may take longer. A single reddish heat lamp can be shined on the closed eyes for a maximum of five minutes at a time, several times daily. The gentle penetrating infrared rays may help resolve eye problems painlessly and safely if used with a nutrition program.

Nearsightedness or myopia, farsightedness or presbyopia, astigmatism and related visual disturbances are often related to very chronic stress and perhaps nutritional imbalances as well. They may respond a little to development, but these tend to require other approaches for correction.

Cataracts, glaucoma, retinopathies and macular degeneration are more chronic and degenerative eye diseases. I have not worked with enough cases to say how effective development is for these conditions. More anti-oxidants such as lutein and zeaxanthin should be added to the program for these and other chronic eye conditions of these types. The response will likely be slower because, in most cases, the person is older and in poorer overall health when these conditions develop. Also, the eyes are related to liver toxicity, which must be handled first. This aspect of correction alone may require several years of development.

THE EARS - HEARING AND BALANCE DISORDERS

Chronic ear infections. These are extremely common. The main cause is childhood ear infections treated with antibiotics, or just infection that never resolved fully. Symptoms can be vague with some minor pain, itching, wax buildup, a slight discharge, some hearing loss, ringing in the ears, dizziness, or there may be no symptoms at all.

Chronic ear infections may become active again as a person's vitality level declines with age. Development programs can help by strengthening the body, increasing the vitality and often by bringing up and resolving old infections. However, this can take a number of years on a program, at times, because some ear conditions are deep inside and quite chronic. To speed the healing of any ear condition, a single reddish heat lamp may be aimed at the ear for no more than 5 minutes at a time, 5 or 6 times daily or once every 2 hours. This can be extremely helpful for a wide variety of ear-related problems.

Hearing loss. This is common as people age. Causes include impaired circulation due to arteriosclerosis, chronic ear infections, arthritis of the bones of the ear, or nerve damage. These problems may or may not respond to development programs, depending on the cause.

Tinnitus or ringing in the ears. This can be due to manganese toxicity, or possibly other causes. A recent finding is that excessive sexual activity among men seems to cause manganese deposits in the brain. This can cause tinnitus or hearing loss.

Dizziness, vertigo or balance problems. Chronic inner ear infection or perhaps metal toxicity may contribute to this common symptom. Reduced blood flow to the cochlea or nerve degeneration for some reason is also possible. The response to development is variable.

SKIN, HAIR AND NAIL CONDITIONS

Prevention. For best skin health, use only the cleanest, most non-toxic cosmetics and body care products you can find, and as little as possible, because almost all contain some less-than-ideal chemicals to place against the skin. Also, try to avoid exposing the skin to all harsh chemicals such as solvents, detergents, pesticides, and even most perfumes and deodorants. Also, baths, as a rule, are more toxic than taking showers due to chemicals in almost all tap water. Causes for skin rashes and other skin problems include:

- *Zinc and copper imbalances.* Zinc and copper play important roles in the skin.
- *Infections.* The skin is prone to many types of infections such as fungal, bacterial and others.
- *General toxicity.* In most people, the skin is one of the most congested and toxic organs. The body shunts many toxins to the skin where they do less damage to the body than elsewhere.
- *Skin care products.* Almost all lotions, shampoos, deodorants, cosmetics and other skin care products contain toxic chemicals.
- *Clothing.* Synthetic, and even some natural fiber clothing worn next to the skin will impart chemicals into the skin. Always wash all new garments before wearing them, especially if they have any odor or unusual texture. Also, if possible, wear only cotton or other natural fibers next to the skin. Ideally, seek out organically grown cotton or hemp clothing.
- *Psychological stress.* The skin may reflect a person's stress level more than most other organs or systems of the body. This is an evolutionary mechanism to warn others of impending problems even if speech is not possible. It is also an aspect of body language.

- *Bathing in toxic tap water, swimming pools, hot tubs and other locations.* All tap water contains chlorine, toxic metals and often more harmful toxins such as fluorides, residues of pharmaceuticals and much more. Over time, these affect the skin tremendously.
- *Deficiency of the omega-3 fatty acids.* This common deficiency can cause dry and flaky skin in some people. Other nutrient imbalances such as an improper diet also may affect the skin.
- *Impaired elimination.* When the liver, kidneys, and bowel do not function properly, the skin works harder to eliminate toxins. Some skin conditions disappear as elimination improves.
- *Allergies.* These often affect the skin to some degree.

Correction of skin conditions. Development can often correct skin conditions in babies and children within days to a week or two. Babies, for example, often just need copper and zinc in the right ratio to correct eczema, diaper or so-called heat rashes that may be fungal in origin. Skin conditions in adults may take longer and can be among the most stubborn types of conditions. Fortunately, they are usually not serious or life-threatening.

Daily sauna therapy is superb for many skin conditions. The near infrared type of sauna is best, but any sauna is often somewhat helpful to cleanse the skin deeply and uproot infections. For example, acne can respond in a matter of days, even when it is of longstanding duration. I cannot recommend infrared sauna therapy highly enough for most skin conditions. Be sure to follow the recommendations in Chapter 44 and in the book, *Sauna Therapy*, for safety and for the best results. An exception is in cases of **rosacea**, as the sauna's heat might aggravate it. This condition is slower to heal with development.

Toenail fungus. This stubborn condition responds to various remedies, including perhaps therapy with a single reddish heat lamp. Shine it on the toes several times daily for 5-10 minutes at a time, as hot as one can comfortably tolerate. Be careful not to touch the heat lamp to your toes, as it is extremely hot. Continue this therapy for at several months on a daily basis.

General symptomatic remedies. In addition to a development program, excellent skin remedies include aloe vera gel or lotion, or a cut leaf from an aloe plant. Another good one is zinc oxide ointment from the drugstore. For killing fungus and other skin infections, a good quality colloidal silver or tea tree oil may work. The latter is irritating and a little toxic, so use it carefully. A single reddish infrared heat lamp is excellent for some skin problems. For skin cancers or even suspicious-looking moles, a native American herbal remedy called *black salve* is often superb. Be sure to follow directions exactly. This is available at some health food stores or on the internet.

Healing reactions and the skin. During development programs, temporary skin eruptions are very common. They occur because most toxins can be removed to some degree through the skin, and the skin is very congested in most people. Rashes, itching, burning, tingling and other sensations are common. Most require no treatment and go away on their own in a few days to a week. If needed, apply aloe vera gel, zinc oxide, colloidal silver or other simple remedies to help with itching or infections. If needed, antifungal skin creams or powders are not too toxic. Avoid orally administered antifungal drugs, as most are very toxic. If possible, also avoid skin creams containing cortisone and other drugs.

PAIN

Pain is the single most important human sensation. This short section introduces important principles of pain correction and management using development science.

The pain process. This occurs in three stages of 1) tissue damage, 2) the stress response, including inflammation in all cases, and 3) resolution. Let us discuss these in more detail.

1. Tissue damage. Causes can include heat, cold, mechanical compression or other mechanical torsion, infections of many kinds, nutrient deficiencies or toxins of all kinds. Cell damage actually occurs due to impaired circulation, oxygenation, hydration or elimination of wastes. The body may also damage itself, causing pain. For example, poor digestion causes the production of toxins in the intestines that cause gas pains, liver tenderness and other kinds of pain. Those with diabetes or those on starvation diets may tear down their own tissues because they cannot metabolize sugars properly.

2. Inflammation. This can be very mild such as a slight swelling, or it may be extreme such as anaphylactic shock. In general, fast oxidizers can mount a far greater inflammatory response than slow oxidizers, who have less energy to work with. *All inflammation is a mini-fast oxidation state.* A fast oxidation rate on a hair analysis, by contrast, is a system-wide inflammatory condition. However, they are similar in many ways. Fast oxidizers therefore usually experience more extreme inflammation with symptoms such as acute pain, swelling, redness of the skin, water retention, blisters, a higher temperature and blood pressure, high blood sugar, more insulin secretion and perhaps more emotions such as rage and anger.

In contrast, slow oxidizers often experience less inflammation when an injury occurs. Some people comment that slow oxidizers have “a high pain tolerance”. This is simply because they do not react as much as fast oxidizers because they are too exhausted to react strongly. They may not even feel a needle puncture, for example, that would make a fast oxidizing child scream in pain. Those with a calcium shell are even more numbed to some types of pain and other sensations as well. They often have the highest pain tolerance of any group. They may also have a high tolerance for emotional or mental pain as well, though certainly not in all cases.

3. Resolution. Pain resolution is often fast, such as withdrawing your hand from a stream of hot water or removing a stone from your shoe that is irritating your foot. Chronic pain usually occurs when the cause is not addressed. This may be due to ignorance of the cause or to imbalances in the body that prevent correction. For example, a zinc or omega-3 fatty acid deficiency can cause inflammation that will persist until the cause is found and corrected.

Unrelenting, severe pain often causes depression, discouragement and finally death to relieve the pain. This is where pain medication can be valuable, especially in acute situations such as after a car accident. It is important to recognize that even low-grade pain can significantly shorten a person’s life due to the depression and fatigue it can cause. On the other hand, one must be careful with pain medication, especially narcotic drugs such as codeine and morphine. These are extremely toxic for some people and can, of themselves, cause death when too much is given. This happens often in hospitals, in my view. Also, dependency and addiction can occur with these drugs.

Pain principles in regard to hair mineral analysis. These include:

- *Any imbalance on a hair analysis is potentially associated with pain.*
- *A low calcium level and a faster oxidation rate are associated with heightened sensitivity to all sensation. A higher calcium level and slower oxidation are associated with reduced pain sensation and a higher pain tolerance. This may apply psychologically, as well as physically.*

- *The sodium/potassium ratio may be called a pain threshold ratio.* The higher the ratio, the more sensitive a person is liable to be to pain sensations. In contrast, a low ratio, and all of the lowered awareness patterns such as a *calcium shell*, cause reduced pain awareness.

Pain serves many functions. An important one is to alert a person to tissue damage. However, pain is also used in nature to attract men and women, and to move people along their path in life. Here are some of the most important types of pain that most people will experience:

1. Physical or mechanical causes for pain. These include all tissue injury due to mechanical compression, the presence of toxins, an imbalanced temperature or pH, or a lack of water, oxygen, blood or nutrients.

2. Pain that is related to stress of any kind. This is somewhat different than that above because it tends to be temporary. It is due to mechanical or other causes, but it is related to tension, specifically. Examples are pain due to fatigue, lack of rest, too much running around, too much talking, eyestrain, muscle strain, digestive strain and all other types of tensions.

3. Pain related to mental, emotional or spiritual causes. This includes fear, longing, discouragement, horror, revulsion, and other more subtle types of pain. It may include the pain of lying to someone, the pain of feeling betrayed or let down, or the pain of learning the truth about something or someone. These cause pain every bit as strong and sometimes stronger than physical causes. In fact, they can do a kind of damage to the body at subtle levels. This type of pain is less easy to quantify and read with scientific instruments. However, it can sometimes upset or motivate a person more than pain due to an infection or a broken bone.

Pain, as viewed above, is closely related to the three levels of brain activity that are discussed in Chapters 36 to 40. In other words, one can classify pain syndromes by the level of brain activity with which they are most closely associated. This is a very useful way to understand pain because it can help one decide how to approach its correction.

Development addresses many mechanical causes for pain. These include *inflammation, nutrient deficiencies, calcium imbalances, toxic metals, excessive toxic chemicals, infections, bowel problems, hormone imbalances, excessive tissue breakdown, improperly healed injuries, wounds and scars, and other sources of physical pain.* Indicators for these include:

- *Inflammation* - all fast oxidation, a high sodium/potassium ratio, and perhaps sympathetic dominance, elevated 'three amigos', other toxic metals, four lows and four highs.
- *Excessive tissue breakdown* - a low sodium/potassium ratio or phosphorus less than 13 mg%.
- *Toxic metal excess* - often hidden on early hair analyses and other tests. Indicators for hidden toxic metals include hidden copper toxicity, zinc less than 12 mg%, phosphorus less than 12 mg%, slow oxidation or elevation of one of the 'three amigos', usually aluminum.
- *Bowel toxicity* - slow oxidation, especially with an abnormal copper level or hidden copper toxicity, low phosphorus or a low sodium/potassium ratio.
- *Infections* - a low sodium/potassium ratio, low zinc, high or hidden copper and perhaps all low energy patterns such as very slow oxidation and four lows.

- *Impaired wound healing* - a very slow oxidation rate, low sodium/potassium ratio, low phosphorus, four lows, low zinc, copper imbalance & high toxic metals, especially cadmium.
- *Deficiency of anti-inflammatory hormones* - very fast or very slow oxidation rate, a very high or very low sodium/potassium ratio, low zinc, high or hidden copper imbalance, elevated toxic metals and four lows.

Hair analysis trends for imbalances in the main anti-inflammatory minerals are:

- *Calcium*. A level less than 30 mg% or greater than about 60-80 mg%.
- *Magnesium*. A level less than 4 mg% or greater than 8-10 mg%.
- *Zinc*. A level less than 13 mg%, a sodium/potassium ratio greater than about 4:1, elevated copper, hidden copper indicators, elevated cadmium, lead, arsenic, mercury and other toxic metals in many cases. Also, most people are low in zinc today regardless of any tests.
- *Selenium*. A level less than about 0.1 mg%

Hair analysis indicators for the pathological buildup of metals in the body (both toxic metals and excessive vital minerals) are:

- *The presence of any of the 'three amigos' or 'friends'* (manganese, iron or aluminum).
- *Elevated levels of any of the toxic metals.*
- *Copper greater than about 2.5 mg% or indicators for hidden copper.*
- *Calcium greater than about 80 mg%.* This can indicate a degree of calcium depositing in the soft tissues of the body such as the joints, the arteries, the brain or elsewhere.
- *A slow oxidation rate also usually indicates toxic buildup in the tissues.*

Development can reduce pain due to stress and tension, as well as that due to mental/emotional and even spiritual causes. Development often addresses pain due to stress and tension in the body. This might include pain due to an improper diet, inadequate rest, or too much or no exercise. Other cause might be revealed as a *sympathetic dominance pattern* or a *spiritual defensiveness pattern* on a hair mineral analysis.

In addition, development may help to release some causes of mental and emotional pain. It can do this by enhancing physical and emotional stability and biochemical balance. This will provide anyone with a better physical foundation for handling all mental and emotional trials.

Developmental pain. A unique type of mainly mental/emotional pain is that which occurs as a person matures mentally and emotionally. This type of pain is usually a new awareness that one must live differently, and perhaps that one wishes to be around different kinds of people and to engage in different types of activities than most others enjoy. This is a type of loneliness that all people feel as they move on in their lives. This may be called the pain of heightened awareness or the pain of waking up.

Children handle this kind of pain easily, in most cases. Adults often do not, and it stops many of them from moving ahead in their lives. Instead of moving on by themselves, they prefer to run with the crowd, which only reinforces the crowd's anger and boredom, since many in the crowd really wish they were elsewhere. This is where leaders are helpful for people, as they may be able to motivate people to move on to more productive, more healthful and more wholesome life adventures.

34. DEVELOPMENT THROUGH THE LIFE CYCLE

Jeanie, age 2, was irritable, constipated, reacted to many foods and had gastric reflux. These symptoms are sadly common in young babies and children today. They are born with a weak digestive system, usually due to nutritional imbalances in their mothers. Then they are given multiple vaccines, often right in the hospital, long before their digestive and immune systems are capable of handling the shock. In addition, they are often not breast fed long enough. Instead, they are fed chemical-laden baby formula, soda pop, fruit juices, too many sweet foods and not enough quality fats and oils that all fast oxidizers require. Babies ideally should not be given any juices or sweet foods. Stress at home, and electromagnetic and chemical toxins in the home, in cars and elsewhere, all add to the baby's toxic load. Plastic diapers, toxic skin lotions and crib mattresses sprayed with fire retardants and other chemicals are additional toxins the children of Western Europe and America must contend with.

Jeanie felt better on a development program, but one day began a healing crisis with a slight fever, colic and diarrhea. Her mother took her to a doctor, and a blood test showed a low white blood cell count. The doctor was alarmed and wanted to do more tests. I advised her mother that blood tests can be abnormal, at times, during development programs. Before doing more tests, the blood test should be repeated in a few days to a few weeks. The test was repeated in a few days and came back normal. It is possible the first test was simply in error. However, often blood results will vary widely as body chemistry changes at deep levels. The low white cell count may also have been due to a latent infection that became active as it was cleared from the body. Since this healing crisis, Jeannie is no longer irritable, and she can tolerate most foods with no constipation or gastric reflux.

Many health problems today begin before birth, while one is still in the womb. They become worse during childhood and adulthood. If this is understood clearly, preventive and corrective measures can be taken throughout the life cycle to slow and even reverse the process or aging, disease and early death. Here is an illustration with a fictitious child named Emily.

THE BEGINNING OF STRESS

The story of Emily is a good illustration of a typical child's development. She was one of the lucky children who was conceived in love by a married couple. Her parents, unlike many, were emotionally ready for a child, but her mother's body chemistry was far out of balance, as are most today. Most young women are deficient in calcium, magnesium, zinc, selenium and other vital nutrients. Their bodies are also high in copper and a dozen or so toxic metals. Their

general vitality, even at age 20, is often dreadful. Most standard and holistic tests will not reveal this. Most young women also do not eat nearly enough cooked vegetables, and too many eat on the run. Most also drink impure tap water, do not sleep and rest enough, breathe impure air all day long, do not breathe deeply enough, and some work far too many hours to be healthy.

Calcium deficiency begin. Just a few hours after conception, Emily's body calls for calcium. However, her mother rarely consumes certified raw dairy products, carrot juice or some other excellent source of calcium. Also, mother doesn't know she is pregnant so she is not taking a calcium supplement. Pasteurized and homogenized dairy products are not nearly as good sources of calcium. As a result, within hours of conception, Emily is already low in calcium, which will slow her development a little.

Three days later, Emily has an important need for zinc. However, her mother's diet is low in zinc and too high in copper. Instead of zinc, Emily reluctantly must accept copper in place of the zinc in certain enzymes. It keeps Emily growing, but Emily will be a nervous, moody child as a result.

Alcohol. The next evening, mom and dad go to a party and mom can't resist a small glass of the finest wine, so she is told. However, it is not healthful at all because it contains alcohol, a highly toxic substance for growing babies. It may also contain toxic sulfites used as preservatives, and pesticide residues from the sprays used on the grapes. Just one glass of wine at this critical moment in Emily's development totally stops her brain from growing for a few hours. This sets her back significantly, since there is much to do in the next eight months or so. The following day, Emily's system cries out for extra B-complex vitamins, magnesium and zinc, among other nutrients, to rid the body of the alcohol and chemical residues. Few people realize that alcohol and most food chemicals and metals pass right through the placenta from mother to child.

Smoking. The next weekend, mother finds out she is pregnant. She and dad go out for a nice meal to celebrate. However, they sit near a man who is smoking a cigarette. This is disastrous for Emily. The second-hand smoke leaves Emily's tiny body with many more toxic chemicals and heavy metals for the rest of her life. Even if she tries to detoxify later, these toxic metals will be deeply buried in her newly forming brain and elsewhere, making it very difficult to dislodge them. Emily is lucky, however, because her mother is not ill or unhappy, doesn't have to work long hours, sleeps almost enough and is not exposed to severe toxins at work or at home. Millions of developing babies are not so lucky.

Birth with drugs. Soon it is time for Emily's first ultrasound. Neither her mother, the doctor or technician realize how this affects Emily. The high frequency sonar waves are, in fact, quite objectionable to Emily, but what can she do? This common test is best done as few times as absolutely needed to monitor the pregnancy. The next step is birth, a difficult time at best for babies and perhaps the most traumatic time in their lives. Birthing practices have at least become cleaner, but in Emily's case the doctor on call is in a hurry, so drugs are used to speed up labor. Emily is not really ready to be born, and the drugs numb her and force her to be born a few days early. This will also leave its scars on her body, particularly her nervous system, for the rest of her life.

Formula and vaccines. After birth, instead of her mother's warm breast, she is given a toxic brew called formula that instantly makes her sensitive digestive tract inflamed and sets back her development of this part of her body by days to weeks. Before she goes home, she receives a hepatitis B vaccine, although the chance of exposure to hepatitis are almost zero for a well-cared for baby. The vaccine contain enough mercury, aluminum, formaldehyde, benzene or

other poisons to thoroughly disrupt Emily's nervous system for weeks or longer. She is lucky, however, because many other children end up autistic as a result of all the toxins in vaccines.

This is how life begins for most babies in the Western world. In fact, Emily is much better off than many, whose mothers have no husband, who live on very poor food, and who may smoke cigarettes or marijuana, and drink much more alcohol.

Today most babies also have to contend with mothers who use toxic over-the-counter and prescription drugs, and toxic skin care products such as perfumes, deodorants and hair spray. Most babies are also exposed to many toxic home products such as pesticides, slightly toxic soaps, detergents and others. Please reread this story many times as there is so much to learn about healthful pregnancy that this book can only touch upon. Another volume is needed to teach how to live in order to have a healthy and wholesome pregnancy experience.

PRENATAL CARE

Prenatal care in most advanced nations is quite insane from the perspective of development. Its problems include:

- *It begins far too late.* Prenatal care should begin at puberty or much earlier, in fact, to renourish and really prepare a young woman's body, mind and emotions for the sacred task of raising a child.
- *It does far too little to make much of a difference.* Most prenatal care consists of a blood test or two, perhaps a chest x-ray, and a prescription for a multi-vitamin that is often totally incorrect for the woman's and the baby's needs.
- *It does not teach a healthful lifestyle, a superb diet, plenty of rest, emotional tranquility, and avoidance of **all** toxic substances in the air, water, food and through contact.*
- *There is no attempt to teach women that pregnancy is a huge stressor.* It is hard on them, and on their children as well. Anyone over about 40 today should not be encouraged to become pregnant for these reasons. It would be much better to adopt at this age or older.

Prenatal care among 'primitive' tribes. Dr. Weston Price, DDS, learned that many tribes begin prenatal care as soon as a girl reaches puberty. The entire tribe may gather and organize a special hunting or fishing trip to bring the lucky lady special foods so she can bear the healthiest child possible. Interestingly, in all cases that I recall, the primitive tribes sought out animal quality foods for the young women. Zinc and many other micronutrients are found almost exclusively in animal quality foods. While the hunt was on for the best foods for the young girl at puberty, often she was taken away from her friends and spends time with older women who teach her all about nutrition, cooking, child-rearing and other skills she will require.

Today's prenatal care is close to the exact opposite. Teenage girls are encouraged on television to load themselves with toxic makeup, nail polish, hair spray, hair dye and other poisons, and to eat unhealthy diets. Their parents even encourage some of this, or at least don't stop it. Instead of learning child care and nutrition, they often learn how to experiment with sex, alcohol and drugs recklessly. This leads to diseases in most of them by age 25 or so, that will affect them and their babies for the rest of their lives.

Young women, in particular, need to know that anything they put in their bodies now, and every product they use on their skin and hair, will affect the health of their future children. This is not up for debate or discussion. I hope someday that our culture begins to honor

womanhood and motherhood by insisting that girls at puberty clean up their diets and lifestyles and learn about their future role as mothers. This needs to happen long before they become pregnant, because it takes years to clean out the poisons, if they can ever be removed.

Better prenatal care. In my experience of almost 30 years, development is superb to help young women to have safer, healthier pregnancies and better outcomes for their children. Many young women look good. However, on their hair analyses almost all show adrenal exhaustion, copper imbalance, hypoglycemia, plenty of toxic metals and other biochemical imbalances. All can negatively affect pregnancy and childbirth. Without a hair analysis, one cannot tell, for example, if a young woman or man has excessive amounts of toxic metals, an imbalanced oxidation rate or other important metabolic problems. A group in England that is doing a fine job of educating people in the area of prenatal care is *Foresight*.

Development during pregnancy. I was initially skeptical of placing pregnant women on development programs. I wondered if the program would mobilize toxic metals from tissue storage sites and they would be deposited in the fetus. However, this does not appear to occur. So far, after at least 100 cases, 100% of the babies born to women who follow a well-designed development program during pregnancy have been as healthy or healthier than the mothers' previous babies. In fact, most mothers comment that their 'hair analysis baby' is much happier, with better color and fewer digestive and other problems.

For safety's sake, I do not recommend saunas or even coffee enemas during pregnancy, although I am unaware of any problems with them. This is simply a general precaution until more studies of these modalities are done. Also, in addition to the individualized supplement program from the laboratory, I recommend kelp, omega-3 fatty acids, vitamin D and extra iron and perhaps folic acid, as these are necessary for a healthy pregnancy.

Genetics, birth defects and development. The birth defect rate in the United States and elsewhere has more than doubled since 1950. Given all our technological advances, this is nothing short of disgusting, and one of post-modern medicine's greatest failures. Who cares how wonderful their neonatal care is. It is still better to have a very healthy baby. Birth defects are caused by radiation, toxic metals, toxic chemicals and nutrient deficiencies. All of these can be reduced by stopping one's exposure to toxins and by following a development program.

In other words, birth defects, in my view, are not that difficult to prevent. Other truths about birth defects that need to be taught in high school, not to mention medical schools, are:

- *Nutrients activate genes.* Most genetic problems are due to lack of activation by various nutrients such as zinc, magnesium, selenium and various vitamins.
- *Toxic metals can interfere with gene expression.* This is well-known, but not taught much.
- *Removing toxic metals and balancing body chemistry can improve a person's DNA.* This is a casual observation that will require more rigorous proof. However, DNA is subject to damage by toxic substances of all kinds such as metals, chemicals and radiation. Removing these toxins is helpful for the body at all levels of functioning.
- *Many children with birth defects such as Down's syndrome or mongolism, for example, respond well to nutritional approaches.* I have helped a number of babies and children with severe genetic problems who were not supposed to do nearly so well. Perhaps this is

possible because some of the damage has to do with enzymes that can be bypassed or assisted by gently balancing body chemistry and removing one's toxic metals.

Toxic metals in babies. Almost all children today are born with excessive toxic metals and nutrient deficiencies due to excessive toxic metals in their mothers. Newborns can have a hair analysis as soon as they have enough hair or fingernails to obtain a sample for analysis. Most have an excessively fast oxidation rate, a low sodium/potassium ratio and high levels of toxic metals.

Supplement programs for babies. Infants usually require only three products - a metabolic pack, a calcium and magnesium product, and Limcomin. The latter is a formula from Endomet Labs for those with a low sodium/potassium ratio. *More supplements, even of the best quality, are often harmful for infants because their bodies are extremely sensitive.*

'Burnout babies'. Dr. Eck used this phrase thirty years ago to describe many babies whose hair analyses reminded him of much older, sicker people. At age two or three, these children are already tired, prone to illnesses and, as a result, even somewhat depressed. They usually have food intolerances, sometimes to breast milk, and many are diagnosed as ADD, ADHD, and perhaps with autism or even cancer before they even enter school. This is the sad situation today in America and parts of Europe and Asia where people have lived on refined foods and contaminated drinking water, used hundreds of toxic skin care and other products on their bodies and in their homes, and breathed contaminated city air, often for several generations.

VACCINATION

The most toxic and insane medical intervention today is multiple vaccinations given to babies and children. They cause far more problems than they could ever prevent. Reasons for harm include:

- *Injecting poisonous germs into delicate bodies with poorly developed immune systems.*
- *Contamination of ALL vaccines with other bacteria and viruses.*
- *Contamination of most vaccines with added chemicals.* These include mercury, aluminum, benzene, squalene, formaldehyde and a number of others.
- *Bypassing the body's defense systems.* Just because the amount of mercury and other chemicals is small does not make their use acceptable. First, adding more poison to a person's body is never wise, particularly for growing children. Far worse, however, is injecting poison directly into the body because this bypasses most of the natural defenses against toxicity. The effect is far worse than drinking a little fluoride or some other toxin.
- *Ignoring the real causes of disease.* Parents are brainwashed into thinking that their child is now healthy because he has been vaccinated. This is a complete lie, often perpetrated by corrupt public health officials and pediatricians who make their living doling out the shots.
- *No legal accountability.* In every other industry, those who make and sell products are held liable for their actions. This is not the case with vaccine makers, or with the doctors and nurses who preach the virtues of vaccines and actually inject them.
- *Combination vaccines.* These are the worst, and most important to avoid. They include the MMR, DPT and others. Ignorant doctors often recommend combining many shots at one "well child visit" to save time or money, not realizing the danger in which they place the young children.

- *Forcing toxic drugs on people who do not want it is a form of tyranny and totalitarian rule that has no place in America.* The current government and Congress wants to expand government's power and control over health care. This would likely make this much worse.

A recent report from the Centers for Disease Control or CDC indicated that children who received vaccines preserved with a mercury compound were 27 times more likely to develop autism! I hope that common sense returns to this area of medical care soon. More information and references on vaccines are found at www.drlwilson.com as well as on many other excellent websites. An excellent 2-DVD series is available at www.MaryTocco.com.

Drugs for babies and children. The second worst medical intervention today is drugging children for minor infections and worse, for vague psychological diagnoses such as depression and bipolar disorder. *If at all possible, avoid the use of all drugs with children.* Natural remedies for rashes, fevers, infections and other conditions are listed elsewhere in this text. Most psychiatric drugs have never been tested or even formally approved for use with children. However, this is not stopping hundreds of thousands of doctors around the world, including holistic ones, from using them with impunity. Mental illness, in our experience, is often due to nutritional imbalances or stress in the home or school. Instead of really investigating these simple causes, however, too many doctors and psychologists rush to the prescription pad. This is rather insane and should be grounds to revoke a doctor's license to practice.

Breastfeeding and development programs. Development programs work very well in women who are breastfeeding. The milk is more nutritious and promotes excellent health in both mother and child. It may keep the baby breastfeeding longer, since at times babies reject the breast milk after a few months or more because it is low in nutrients or has other problems.

Rarely a baby becomes colicky when his or her mother is on supplementary nutrients. If this happens:

- *Try stopping the supplement program for a day.* If the symptoms cease, the problem is likely a reaction to a supplement. If, however, the colic continues, most likely the problem is not related to the nutrients. Perhaps the mother is not relaxed enough while breastfeeding or the infant is somewhat ill or retracing. Occasionally, the mother's diet is at fault in some way.
- *If you suspect a supplement is the problem, slowly restart the supplements, but only one dose daily and only one supplement at a time.* This way you can usually figure out which one is causing a problem. In a few cases, it is not any single supplement, but just the powerful combination. In this case, do not take supplements just before breastfeeding and this may solve the problem.
- *If a product must be eliminated, check with your Helper to see if a substitute can be found.* In some cases, a milder product or just a different brand may be acceptable.

Breastfeeding difficulties. *Ideally, babies should be breastfed for 3 years.* Please do not give up on breast feeding easily. Also, avoid listening to anyone who says that formula, or animal or vegetable milks, are almost as good as breast milk. They are usually not! Contact **La Leche League International** for breastfeeding problems. Common reasons for difficulty breastfeeding include:

- *The mother does not drink enough water.* This is the most common problem.
- *Nutritional imbalances in the mother that affect the quality or quantity of the milk.* All women who breastfeed require a development program to have good quality milk.
- *Stress in the mother or child, which impairs feeding.* Always sit quietly while breast feeding. Never rush the baby or yourself. If possible, think only positive, happy thoughts while breastfeeding and during pregnancy.
- *Other problems include sore nipples, breast infections, and some babies have difficulty feeding.* For sore nipples, try a product called Bag Balm. It is not a 100% natural product, but it is better, if it works, than quitting breast feeding due to sore or infected nipples. For simple infections, consider simple, non-toxic anti-infective agents before resorting to toxic antibiotics. These are discussed in Chapter 45 and are generally safe for lactating mothers.

Breast milk substitutes. If one must abandon breast feeding, here are suggestions:

- *Try to find a wet nurse.* This is uncommon today, but was a very common practice years ago, and is still common in some cultures. Any young woman will do. I realize this may sound radical, but it is not crazy if you want to raise an extremely healthy child.
- *Make your own formula.* How to do this simply is in the Homemade Formula article at www.drlwilson.com.
- *If possible, do not use commercial formula.* It is often just canned cows or soy milk with sugar, chemical additives, and poor quality vitamins. Some have added iron, which is one of the worst aspects of their use and is terrible for most babies.
- *All babies and children must have sufficient omega-3 fatty acids.* The best sources are fish oil, or perhaps hemp or flaxseed oils. Grinding up flax seeds will not provide enough.

Saunas and colon cleansing during lactation. Lactating mothers may use saunas and do coffee enemas during lactation. We have never had a baby react to these.

CHILDREN AND TEENS

Children often do extremely well on development programs, provided that parents make sure their child eats correctly, sleeps a lot, and takes the supplements twice daily. Tips for working with children are:

- *Parents must set an example for their children.* Eat the same healthy food, go to bed early, live a healthful lifestyle and in many cases your children will just follow along naturally.
- *Give children healthy choices as to what he or she may eat, and as to how he or she may swallow or powder the supplements.* Do not force children into one type of food or one way to take supplements. However, neither should a parent make excuses that the child will not take the food or supplements. Just provide choices, all of which are good for health. Ask for help, perhaps from a trained counselor or other parents if your child is fighting you on this. Others may be able to see subtle ways in which you are getting in the way of your own success in this area. Many parents simply give up on their children, which is a shame.
- *Make meals simple and fun.* Two or three types of foods are plenty at a meal. If needed, cover vegetables with a sauce made of full-fat plain yogurt, cream, butter, almond butter or,

if absolutely needed, a little tomato sauce. Tomato products are not recommended at all, however, as they are too yin and contain toxins. Many children will eat healthy, simple meals if parents will prepare them and eat them, too.

- *Give all children, along with all other family members, 2-10 ounces of carrot juice.*
- *It is okay to puree vegetables and make thick soups to help children eat more vegetables.* To puree, use a hand blender and don't add more water. *Do not overcook vegetables and rotate them to provide some variety.*
- *Fruit and sweets are never helpful.* Avoid thinking that some sweets, fruit or juices, even diluted, are good for children because they like them. These are horrible for all children, and for adults, as well.
- *Digestive aids.* Most children do not need these as much as adults.
- *Powdering supplements.* For young children, supplements can be ground or crushed with a pill crusher. These are available at many supermarkets or pharmacies. Mix the powder with a strong-tasting food such as cream, almond butter or yogurt.
- *Saunas.* For children under five, we do not recommend saunas, although some doctors such as Stephen B. Edelson, MD make use of saunas with children as young as two. Children must be accompanied in a sauna by a parent or other adult.
- *Sleep.* *All children, especially teens, need at least 10 or more hours of sleep each night.* According to a recent news report, even one more hour of sleep per night can make the difference between a healthy teen and one who is tired, overweight, depressed and not doing well in school. More sleep can also help offset other bad habits, such as improper diets.

Teen's diets and lifestyles out of control. The diets and lifestyles of many older children and teens are shocking to anyone who was raised in a good home. Many are allowed to stay up late, sit at computers or watch television for hours instead of getting some exercise, eat absolute junk, and on the weekends many are allowed to wander all night with their friends. Often, there are few sit-down family meals that are truly home-cooked with fresh ingredients.

All children, and especially teens, need lots of love, attention, and time for true family communication. Always ask plenty of questions of children and help them speak honestly and openly about everything that is going on in their lives. Do not punish a child for telling you the truth, even if you don't like what you hear. Always try to keep a sense of humor because children are full of life and not interested in too much seriousness.

Never base decisions about your children on the ways that other parents treat their children. Children all need their parents to set clear boundaries, and to set up simple, sensible and easily understood rules. They also need to suffer consequences when they do not obey the rules. This does not mean to be extremely harsh. It is simply learning to be part of a family and part of a vibrant society that rewards good behavior and punishes crimes. If children cannot fit in at home, they are even less likely to fit in to society once they grow up and are on their own.

Many parents are tired out and work long hours. Often, however, ways can be found to spend more time at home, with children. If at all possible, home school children, especially girls! Seek help if you feel you need help with children, rather than just give up or give in to their demands or putting them on drugs. Some teachers believe that disciplining children, insisting they eat well and do chores, and that they sleep enough is bad for their self-esteem. In fact, the opposite is true.

OLDER PEOPLE AND DEVELOPMENT

Older people have unique situations that influence their response to development programs. These include:

They are generally much more poorly nourished than young people. This is due to poor dentition that impairs chewing and a reduced sense of smell and taste that reduces appetite. They also have reduced digestive enzyme secretion that impairs digestion and a more toxic liver, kidneys and bowel that reduces the activity of the eliminative organs. More chronic infections and the use of more medical drugs in many instances also weaken the body. Their breathing is often more shallow and most do not get enough exercise due to fear of falling. Many are also depressed as a result of their inability to do all that they formerly could do. Thinking is often impaired due to some degree of dementia and other brain problems.

However, older people do extremely well on development programs because their bodies are already more etheric and less physical. This means their subtle energy centers are usually larger than those of young people. A development program is very concerned with these energy centers. Many elderly people also make excellent clients because they have learned how to follow instructions well. They must be committed and understand the program, however, so be sure to explain everything carefully.

Tips for assisting those who are 65 or older include:

Older people need the entire development program. They also need assistance to cook their food properly, to remember to take the supplements, and to do all the detoxification and healing procedures. Here are more specifics:

- *Diet.* This need to be strict, with no sugar or fruit, loads of properly cooked vegetables and simple food combinations. Avoid raw foods due to weak digestion.
- *Supplements.* Older people always need more GB-3 or a similar digestive aid with pancreatin and ox bile. In some people, after about age 83, the supplement program needs to be much smaller. We are not sure of the reasons for this. Kidney support with Renamide or a similar product is excellent. MCHC is an excellent calcium supplement for those with osteoporosis, which includes most, if not all older people. MCT oil helps a few older people with dementia. Nattokinase is safer and better than Coumadin as a blood thinner, if needed. Red rice yeast is much better than cholesterol-lowering drugs. We do not worry about mildly elevated cholesterol, which corrects itself with a development program. Be sure that tablets are dissolving properly in older people. Crush the pills or use capsules if you are not sure.
- *The procedures.* These are vital. Also, for seniors, a few colonic irrigations are excellent when beginning a program. This will give many older people a new lease on life. Then continue with coffee enemas because repeated colonic irrigation is too yin because it involves a lot of water.
- *Kelp wraps daily* are also excellent for a year or perhaps longer to help renourish the body.
- *Reddish heat lamp sauna sessions are life-saving.* Most older people have a low body temperature, impaired circulation and very inactive and congested skin. The sauna directly addresses all these problems. Start with only 10 minutes per session. As the skin and general health improve, try to increase the time to 30 to 50 minutes per session, twice daily, if possible. Always have an attendant or friend present and close by in case problems arise.

- *Down coupling and down sex works very well on older people.* For details, read *Down Sex* at www.drlwilson.com.
- *Deprescribe drugs.* Always ask older people about ALL their drugs, both prescription and over-the-counter. Many symptoms can be due to drug side effects and interactions that are not found on labels, inserts, or in books about drugs. Many seniors take half a dozen drugs and some take over a dozen! If possible, work with the prescribing physicians when reducing prescription drugs.
- *Mobility is a very important issue for older people.* It is important that they keep moving and exercising to help maintain their bones, blood circulation, breathing and for psychological reasons, as well. A walk every day is essential. Use whatever is needed to keep them from falling, which is a common killer of older people.
- *Avoid surgery as much as possible.* Surgery adds toxic drugs to the bodies and immobilizes them, which is always harmful. If surgery is required, outpatient surgery is best.
- *Avoid chelation therapy.* It is never needed if one follows a development program. Chelation is harmful for everyone, and worse for older people. Chelation damages the kidneys in at least three ways, and older people already have weak kidneys. For details, read Chelation at www.drlwilson.com.
- *Avoid homeopathy, herbs and taking many or random nutritional supplements.* These are often considered better for older people because they are gentler. However, they are very yin and this will hasten death, even if they reduce symptoms. We find them not needed if one follows a development program.
- *Avoid a lot of dental work.* Older people often have dental problems because their bodies are demineralized. The problems are that dental work involves a lot of x-rays, anesthesia and sometimes antibiotics or other drugs. Digital x-rays are a little better than older ones, but still give a person significant radiation exposure if a lot are used. Definitely avoid all root-canal procedures. A development program can often heal infected or abscessed teeth. Remove all root-canal filled teeth. Bridges and dentures are often better than implants, which often become infected although one may not be aware of it.
- *Beware of medical personnel using old people to make money.* This is a big problem in nations where the government pays for senior medical care. Doctors abuse the system terribly, in many cases, with too many visits, unnecessary surgeries, and too many drugs and procedures.

For this reason alone, we oppose “free” medical care for older people. We put the word *free* in quotations because this is how these programs are sold to the public. However, the programs are not free! They cost the society trillions of dollars annually. “Free” drugs and more surgeries often hasten death rather than prolong life. Society must balance the needs of older people with the needs of babies and children, for example, who have a long life ahead of them. These are unpleasant matters to talk about, but the discussion is needed.

We strongly oppose ALL government-funded medical care, which is always sold to the people in the name of caring and compassion. “Socialized”, “nationalized” or “universal” health care are the same thing. They give the government much too much power and control over the lives of the people. Government medical care always contains what are called *perverse incentives*, meaning it encourages waste, fraud and abuse. No system is perfect, but private fee-for-service care is the only system that encourages individuals to care for themselves and to save money.

35. CANCER

Mary, age 47, began to experience double vision and fatigue. An MRI revealed a pituitary macroadenoma. Blood tests also indicated hyperthyroidism or Grave's disease. She followed a complete development program with plenty of properly cooked, 'preferred' vegetables with each of three meals every day. She also avoided all red meat and all eggs for a year. Mary also took several supplements based upon a properly performed hair mineral test. Each day she also did the neck pull, the pulling down exercise, four coffee enemas, and spent 1.5 hours in a red heat lamp sauna. Twice daily she also did foot reflexology and the spinal twist exercise.

Mary's double vision disappeared in a few weeks. Her thyroid hormone level normalized in six months. A repeat MRI about a year later showed a 20% reduction in the tumor's size.

PRINCIPLES WITH WHICH TO UNDERSTAND CANCER

1. *Cancer is trophoblast. This is explained below.*
2. *Most everyone over the age of about 15 has some cancer. However, in most people there is not enough to obtain a diagnosis using current medical technology.*
3. *Cancer is merely a symptom of degeneration of the body and only occurs when the body is very nutritionally depleted, toxic and out of balance.*
4. *If one can correct this underlying situation, cancer disappears. This does not require drugs or radiation therapy. These methods interfere with real healing. It requires learning and then practicing proper eating and living habits. This is the only "doctoring" that cancer requires.*

Our experience with cancer. In the past two years, development programs have become much more effective with cancer. As a result, we no longer recommend the same remedies or the Kelley metabolic cancer therapy. We find that a development program is better.

WHAT IS CANCER?

In 1902, John Beard, MD, a brilliant embryologist, put forth the trophoblast theory of cancer. ***It states that cancer is a normal cell type called the trophoblast.*** The word trophoblast means *to nourish the baby*. Very early in pregnancy, the trophoblast surrounds the fertilized egg and eats it way deep into the mother's uterine wall. It literally steals blood and nutrients from her to nourish the baby. This early phase of pregnancy is called the implantation of the egg.

Most important is that a baby is a foreign object inside a woman. An implication of this is that abortion proponenets are wrong when they calim that a baby is part of its mother and

therefore she should decide its fate. *The baby is not part of the mother!* It is a separate living being in every way that just uses the mother for protection and nourishment for a short time.

Death of the trophoblast. Between 8 and 12 weeks of pregnancy, the trophoblast dies due to the secretion of pancreatic enzymes by the baby and mother. The placenta grows in its place and nourishes the baby for the duration of pregnancy.

Cancer is nothing more than trophoblast that arises outside of pregnancy. This has been known for 100+ years, but is not taught at all. If it was understood, cancer would become a minor disease. We believe this is not acceptable to those in charge of medical education.

Factors known to favor the growth of the trophoblast outside of pregnancy include:

- *High levels of estrogens.* This occurs during pregnancy and with liver toxicity.
- *High levels of toxic metals.* Many of these affect the liver's ability to detoxify estrogens.
- *Pancreatic enzyme deficiency.* Pancreatic enzymes destroy the trophoblast.
- *Omega-3 fatty acid deficiency.* This is the basis for some natural cancer therapies.
- *Mineral and vitamin deficiencies.* These are needed in the liver and elsewhere.
- *An acidic cell environment.* This occurs mainly due to toxicity and nutritional deficiencies.
- *A reduced oxygen supply.* The trophoblast thrives in a low oxygen or anerobic environment.
- *Infections, scars and other imbalances in the body tissues that damage the body.*

CANCER PREVENTION

Cancer is much easier to prevent than to heal for a number of reasons:

- *Cancer is a stealth illness.* This means it offers few symptoms in the early stages when it is easiest to handle. When discovered, it is often late to begin a corrective program.
- *Dissolving tumors is difficult for the body.*
- *Cancer can be a very fast-moving disease.* Halting it is like stopping a boulder that is rolling down a hill, gaining speed as it goes.

True or primary cancer prevention. *We think the medical and naturopathic recommendations for cancer prevention are very inadequate.* Real ways to prevent cancer are:

- *Each day eat 2-3 cups or 450-700 ml of cooked vegetables **with each meal.** Avoid vegetabrian and vegan diets. Limit protein portions to 4-5 ounces or 100-150 grams each and eat animal protein only twice daily. Also, eat some blue corn tortilla chips daily if you can find them, but no more than about 25 per day.*
- *Cook food properly.* Vegetables should be cooked until soft, but should retain their color and not fall apart. Grass-fed beef needs to be eaten rare. Lamb needs to be moist and have some reddish color left in the meat. Dark meat chicken should be sliced thin and cooked only enough to turn the flesh a whitish color. Eggs should be cooked so the yolks remain runny and basically raw. However, do not eat raw eggs which contain too many bacteria.
- *Avoid living on food that is fried, baked, grilled, broiled, stir-fried or barbequed.* These cooking methods produce too many AGES or *advanced glycation end products.* These are highly toxic chemicals that poison the liver and are associated with cancer growth.
- *Avoid all sugar and other sweets in the diet.* ALL of them are associated with fermentation and the production of *aldehydes.* These are also highly toxic chemicals that poison the liver

and are associated with the development of cancer. We also suggest avoiding all artificial and chemical sweeteners.

- *Drink 2-3 liters of quality spring water or carbon-only or sand-filtered only tap water if it is safe to drink.* Some tap water can be boiled to make it safe for drinking. These types of water appear to hydrate the body the best today.

Avoid distilled and reverse osmosis or RO water, also called “purified” or “drinking” water. These are mineral-deficient waters. RO water often does not hydrate the body well. Also avoid highly alkaline water or adding minerals to drinking water. If possible, avoid drinking water that contains fluoride, a carcinogenic chemical added to some drinking water that violates the American Clean Water Act and should be illegal.

- *Minimize toxic exposures of all kinds.* As much as possible, avoid medical drugs, over-the-counter remedies, most herbs and homeopathy. They are all toxic. Mild food herbs such as chamomile tea and a few others are okay in moderation. Also avoid all recreational drugs, including marijuana and CBD. These are also toxic, no matter what benefits they offer.

Use only non-toxic household chemicals and cleaners. Reduce your detergent use as much as possible. Use BonAmi on dishes. Live away from polluted cities and breath clean air. If possible, do not commute on crowded highways each day because this forces you to breathe air contaminated with automobile fumes.

Minimize your exposure to ionizing radiation from medical and dental x-rays, as well as other sources. For example, do not live near a nuclear power plant. These all emit some highly toxic radiation and should be outlawed.

Minimize toxic microwave exposure by not using cell phones, wifi, bluetooth and other mobile devices. Also, do not live anywhere near cell phone towers. Minimize radiation emitted by computer screens by sitting at least several feet away from them and not using them all day. You may say these suggestions are impossible, but they are not. If the nations are serious about stopping cancer, our technology can be cleaned up. Meanwhile, do your best because it matters a lot.

- *Remove all root-canal filled teeth at once.* They are definitely associated with the development of cancer. Thy ALL become infected and this practice needs to be stopped.
- *Avoid and remove all breast implants and other cosmetic implants.* In our experience, ALL of these eventually become infected and contribute to cancer.
- *Strictly avoid all hormone replacement therapy, especially estrogen, progesterone and testosterone therapy.* Thyroid hormone replacement is less damaging, but is not needed if one follows a development program to restore the thyroid gland.
- *If you become pregnant, immediately embark on a development program (see below).* This is most important if you want to have a safe pregnancy and a cancer-free child.
- *Each day live a healthful lifestyle.* This includes 9 or 10 hours of sleep every night and some gentle exercise each day. Vigorous exercise is neither needed nor helpful. It just further wears out already tired, depleted and toxic bodies.
- *Keep your thoughts uplifted, positive and in the present.* Judeo-Christian values such as the Ten Commandments of Moses and the Golden Rule are by far the best guides for living you will ever find. Also reject all secular thinking because it is wrong. This includes liberalism, progressivism, socialism, communism and other left-wing ideas.
- *Reduce your stress level in every way possible.* This means avoid stressful work situations, avoid harmful personal relationships, minimize long distance travel, and keep your personal environment clean and quiet.

- *Each day practice deep breathing.* Other methods to increase oxygenation of the body are the use of an ozonator/ionizer air purifier to increase the oxygen content of the air.
- *Each day take several anti-cancer nutritional supplements.* Those that are most critical for cancer prevention **each day** are 5000 iu of vitamin D, 1000 to 1200 mg of omega-3 fatty acids, about 3000 iu or about 1000 mcg of vitamin A, about 3600 mg of kelp (for iodine and other trace minerals), about 750 mg of calcium and about 450 mg of magnesium. Also, take about 500 mg of vitamin C, but not more.

An exception is if you eat 3-4 cans of sardines each week do not take extra vitamin D and extra omega 3 fatty acids because this amount of sardines will supply enough of these nutrients.

These nutrients are needed today because all of our food is low in these nutrients, even if one eats the best quality organic food, which should be the only food permitted by law. Another major reason for low levels of these nutrients in most food is the use of superphosphate fertilizers in agriculture. These are growth stimulants that are allowed to be used on all crops today, even on organically grown food. *They do tremendous damage to the world's food supply and need to be banned.* Some will say we would all starve without them, but this is not true if one learns how to grow food sustainably.

Yin disease. Also, **AVOID** high doses of vitamin C, anti-oxidants, herbs and avoid all homeopathy. The reason is that all nutritional supplements, herbs and especially homeopathy are very *yin* in macrobiotic terminology. This means cold and expanded in physics terms. Taking many supplements causes the body to be too yin, which is associated with cancer.

- *Once a year, have a hair mineral analysis only from Analytical Research Labs.* This is a simple, non-invasive and inexpensive preventive test. Look for warning signs of poor health such as a four lows pattern, a step up pattern, low zinc, poor eliminator patterns and high toxic metal levels - especially elevated copper or cadmium. Correct these problems quickly with a development program.
- *For more cancer protection, each day do a coffee enema and use a reddish heat lamp sauna for half an hour.* Avoid most other detoxification methods such as ionic foot baths, clay baths, far infrared saunas, repeated colonic irrigations, cleansing diets, baths, fasting and others. These are either somewhat toxic or too yin in macrobiotic terminology.
- *Each day do the 'spa morning routine'.* *These are the healing and detoxification procedures - the neck pull, the spinal twists, the pulling down exercise, foot and hand reflexology and the use of a red heat lamp sauna.* These are powerful, yet simple methods you can do at home each day to improve health and help prevent cancer. For details, visit **www.drlwilson.com**.
- *Embark on a complete development program.* This includes all of the above. However, it also includes an individualized supplement program to balance the oxidation rate and the sodium/potassium ratio on a properly performed hair mineral test. The program also causes the body to become more yang in macrobiotic terms, moves the body into a more parasympathetic condition, and helps move subtle energy downward through the body from the head to the feet. All of this helps prevent cancer.

Early detection of cancer is what the medical profession calls cancer prevention. This is the use of various tests to find cancers early. Standard methods include:

- *Mammograms, CT scans and other x-rays scans.* Problems with these methods are radiation exposure, which can increase the chances of cancer.

- *Safer medical tests include breast and other thermography, ultrasound, an occasional chest x-ray, and MRIs.* These tests are better and are okay once a year.
- *Non-traditional blood testing from American Metabolic Laboratories in Florida, USA at (954) 929-4814.* This laboratory will mail you a doctor's prescription and a kit with vials for blood and instructions. You take the kit to any blood testing laboratory in your area. No doctor visits or prescriptions are needed. The cost is about \$550.00 USD. Tests such as human chorionic gonadotropin can be helpful to assess how much cancer is in the body.

NATURAL CANCER CORRECTION

For most people with a diagnosis of cancer and for cancer prevention, we suggest a complete development program with one of the approved Helpers listed at www.drlwilson.com. The program consists of a diet with a lot of cooked vegetables with each meal, a healthful lifestyle with plenty of rest, 8 to 10 individualized nutritional supplements, and six detoxification procedures. We also recommend 3-4 cups of peau d'arco tea from Herb-care.com only.

Other natural methods. In conjunction with a complete development program, we sometimes suggest Salve-X by Virxcan, the Budwig protocol (not the Budwig diet), vitamin A, essiac tea, or apricot pits.

Holistic health providers offer many other natural therapies for cancer. However, we don't recommend most of them because we have seen too many failures with intravenous vitamin C, insulin potentiation therapy or IPT, medicinal mushrooms, herbal therapies, cesium, germanium, homeopathy, use of healing machines and others.

We formerly recommended the Kelley metabolic cancer therapy. It is one of the best. However, it is very costly and not as good as a newer development program. We also formerly recommended Cantron or Protocol. However, these products are not testing as well for us today.

NOTE: The methods above are not approved or recommended by the American Medical Association or the American Cancer Society. In fact, these powerful groups often do their best to discredit and destroy alternative therapies for cancer.

IMPROVING SUCCESS WITH A DEVELOPMENT PROGRAM

Some of the suggestions below repeat information given above. This is intentional to emphasize the importance of the information.

- *Reduce stress as much as possible.* Causes for stress include anything that worries or upsets a person in any way - physically, emotionally, mentally or spiritually.
- *Do the pulling down exercise a lot.* This is discussed in Chapter 6. Do it for an hour each time, at least twice a day.
- *Do not combine a development program with other nutritional, herbal, homeopathic or healing machine-based programs. **Combining usually ruins the development program.*** This can be very tempting because websites and well-meaning family members often suggest this or that supplement or method.

You may combine a development program with chiropractic, which we suggest. You may also combine a development program with chemotherapy, surgery or radiation, but we usually do not recommend this. Chemotherapy, and especially radiation, poison and weaken

the body. Surgery also causes poisoning with anesthesia and other drugs. However, in a few cases, it helps to remove a large tumor or for other reasons.

- *Follow the program diligently.* This means do the entire program as well and as consistently as you can. The program is the product of many years of research and you are not likely to improve upon it. Holistic physicians, often with little real experience with cancer, are among the worst offenders here. They may attend a seminar or workshop and suddenly feel they can do better than experienced people by changing something. In our experience, this is almost always harmful and sometimes disastrous. We encourage research, but with cancer there is little “wobble room” and a simple mistake can be lethal.
- *Remain committed.* Plan to continue your development program for at least a year after obvious tumors have shrunk or one begins to feel better, in order to avoid relapses.
- *Read about your program and keep the faith.* If you believe strongly in the program, you will tend to relax, follow directions better and have a better outcome.
- *Rest a lot more.* This is primary. Go to bed by 8:30 PM or earlier each night, nap each morning and afternoon, if possible, and try to get 9 to 10 hours of sleep every 24 hours. The early hours of the evening are the best times for rest. It is normal to feel exhausted at times when you are healing.
- *Be sure to drink two to three quarts of quality spring water or carbon-only filtered tap water daily.*
- *Avoid far infrared saunas.* These can make you worse due to EMF emissions. It is possible to convert some far infrared saunas to reddish heat lamp saunas by adding light bulbs if the far infrared one is large enough. Visit www.drlwilson.com for details on how to do this.
- *Stay positive.* Cancer cells secrete substances that contribute to discouragement or depression. Natural ups and downs in the healing process can also cause fear and discouragement. Research by Drs. Simontons and others indicates that staying positive is very helpful for success with cancer.
- *Stay realistic and grounded.* Always keep in touch with your Helper or practitioner. In our experience, healing cancer is not a do-it-yourself proposition, and not all reactions are positive. Unrealistic and ungrounded thinking can cause death with cancer. Many people make small errors in following a development program, such as combining it with other programs, and this can negate the benefits of the program.
- *Avoid naysayers and negative input.* Exercise care about whom you speak with about your program. Thoughtless or stray words from doctors and others can have a great influence on anyone who is ill. Strictly avoid the naysayers if you really want to get well. This can include others who do not support your efforts.
- *Do not expect the support of family and friends when you do a development program.* This is unfortunate, but true. Instead, be a wise pioneer and stay in touch with your Helper.
- *Use whatever helps you to stay positive.* This might be prayer, affirmations, watching funny movies, reading about angels that heal people, taking a quiet walk every day, going to church, reading uplifting books or listening to inspiring CDs. The 23rd psalm helps many.
- *Think about your life.* Any health challenge can cause a person to question why he or she wants to be alive. A number of articles at www.drlwilson.com address this issue.
- *Think spiritually.* You are more than your physical body. This attitude alone allows one to have a greater love for the self and for the world, as well.
- *Finally, remember that miracles can occur, but they are no substitute for commitment, common sense and “working the program”.*

36.

INTRODUCTION TO MENTAL HEALTH

Laura, age 28, recently wrote to me that “I don’t remember ever feeling this good emotionally” . She had begun her program only three and a half months ago and had complained of fatigue, anxiety, brain fog, confusion, depression, irritability, mind racing, mood swings, obsessive/compulsive tendencies, panic attacks and seizures. She also had migraine headaches, sinus headaches, premenstrual tension and very poor tolerance of any stress. These are unfortunately common symptoms in thousands of young women today.

Three months later, her only complaints are minor degrees of mood swings, anxiety, fatigue, and some mind racing. Seizures have diminished from several per month to none.

When I first met Dr. Paul Eck in 1981, he told me that mineral levels, ratios and patterns on a hair analysis are closely related to our thoughts, emotions and behavior. Trained as a medical doctor, I found this difficult to believe. I recall not even wanting to talk about the idea with others, for fear they would laugh at me. However, I respected Dr. Eck’s brilliance, so I quietly decided to test his concepts in my own nutrition consulting practice.

I would send in a hair sample of a client and then interpret it the way Dr. Eck suggested in terms of psychological insights. Then I would ask many questions of the client to see if the hair analysis indicators seemed true. I was surprised again and again with the accuracy of the hair test. When I followed Dr. Eck’s suggestions fully, I also began hearing the positive reports, such as the cases in this book, of improvement in people’s anxiety, depression, bipolar symptoms and other mental health conditions. I came to share Dr. Eck’s excitement and love for this fascinating aspect of development science.

SECTION ORGANIZATION

This chapter and the following ones discuss the large topic of mental and emotional health in the following way:

- **Chapter 36** (this chapter): Principles of current and alternative mental health care, three basic levels of brain consciousness, three levels of brain functioning, and other topics including vitality, awareness, intent, intelligence, judgment and wisdom.
- **Chapter 37: Level 1 or ‘basic computer’ disorders of human beings.** These include memory loss, dementias, cognitive disorders, epilepsy, suicidal thoughts, Parkinson’s disease, and some developmental and learning disorders.

- **Chapter 38: Level 2 or ‘animal brain’ disorders.** These are mainly mood, affect and impulse control disorders and include depression, anxieties, bipolar disorder and others.
- **Chapter 39: Levels 3 or ‘tuning’ disorders.** The human brain can tune to various channels or frequencies like a television set. Disorders include narcissism, introversion, extroversion, psychism, mediumship, schizophrenia, violence, psychopathic and sociopathic behaviors.
- **Chapter 40: Combination and breakthrough disorders.** These include panic attacks, PTSD, phobias, hypoglycemic attacks, insomnia, narcolepsy and brain fog. This chapter also discusses mental or spiritual development. This has to do with enhancing all aspects of brain functioning using development science and perhaps other methods.
- **Chapter 41: Sexual aspects of minerals and development science.**
- **Chapter 42: The personality qualities of individual minerals.**
- **Chapter 43: Personality aspects of the major ratios and patterns on a hair analysis.**

CURRENT MENTAL HEALTH SCREENING AND TREATMENT

Modern psychiatry and psychology are largely based on diagnosing or labeling people. This normally results in drug treatments that 1) ignore horrible diets and unhealthy lifestyles, 2) add many toxins to the body and mind, 3) can have horrific side effects such as suicide and homicide, and 4) are still not that effective, in many instances, because they do not address deeper causes of many disorders.

In addition, psychologists do plenty of mental health screening. However, the screening tests are often not too accurate. For example, the *Columbia Suicide Screen* has a false positive rate of 84%. This means that out of every 100 children the test identifies as a “suicide risk”, 84 are falsely labeled. This kind of mislabeling can do psychological damage, as well as lead to drug dependency. Children in public school are labeled based on simple questionnaires, at times administered without parental permission. The latest example is called **TeenScreen**. Every parent should be aware of it. You may wish to keep your child out of school the day it is administered to avoid misdiagnoses and possible drug therapy based on a simple questionnaire.

BASIC PRINCIPLES OF THE DEVELOPMENT APPROACH

Correction of mental and emotional problems with development is often quite simple. An early case that helped me understand the power of this program involved the mother of my assistant:

Mrs. Markham was a middle-aged woman with such severe agoraphobia of 13 years duration that she rarely left her home. She lived three thousand miles away. Her daughter had her send us a hair sample. She had a very a high copper level, as did her daughter. We mailed her diet suggestions and seven nutritional supplements to balance her body chemistry. I had not worked with phobias before, and did not know what to expect. Within six months, Mrs. Markham got completely well, according to her daughter, who spoke with her often and was herself quite skeptical about hair analysis and development.

Concepts that can help explain how this is possible include:

- *The mind-body link is far greater than is presumed.*
- *Toxic metals have profound effects on the brain and on behavior.*

- *The mind can often heal itself of many wounds and traumas when it receives what it needs nutritionally, and when toxins are released from the brain.*
- *Development seems to give a person a kind of 'safe environment' in which to heal, much the way a good counselor provides a safe environment for his patients.* It is as though normalizing body chemistry works as a type of nutritional support system that greatly aids and facilitates mental and emotional healing.
- *Retracing occurs in the mental and emotional realms.* For example, memories and traumas can be associated with specific mineral levels, ratios and patterns. Thus, as a person retraces an old mineral pattern, memories and feelings associated with that mineral pattern can be brought to conscious awareness. This is a simple, safe and often very effective way to access buried feelings and traumas.
- *Emotional traumas are layered in the body, as with physical imbalances.* This fact can help one understand why a particular emotional symptom may hang on for a time, while another may resolve quickly. It can also help a person to stay with a development program to uncover deeper layers of both physical and mental imbalances.

HIDDEN TRAUMAS AND THE STRESS RESPONSE

I think of a trauma as a shock to the brain and nervous system that is so severe it cannot be processed and resolved at a person's present level of awareness and functioning. As a result, the body and brain attempt to avoid, compensate or work around the memory of the event in various ways. Unfortunately, these unresolved traumas alter the functioning of the brain in often very dramatic and serious ways. Also, most are unconscious, so the person does not even realize the compensation is occurring. The original shock often occurs early in life, and a person may build an entire personality around the effects of the trauma.

Emotional wounds. The most common type of traumas are situations or events that simply overload a child's nervous system. For example, if a girl was sexually molested at a young age, she may block out the unpleasant experience at a conscious level, but it continues to color her responses to stress for the rest of her life in odd ways. She may find herself uninterested in men and more interested in sex with women. In other cases, she may find herself oddly attracted to scoundrels or even violent men, one of whom she may marry. This, in turn, causes untold suffering, unhappiness, and often results in illness or even her early death.

Biochemical traumas. A common traumatic event for babies is a very fast oxidation rate. This can cause fear, anxiety, paranoia and other deep feelings and emotions. These may then color one's childhood, and indeed the rest of one's life. Another biochemical trauma might be the presence of excessive mercury or copper in the brain. This upsets the body, and may cause a person to adjust to it by developing personality idiosyncrasies that allow one to cope better with the effects of the toxins in the brain. Even an accident could cause a structural imbalance that one must compensate for. This could alter the personality and the body structure for life, or at least until it can be properly healed.

Hidden traumas affect most people, and are commonly released during development programs. Reasons why this occurs so often with this approach are:

- *Increasing adaptive energy, of itself, causes healing.* More adaptive energy, all by itself, improves thinking, perception, memory and other mental faculties. This may allow a person to re-experience and heal an old emotional trauma or wound completely. A severe emotional

trauma may require several flare-ups or healing crises before it is completely resolved. This healing effect of development can also be used in conjunction with psychotherapeutic or other types of interventions to enhance their effectiveness.

- *Removing toxic metals.* By itself, this can bring up certain memories or emotions, in our experience. This may seem unusual. Later chapters in this section explain how toxic metals can relate to specific emotions.
- *Retracing mineral patterns that one was in years ago, such as a low sodium/potassium ratio, may trigger a long-suppressed memory.* This can also help uncover and resolve old traumas.
- *Heating the body, particularly with a near infrared sauna.* This activates thousands of enzymes and speeds the removal of toxins of all kinds. The process can also definitely trigger memories and thus help resolve old physical and emotional problems.
- *Creating a biochemically safe internal environment can help bring up and resolve traumas.* This is due to reducing internal stress on the body, particularly stress on the nervous system.
- *Balancing the oxidation rate and other aspects of yin and yang forces in the body enhances all healing, including the resolution of deeply-buried traumas.*
- *More zinc and selenium, in particular, appear to have specific healing effects upon the emotions and the brain structures of most people.* They may enhance or activate specific brain centers that then allow a person to relax, perceive better, and more easily resolve stubborn conflicts and traumas.
- *The Roy Masters meditation exercise is designed specifically to bring up and resolve old traumas.* It works wonderfully, especially for some types of conflicts and traumas.
- *Studying the correct intellectual material, as suggested in Chapters 2 and 6, may also bring up and help resolve and release certain conflicts and traumas for some people.*

THREE TYPES OF BRAIN CONSCIOUSNESS

The brain is by far the most complex and delicate organ of the human body. It is the crowning achievement of mankind and works in ways not shared by any of the higher animals. It is also prone to a great number of dysfunctions. The standard classification of these problems is found in the *Diagnostic And Statistical Manual of Mental Disorders* or the DSM.

A possible way to simplify and understand all these dysfunctions is to divide human consciousness into three types based purely on the evolutionary levels of the brain. These are 1) *a mechanical level*, 2) *an animal-brain level* and 3) *a human or 'tuning' level*. Let us explore each of these.

Level 1. The physical or simple 'computer' level of brain functioning. This level of functioning is similar to a computer in many ways. It basically involves memory and processing abilities. This level of functioning is shared by animals and perhaps even by some higher plant life as well. Disorders that fall into this category include:

- *Memory disorders such as amnesias and dementias.*
- *Thought or cognitive disorders other than memory impairment.* These include delirium, neuroses, fixations, the effect of addictions and others.
- *Other thought disorders include factitious disorder, malingering, masochism, sadism and perhaps others.*

- *The basic emotions of attraction and repulsion, sometimes falsely called love and hate, are also on this level. Even plants know when to grow toward or grow away from certain soil, temperature or water conditions. While these may not seem like emotions, they are technically movements or motions at the most primary level.*

Level 2. The animal or emotional level. Animals share this level of functioning with human beings to a large degree. Animals feel things and are subject to disordered feelings and emotions. Dysfunctions that affect primarily this level include:

- *Mood disorders such as anxieties, depression, bipolar disorder and others.*
- *Impulse control disorders such as pyromania and kleptomania.*
- *Somatoform disorders such as hysteria, hypochondria and most sexual disorders.*

Level 3. The human, ‘tuning’ or spiritual level. This level of functioning is mainly limited to human beings. Higher animals may possess some of its capabilities, but usually not much. This level concerns a unique human ability called *tuning*. It is the concept that the human brain can literally tune itself to different dimensions of consciousness. It is somewhat like tuning a radio to various stations. When tuning is working correctly, we are present in the physical dimension, we can read situations more or less correctly, and we can *tune in* or relate to others easily and fully. When the tuning function does not work right, the following may occur:

- *Introversion.* This is tuning into oneself, often excessively and in a morbid way.
- *Narcissism.* This is also a form of tuning into oneself, often to the exclusion of others.
- *Autism.* Some autistic children tune to themselves and seem to tune out the world.
- *Psychic tuning.* Psychics and mediums seem able to tune into the realm of dead people, spirits and, at times, other beings.
- *Schizoid disorders, spaciness or detachment.* This is common and associated with children and with copper toxicity.
- *Schizophrenias.* In this dysfunction, one tunes permanently to a different dimension, often with visual and auditory hallucinations and delusions that can be extremely frightening.
- *Psychopathology and sociopathology.* In this dysfunction, a person tunes out society and caring about others. These people seem to lose touch with the human dimension of living. They tune into their own thoughts and animal desires in most cases. They lose regard for human life, property and all human compassion as a result. As a result, they take risks and harm others in ways that are clearly illegal and immoral.

Tuning dysfunctions are the most dangerous, in most cases. They are also the most interesting for psychiatrists because of the rich variety and interesting symptom pictures.

Combination and breakthrough disorders. These involve more than one of the levels described above. Simple combination disorders include brain fog, malaise, insomnia, narcolepsy and perhaps other personality disorders, some dissociative disorders, and perhaps some sexual and eating disorders.

Breakthrough disorders may occur when a lower level of functioning ‘breaks through’ and influences a higher level of brain functioning. Examples are post-traumatic stress disorder, panic attacks, phobias, hypoglycemic attacks, iron breakthrough disorder and perhaps others.

Another kind of breakthrough disorder involves sporadic material from other realms that suddenly impinges upon or ‘breaks through’ to waking consciousness. Examples are psychic or intuitive flashes or revelations, or, for example, hearing a voice from out of nowhere that warns you of an impending disaster so you can avoid it.

One can say this is a type of schizophrenia. However, it differs in that 1) it is random without any pattern and 2) it is not dysfunctional in the same way as schizophrenia. It may even be called inspirational or genius if the material that comes through is of a high quality, such as a brilliant invention that one just wakes up knowing about. A composer might suddenly hear a new symphony that just seems to play in the head. Religious people may suddenly receive a ‘message from God’, for example, or hear a choir of angels. Such incidents are difficult to explain unless viewed as a type of breakthrough phenomenon.

CONSCIOUS, SUBCONSCIOUS AND SUPERCONSCIOUS FUNCTIONING

This is an older concept of mental health that may also be extremely helpful. It ties in closely with development science in some surprising ways. Two basic types of brain functioning are the *conscious* and the *unconscious* aspects of the mind. The unconscious includes the *subconscious* and the *superconscious* minds. Let us explore these aspects.

The conscious mind. This is all that one is aware of during the time one is fully awake. It includes our thoughts, memories, emotional content and perhaps even some of our dreams as they relate to our conscious daily activities.

The subconscious. This refers to all that a person is not aware of when fully awake. It includes buried memories and traumas that one cannot face consciously. It may also include hidden motives, buried fears and desires, and more. In fact, the human mind is like a gigantic computer with thousands of programs running in the background, most of which are completely unavailable to the person consciously. Many conflict with each other and use up valuable memory and processing capabilities. This is a dilemma many people face every day.

The superconscious. This is not part of mainstream psychology or psychiatry. It is included because it is a fact, in my experience. It consists of hunches, intuitions and other insights that one receives from elsewhere. It might come through as the unfoldment of a talent such as playing the piano or a brilliance in physics, perhaps. Another example might be praying for help and suddenly getting an idea as to what to do. This might come from the subconscious mind, but plenty of stories and dreams attest to the fact that human beings can receive guidance from other realms, usually in answer to prayers. The superconscious was not recognized by Sigmund Freud, MD, the father of modern psychiatry. However, he knew that, at times, very positive information can break through into waking awareness. He believed that dreams were the main way this happens, which is true if one pays attention to one’s dreams. If one ignores dreams, much of this information is lost to waking consciousness.

PROBLEMS WITH AN UNTAMED UNCONSCIOUS MIND

The importance of discussing the unconscious mind is to emphasize just how little of our minds most of us control. Sigmund Freud and others knew this over 100 years ago. However, most people, including most medical doctors, still worship the conscious mind and pay very little attention to what lurks beneath. Problems with an uncontrolled unconscious mind are:

- *It is usually very disorganized.* This means some thoughts conflict with others, so it is basically a jumble of impressions that make little logical sense. It is like a computer with thousands of conflicting and confusing programs.
- *Since these 'mental computer programs' take up a lot of memory and processor capability, they hamper learning and general mental functioning.* This is like an overloaded computer that runs slowly and poorly as a result of all the programs running in the background.

Consequences of this common situation include:

- *Poor decision-making.* Decisions are too often based on one's old emotional wounds or traumas, rather than on common sense and logic. It is like a computer basing its output on old, hidden programs that are often irrelevant and even conflict with each other.
- *Inability to stay focused in the present.* This is due to the hidden influence of so much material from the past, plus anxiety over the future.
- *Wasting time trying to process the unconscious material but with little success.* This is like a person trying to uninstall old computer programs without knowing how to do it properly. Human beings often try to resolve their emotional traumas by entering professions such as psychology, or marrying a person who resembles the parent who abused them, or in other non-productive ways.
- *Frustration, anger, negativity and often depression eventually set in because the mind does not work well.*

This describes the life of millions of people today. Let us examine this in more detail.

A disorganized mass. Most unconscious material is a jumble of ideas, impressions, memories and traumas. In this sense, the human is far worse off than most computers. At least their programs are limited in number and well-organized, even if unnecessary. Most children are simply not able to organize all of their experiences very well because they are growing very fast and many lack an adequate structural framework for integrating their experiences. Many also simply do not have the time or don't take the time to sit quietly and organize their world. Some are better at it than others.

Religion, more than any other activity of human beings, offers a way to organize the chaos of daily life. This is why religion is so important for human beings. Perhaps it is why systems such as communism and fascism that attempt to do away with the people's religious beliefs, always fail. Taking the time to process one's life is a problem that is solved today in part by children staring at computer screens. It used to be handled by sitting in front of a teacher at school or reading a book. The computer screen works, but is far too interactive for real contemplation. This is one reason for ADD, ADHD and perhaps even autism in some cases. The children simply cannot process their lives well enough.

Adults usually have a little more time for processing, but not much today. In past years when life was slower, it was far easier. As a result, more and more adults who have never adequately processed their own lives are raising children whom they cannot assist very well to organize their reality. This just compounds the difficulties of the children. The school system today makes the problem even worse by focusing on test scores rather than self-understanding and self-awareness techniques such as meditation. Once again, religion, while far from perfect,

is helpful to provide guidelines for raising children and for many other activities as well. It is one reason for the current popularity of very structured religions like Islam.

Unconscious material conflicts with itself . Unprocessed or unintegrated mental material will tend to contain some conflicts. For example, some memories of one's father will be positive, while other will be negative.

Taking up valuable memory and processing ability. Constant attempts to organize the often conflicting unconscious thoughts, feelings, memories and desires take up a person's time and mental energy. It can upset sleep and impair learning because the person is not very present. Instead, the mind wanders and daydreams, lost in its own unconscious thoughts much of the time. This is like a computer that runs poorly and slowly because it is always processing something in the background.

The dark force or power in most people's lives. The most destructive aspect of the unconscious is that it silently and secretly influences every decision one makes. This occurs because we all consult the unconscious often. This is unavoidable and the way we are "wired". If the unconscious is disorganized, our decisions will often be somewhat random or affected in odd ways by our conflicting unconscious material.

Severe health problems. The mass of disorganized mental material usually causes poor health due to chaotic lifestyles. The person is often torn in several directions and unable to integrate the lifestyle in a healthy manner.

Breakthroughs occur. At times, an old thought or memory breaks through to consciousness and overwhelms a person. This is commonly the case with post-traumatic stress disorder. The person can hardly function because nightmares and negative thoughts dominate the mind. He or she may become self-destructive or may harm others because judgment is seriously impaired. This is like a pop-up message or banner that suddenly appears on a computer screen and obscures most of the screen. The analogy is good, except it is far worse in human beings because the pop-up memory obscures rational judgment and decision-making. These breakthroughs can occur at any time, such as when one is driving or when a pilot is flying an airliner with several hundred on board. It is a dangerous phenomenon that happens more than one may think.

Becoming negative. An end result of all the above is that most people eventually turn negative and discouraged. They give up hope they will ever heal their mental affliction. This is a common cause of fatigue and depression today as people begin to feel overwhelmed with all the stimulation and distractions in their lives.

Healing the unconscious. This is a long process. More rest, a healthful diet and lifestyle, the proper drinking water, daily use of a near infrared sauna and the Roy Masters meditation exercise can work together to move the process along in a wonderful way.

THE VITALITY PRINCIPLE IN THE DEVELOPMENT APPROACH TO MENTAL AND EMOTIONAL HEALTH

This principle is discussed in a general way in Chapters 8 and 25. However, it has special applications in the field of psychology in the following ways:

- *High vitality is required for adequate mental activity.* This is the most critical aspect, and why development encourages more rest and sleep, including going to bed by 9 PM every night or even earlier if one is tired.
- *The body will suppress or block feelings, memories, perceptions and other mental activity if adaptive energy is too low.* Autism, depression and perhaps other mental conditions could be, at least in part, methods of partial withdrawal due to an impaired level of energy.
- *Energy is even required to feel feelings.* This means that as energy declines, a person simply cannot feel and process their experiences nearly as well.
- *Healing old emotional traumas requires very high energy or vitality in some cases.* This can explain why many cannot heal their traumas even with help from counselors and others.
- *Depression, emotional withdrawal and even suicide can be ways a person may decide to cope with very low energy.* This is a very important concept regarding the nature and treatment of depression and suicidal tendencies. Most often, the energetic component of these disorders is overlooked, at times with disastrous consequences.
- *Decision-making is often unconsciously based on conserving adaptive energy.*
- *Enhancing adaptive energy alone, using development, often causes emotional retracing.* Long-forgotten traumas, memories, feelings, perception and beliefs may suddenly arise, seemingly out of nowhere. One may be shocked at the thoughts and feelings that lie dormant within, as they are brought up for review and release. The only trigger needed, at times, is an increase in one's vitality.
- *Low vitality alone might cause a brittle or unstable personality.* For example, such a person may develop anxiety attacks or major depression from a seemingly minor shock such as a squabble at work or a pet becoming ill. The person seemed stable, but was 'running on empty'. This is common today, due, in part, to low-quality foods in the diet, insufficient rest and other types of internal and external stress factors.
- *A person's vitality level very often determines his overall outlook on life.* For example, high vitality is associated with greater self-confidence and a more positive outlook on life.
- *Increasing adaptive energy with development therapy will enhance the effectiveness of most other medical and psychological interventions.*
- *The vitality level often influences a person's control strategy.* Fast oxidizers with higher energy often control overtly with threats, intimidation or a physical show of force. Slow oxidizers or anyone with low energy tend to control through seduction, spoiling, enabling, false 'going along', secretive plotting and other methods that do not require as much vitality.
- *Identity is, in part, determined in many people by the adaptive energy level during the formative childhood years.* For example, if a person was sickly and often tired as a child, he or she may grow up believing this is "who I am". One can build an entire identity around traits such as fatigue, mental confusion, or believing one is stupid. In fact, it was just an energy problem that occurred during the formative years.
- *Once formed, an identity based upon energetic imbalances may be hard to change.* This is one reason to work with children as close to birth as possible so they grow up free of false perceptions about themselves and instead grow up centered and mentally healthy.
- *Excellent vitality is also needed for mental development or enhancement.*

QUALITIES OF THE MIND

This short section briefly explores the meaning of words related to the mind.

Awareness. This concept has to do with how well a person is tuned into his immediate environment. It answers the question: What is going on around me? Reduced awareness is associated with low vitality, spaciness or detachment, brain fog, distractibility, a lack of grounding or centeredness, attention deficits and other mental impairments. A reasonable level of awareness is a prerequisite for intelligence, good judgment and wisdom.

Awareness can be of various types. For example, animals are usually very aware of scents and sounds. However, they are less aware of intellectual matters.

All biochemical imbalances may affect awareness. The most important hair analysis patterns associated with reduced awareness include:

- *Low zinc and selenium.* Few people today have enough of these minerals. Since they are needed for important centers in the brain, this causes lowered awareness in millions of people today. Few tests, including hair mineral analysis, can reveal this clearly all the time.
- *Low energy patterns.* The main ones include a low sodium/potassium ratio, very slow oxidation, a calcium shell and a four lows pattern.
- *Resistance-to-change patterns, also called stalled transition patterns.* These include fast oxidation with a low sodium/potassium ratio, sympathetic dominance, four highs and four lows. A person may intentionally lower his awareness with these patterns to slow some kind of change. Alternatively, a reduced awareness level can lead to these patterns.
- *Elevated toxic metals.* All toxic metals are neurotoxic and tend to lower awareness, though in different ways depending on the metal:
 - *Copper* causes spaciness or slight detachment from reality. When extreme, copper toxicity causes hallucinations, delusions and some schizophrenias.
 - *Mercury* causes odd behavior and twisted reasoning that reduces awareness.
 - *Lead* dulls perception and understanding. It is associated with a reduced IQ, for example, and this definitely reduces one's awareness.
 - *Arsenic* and *nickel* have effects somewhat like lead.
 - *Cadmium* irritates and stimulates the brain, which may alter awareness. Cadmium is also associated with a male trait of risk-taking. At times this is good. However, it can be due to a lowered level of awareness.
 - *Aluminum* dulls awareness in ways that affect memory more than other areas of the mind.
 - *Manganese toxicity* is associated with a type of schizophrenic behavior that is quite different from the schizophrenic tendencies associated with copper imbalance. Manganese imbalance is much less emotional and seems totally emotionally detached, another form of lowered awareness.
 - *Iron toxicity* causes anger and rage. This always tends to reduce awareness.

Intent. This has to do with motives, deep desires and the general direction of a person's life. It answers the question: Who am I and why am I here? If a person is motivated by something hopeful and spiritually-oriented, his mental health will often be at least decent. However, if the intent or motive for action is something selfish, superficial or purely material, mental health is likely to be worse.

If one's intent is to be and do your best, to be as honest and direct as possible, and to be of great service, mental health is often superb. In development science, intent is important because many stress patterns, lifestyle problems and mental illnesses arise from faulty intent. For example, a person who wants to please everyone often runs around too much and does not

rest enough. This causes adrenal exhaustion, often at a young age. Such a person will also become depressed or angry when others do not respond the way the person desires. One who wants to dominate others often becomes exhausted from the mental effort of holding on to those around himself. In this way, intent has much to do with both physical and mental health.

Hair analysis patterns associated with faulty intent. A hair analysis offers subtle clues about intent. Patterns include:

- *Fast oxidation.* The intent is to fight hard against perceived enemies or stress.
- *Slow oxidation.* The intent is to maintain oneself in a type of lower stress holding pattern.
- *Sympathetic dominance.* The intent is often to make something happen by the force of will. The person is trying hard and pushing himself in some way, physically or emotionally. It is a common cause of fatigue, anxiety and sometimes depression when it doesn't work out.
- *A calcium shell.* The intent may be to withdraw or protect oneself from the world by becoming somewhat numbed. This is often used by sensitive individuals to allow them to function in a world they do not understand well or do not relate well within. It can work well, but eventually causes physical ailments.
- *Moving quickly through the oxidation types.* This may indicate a self-destructive intent for some reason, because it usually signals a person who is burning himself out at a young age.
- *Spiritual defensiveness pattern.* The intent may be to please another or continue with a job, relationship or attitude, even though it is not working well.
- *Low sodium/potassium ratio.* This can just be a burnout pattern. However, it can also signal a stubborn intent to continue on a set path, even when it is not working well.

Integrity. This word literally means whole and complete. It may answer the question: How do I live? Integrity has to do with honesty, courage, moral character and a genuine, integrated and consistently reasoned approach to life. A high level of integrity helps greatly with mental health, as well as with the healing of physical ailments. A strongly moral intent and integrity are also perhaps the most important traits for spiritual advancement.

Intelligence. This has to do with how well a person uses the mind. It may answer the question: What am I capable of? It is very important, but not that easy to measure. IQ tests are somewhat biased and can only narrowly define intelligence as knowledge of a certain type. For example, these tests cannot determine who will make the best mother. Nor do they measure qualities such as compassion, judgment, memory for details, ability to size up people intuitively and many others. Intelligence definitely involves memory, cognition, processing speed and the tuning function of the brain.

Biochemical factors that are known to lower intelligence include lead and mercury toxicity, B-complex vitamin deficiencies, myxedema, hypothyroidism, cretinism, Down's syndrome, a high level of fluoride in the body, low iodine and perhaps others.

Good judgment. Judgment has to do with action and decisions in particular situations. It may answer the question: How do I act at a particular time? It often involves knowledge, intelligence, intent and awareness all at the same time. For excellent judgment, one must be fully aware of the facts of the situation. Then one can use one's intelligence, driven by right intent, to discern the best course of action. If any of these traits are lacking, judgment will suffer.

Mental balance. This refers to mental flexibility, good emotional control, and good judgment. It may also refer to a strong connection between ‘the head and the heart’, meaning that one is able to balance reason with intuition and feeling.

Mental wellness. This might refer to a person’s ability to maintain mental balance and calmness in the face of mental and emotional stressors and challenges. One can often tell a person who is well mentally because they welcome mental challenges such as learning new skills, dealing with emotional issues, or other types of challenges that frighten others who are less stable or who are not functioning as well mentally and emotionally.

Nutrition is just one factor in mental wellness, but it is a critical one today in many cases. Another factor is how well one has processed his subconscious mental and emotional material so that it does not burden or restrict one too much.

Well-adjusted. This term usually refers to a person who can get along well with others in social situations. It is a desirable social trait that may have to do with tolerance, poise, a somewhat outgoing personality and perhaps self-confidence or a pleasing smile. Well-adjusted, however, can mean a person who has simply learned to go along with the crowd. This is not necessarily a helpful way to live. I would also not regard it as truly well-adjusted, but simply able to blend with others in social situations.

Wisdom. This word is somewhat out of fashion. It is always a combination trait that begins with excellent intent and integrity. It also requires high intelligence, some knowledge, excellent awareness, and good judgment in action. In ancient Oriental texts and in the bible, wisdom was always the overriding goal of all people. Development, by correcting imbalances at many levels, hopefully will help our society and its inhabitants to learn more about this elusive and important human trait.

37.

LEVEL ONE DISORDERS – DEMENTIAS, LEARNING DISORDERS, DYSLEXIA, AUTISM, ADD, ADHD, DEVELOPMENTAL DELAYS, AND SUICIDE

Jonan was 22 months old, and had hardly grown since birth. His mother had taken him to large medical centers and several holistic doctors. Hundreds of tests were run. Various drugs and nutrients were tried and seemed to make him more ill. The worst was a “very safe” oral chelation product containing only pectin and alginates. Two doses caused intense back spasms, crying and a reversal of progress with weight loss, instead of gain.

A chiropractor finally ran a hair test by a well-known lab, but one that washes the hair. It revealed a slow oxidizer pattern with a low sodium/potassium ratio. The mother asked me to set up a development program based upon it. Though somewhat uncomfortable, I agreed as I thought it would save some time and money. This turned out to be a mistake. The baby did not respond within a week, which seemed odd. I immediately decided to run another hair test with Analytical Research Labs, a laboratory that does not wash the hair.

Results were surprisingly different, and revealed a four lows pattern. This is unheard of in babies, and I had never seen one in a child this young. Jonan also had severe cadmium and mercury toxicity. These are often associated with persistent delayed development or PDD.

The presence of four lows probably explained why many other healing approaches had failed, as this is very common. It took Dr. Eck years to figure out how to handle this rather peculiar metabolic pattern. The baby responded to a four lows program within a day or two and was soon much more relaxed and growing once again. Based on this experience and a few others, I realized I ought not use a hair mineral analysis from a lab that washes the hair unless there is absolutely no alternative.

Case #2. *Jason was two years old and extremely hyperactive. He had hardly slept through a night since he was born. He quickly became known as 'the holy terror' at my office. His first hair test revealed low levels of calcium, magnesium and zinc, very high sodium and potassium levels, a low sodium/potassium ratio and high toxic metals including iron. This is a common pattern with ADHD children. They are in a perpetual fight-or-flight pattern. In this instance, Jason may have been born with high iron from an iron-toxic mother. It might have also come from formula enriched with iron, a dreadful item to give most young children in developed nations because they don't need it. Children in the tropics may have parasitic infections and require some added iron, but this is much rarer in developed nations.*

Jason's mother called within a few days after he began his development program to report that he was like a different child. She wished she had come in sooner. He calmed down and his disposition improved dramatically. I also explained to his mother how she can 'adjust

his behavior' by increasing or decreasing the amount of calcium and magnesium supplements she gave him. This ability is another advantage of development, in that it is safe for parents to adjust the dosages according to the child's need, without fear of overdosing their babies on a drug, for example.

What I am calling **Level One** brain activity has to do with basic *computer* type of functions. These include memory and processing abilities. Like a modern computer, the brain's processor abilities are many and varied. They include higher-speed activities, multi-tasking, calculating and much more. This level also has much to do with *brain architecture*. This is the physical structure of the brain. It can be affected by genetic abnormalities, physical injuries, infections, certain toxins or brain tumors. Disorders at this level include:

- *All memory conditions such as amnesia, simple memory loss and dementias.*
- *Learning disorders of children, in particular, such as dyslexia and many others.*
- *Developmental delays and conditions such as ADD, ADHD, some autism, persistent developmental delay (PDD) and others.*
- *Other thought or cognitive disorders such as delirium due to a blow to the head.*
- *Suicide is included in this chapter. It is not a disorder, but may relate to this level of brain functioning in some way.*
- *Others might include Parkinson's disease, brain infections, and epilepsy.*

MEMORY LOSS, AMNESIAS AND DEMENTIAS

Memory in a human being is not as simple as computer memory. It involves a person's ability to focus on the material to be learned, and then to recall it easily, later. It may be viewed as a skill in many ways that some people learn early in life while others do not. However, it also has a physical component, like a computer that can lose data over time.

Memory loss. This is becoming more common as the population becomes more toxic and nutritionally depleted. A poor memory is a common complaint in doctors' offices. This is not the same as dementia, which is a far more advanced degeneration of the brain.

Simple memory loss, for example, is common today in children whose brains are loaded with aluminum and other toxic metals. As the metals are removed, children's school grades often climb quickly. Memory disorders can also be due to attention deficit, impaired energy production at the cellular level, lack of sleep, hypoglycemia and simple nutrient deficiencies.

Dementias. These are tragic and very costly to treat. Preventing dementia is easy in many instances by living healthfully, eating well, avoiding toxic exposures, and obtaining plenty of rest. Anyone over about 60 should take a powerful digestive aid and eat meat to obtain vitamin B12. Many older people would benefit from preventive B12 shots once a month or so. Using the mind seems to help, as does some daily exercise and deep breathing.

Early cases of dementia often respond to development, especially if the cause is toxic metals that can be removed quickly. Later stage cases can be more difficult to reverse, especially if there is permanent brain damage. In addition to toxic metals, dementia may occur due to arteriosclerosis in the vessels of the brain, impaired oxygenation of the body, impaired hydration, low vitality, subtle diabetes, deficiencies of essential fatty acids, vitamin and mineral deficiencies, especially vitamin B12, and perhaps even structural imbalances that occur often

with accidents, falls or just aging. Medical drugs that lodge in the brain such as anesthesia can certainly contribute to some cases of memory and other mental disorders.

I have also read of dementias that respond amazingly well to supplements of medium chain triglyceride or MCT (medium chain triglycerides) oil, phosphatidyl serine or other nutritional supplements. Each case is actually different due to many possible causes.

A possible problem with development in those with dementia is difficulty following a dietary and supplement regimen.

LEARNING DISORDERS

Learning disorders encompass a wide variety of disorders from dyslexia and stuttering to easy distractibility, ADD, ADHD and others. General comments about these disorders are:

- *Most involve disordered body chemistry.* A few cases mainly involve stress, a very sensitive child, or a problem in the learning environment such as the effect of other students, the type of lessons offered or toxic chemicals in the school or even the home.
- *Since biochemistry is often involved, most of these children respond extremely well to development programs.*
- *Food sensitivities are commonly involved in learning and behavioral disorders of children and sometimes of adults as well.* Attention to the diet is most important, and food allergy testing may be very helpful if progress on a development program is slow. Eating sugar, artificial sweeteners and stimulants are always problematic.

DYSLEXIA

Dyslexia is often a copper-related syndrome. It may respond to development programs, although dyslexia goes deeper than just copper toxicity. It is an altered perception of letters and numbers that has to do with brain integration, which is somewhat different. Development can be helpful to calm the person's mind, and this can assist with brain integration. Other techniques may be necessary along with a development program for full correction of this common condition. A good book on this subject is *The Gift of Dyslexia* by Ronald D. Davis and Eldon M. Braun (1997, 2010)

AUTISM

Autistic children are often very bright, but are poisoned with vaccines, medical drugs and other toxins acquired in utero or afterwards. They may decide to withdraw into a self-made world. This is mainly the situation with this sad condition that is sweeping across America and spreading elsewhere as well. An important hint as to the cause of this epidemic is the fact that autism is a new disorder. It was unknown before the late 1940s or 1950s. This is when the number of drugs and vaccines, especially combinations of vaccines, increased dramatically in America, in particular. Today, young mothers are third generation vaccine-poisoned. Mercury is still added to some of these shots, including flu shots. The problems with vaccines are discussed in Chapter 34.

Other contributors to the epidemic are poor quality diets, and medical and other toxins in the bodies of mothers, not enough breast feeding of infants, and overall higher stress levels in

families today. Autism is actually not one disorder, but a spectrum of disabilities ranging from very mild social anxiety to extreme anti-social and withdrawal tendencies.

More research is NOT needed about this condition, in my view. That is just a poor excuse to ignore known facts about this horror. ***Autism is preventable and mainly a doctor-caused or iatrogenic disease.*** For example, according to research by Dan Olmstead, there is NO autism among the Amish. This group does not vaccinate their children, and they eat better food, live simpler lives and tend to take many fewer medical drugs, as well.

Correction. Development is extremely helpful for most, if not all cases that I have encountered. Several patterns are common on hair mineral analyses of autistic children. Among them are very fast oxidation with a low sodium/potassium ratio, and always toxic metals. These may include manganese, iron, aluminum, copper and perhaps mercury toxicity, though they may not be revealed on early tests. At times, the symptoms of autism are identical to the symptoms of *mercury toxicity*. Mercury continues to be added to vaccines, flu shots and spewed into the air by coal-burning power plants in many nations of the world. Studies suggest that autistic children have more difficulty eliminating toxic metals than other children.

Food allergies always play a role in cases of autism, along with most instances of ADD, ADHD and other childhood diseases. Most of these children feel better on a gluten-free and casein-free diet. Development programs offer far more for these children, however, as they almost all have severe imbalances in their body chemistry.

Autism is so serious and so costly it deserves thousands of times more attention than it receives. Discussions of health care reform make little sense until this occurs. The needed reform is to stop the dangerous practices that are destroying a normal life for 1 of every 100 or more children in America and, to some degree, children around the world.

ADD AND ADHD. Causes for ADD and ADHD revealed on hair mineral analyses include fast oxidation in younger children. Most are deficient in calcium, magnesium and zinc, the *sedative minerals*. These minerals also act as *psychological buffer elements*, meaning they are needed to protect a child from all kinds of stressful situations. Without them, the child becomes hyper-irritable, anxious and easily upset.

These children need a fast oxidizer diet with no sweets or fruit, preferably, along with supplements of calcium, magnesium and other elements such as zinc and copper in the right balance. With this simple regimen, they will often calm down in a few days to a week or two. Deeper correction of food sensitivities and toxic metals will take a little longer. It is definitely worth keeping a child on a development program for a year or several years to correct these deeper imbalances that were often present from birth.

Older children and adults with ADD are usually in slow oxidation, although not all of them. Most have copper toxicity and many other imbalances on hair mineral analyses. Toxic metals that often play a role include iron, lead, cadmium, aluminum and mercury. Four lows, a high or low sodium/potassium ratio and sympathetic dominance may also be present. As the metals are removed and the body chemistry balanced, most parents report their children turn sweet and gentle in almost unbelievable ways. School or work performance also improve significantly as the person calms down. ADD in adults may also be due to deeper emotional imbalances that can be harder to correct, and therefore may take longer for full correction.

BIRTH DEFECTS AND OTHER DEVELOPMENTAL DELAYS

In almost all cases of birth defects, a hair analysis reveals an extremely low zinc level. In most cases, other toxic metals are excessive, as well. Based on these facts, I believe most birth defects and developmental delays are preventable if young mothers-to-be were tested using a properly performed and correctly interpreted hair analysis. All mothers-to-be should follow a development program to renourish their bodies before and during pregnancy, in order to have healthy babies.

Many children with birth defects improve, and some respond excellently with development. The degree of improvement depends a lot on the particular defect, the age of the child when beginning a program, and the willingness of the parents to follow the program strictly. In most cases, the child has other problems such as food sensitivities, infections and perhaps others. Important factors to consider when working with all babies and young children, especially those with developmental disorders, include:

- *All babies and children must take omega 3-rich oil for brain development.*
- *There is never a reason for constipation in a baby.* Just place a little Epsom salts or magnesium in the milk or other food until it goes away.
- *A baby's digestive system is ultra-sensitive to anything but mother's milk in most cases.* If possible, rely on mother's milk until age 3. If this is not possible, a raw, certified animal milk is often next best. Avoid soy formula or commercial formula, if at all possible.
- *Children's digestive systems, even with food allergies, are in good condition compared to most adults.* They have not had time to destroy it with food chemicals, drugs, unhealthy lifestyles and poor eating habits. As a result, *few supplements are needed*, provided a baby or child's diet is good. Results are often worse when holistic doctors give more than two or three nutritional products to babies or more than about five products for children.
- *Even symptomatic homeopathics or herbs can complicate matters and make a baby worse.*
- *Every child under age 8 or so should be considered similar to a fast oxidizer.* This means that if a slow oxidizer pattern is showing on the hair test, it is usually temporary and will change to fast oxidation as the child heals. As a result, avoid most fruit and all sweets for children. Even low-fat milk is too sweet. Always use full-fat milk unless, for some reason, the fat is bothering the child. Cultured milk products are even less sweet and may work better, such as certified raw plain yogurt, kefir and similar products.

DELIRIUM AND OTHER COGNITIVE OR THOUGHT DISORDERS

Delirium is defined as any change in consciousness or awareness accompanied by a change in cognition that develops rapidly and cannot be accounted for as being part of a dementia. It usually develops over a period of hours or days, and may be due to a medical condition, a toxin, substance abuse or withdrawal, or some other cause. Alterations of brain function might include perceptual, sensory, speech, delusional and other types of cognitive problems.

Since this may be an acute and possibly just a toxic condition, it may respond beautifully to coffee enemas, infrared saunas, lots of rest, and drinking only distilled water for a few days. Taking calcium and magnesium in large doses may also calm a person down, at least until a hair analysis can be done to identify more specific causes, including:

- *Infections, indicated by a low sodium/potassium ratio and perhaps by a very slow oxidation rate or other low vitality indicators.* Infection with candida albicans or other fungal infections is often indicated by copper toxicity or bioavailability in a slow oxidizer.
- *Toxic metal poisoning, indicated by an elevated hair level of a metal or indicators for a hidden high level of copper, iron, manganese or another metal.*
- *Hypoglycemia, indicated by a low sodium/potassium ratio, an imbalanced calcium/-magnesium ratio, low chromium and perhaps other subtle indicators.*

SUICIDAL THOUGHTS

Suicidal thoughts are in this chapter because they are often a brain processor error and therefore related to Level 1 disorders. The subject needs to be talked about more, as it is a growing and very sad problem today. It is hardly mentioned in the DSM-IV, for example. Many who commit suicide are lovely, bright young men and women who feel awful and are not receiving enough help from the medical and psychiatric professions.

Causes for suicide. These can be divided into 1) *acute or transient* suicidal feelings and 2) *chronic or longer-term* suicidal thinking patterns. The transient or fleeting suicidal thoughts and suicide attempts are often more successful, and therefore much more dangerous. They are more common among teens and young adults. The chronic type is more common among older adults, and are less likely to actually cause suicide, in most cases. I have listed below the two types of causes, acute and chronic. Each list begins with physical reasons for the problem, followed by emotional, mental and finally what may be called spiritual causes.

Acute causes of suicidal tendencies include:

- *Physical brain disorders due to drug reactions or effects.* Common problematic drugs include all SSRI anti-depressant drugs. According to Julian Whitaker, MD and other researchers, some 28 out of 34 school shooters were on SSRI anti-depressant drugs. Most ended their own lives, as well as those of others. The SSRI anti-depressants cause a detached feeling and an agitation in some cases that make some people think of suicide. These drugs now carry a suicide warning for children and young adults, but continue to be prescribed to thousands more each day. Many have never been tested on teenagers and children. Any drug or toxin could technically cause a severe mental or emotional reaction.
- *Biochemical imbalances.* These can aggravate any other cause for suicidal thinking, but may be a direct cause as well. Many with suicidal thoughts have a very slow oxidation pattern or a very low sodium/potassium ratio on a hair mineral test. They have very low vitality and become depressed as a result.
- *Acute suffering due to pain, for example.* This is possible, but not a common cause.
- *Emotional unhappiness from any cause.* Feeling unloved or uncared for, the death of a loved one, or a relationship breakup are among these common causes.
- *Self-hatred or self-loathing.* This may occur with anorexia, for example.
- *To gain emotional attention.* This is an immature reason for suicide, but not uncommon. Teens may want to attract the attention of their parents or friends, for example.
- *Mental confusion, brain fog or fixed, negative thoughts.*
- *Extreme stress with an inability to cope.* This can cause a person to just want to give up and escape from life itself. This is common in hard economic times for men, especially, and

among war veterans, in some cases. The cause could be any type of extreme stress when one does not know how to handle it, such as a divorce, loss of a child or parent, business failure or other stressor. This could also precipitate a ‘spiritual crisis’ in which a person stops believing in God or a divine human purpose, and just abandons life itself.

Chronic or longer-term causes for suicidal tendencies. These are factors that just wear people down to a state in which they no longer wish to live. They may include:

- *Physical hardship.* This might be due to starvation, oppression, drudgery, chronic pain or fatigue. It might also be due to an inability to walk, talk, see, hear or perhaps an inability to feed and care for oneself. It could be due to an inability to think or senility.
- *Chronic illness.* Cancer, and perhaps other diseases such as infections, may secrete chemical substances that decrease the will to live. This may cause a person to want to die.
- *Severe, prolonged emotional imbalances.* These might occur in schizophrenic individuals, perhaps, who are tortured by hallucinations, strange voices, or disgusting images or feelings.
- *Twisted and fixed ideas such as zealots and martyrs.* These include religious people and others who put themselves to death for a cause. They range from suicide bombers to Christian and Jewish martyrs. These people believe that dying is better than living, if one dies the right way. This common attitude can even infect business people, housewives, hospital volunteers, nurses, doctors and others who literally work themselves to death.
- *Cults, especially satanic and other groups.* This is another type of twisted or deluded thinking, usually due to a psychopathic leader who delights in death and manages to convince his followers of the same.
- *Belief in a better afterlife.* This is a common belief among some religious groups.
- *Old age thinking.* Many people just give up and die when they get to a certain age, or when they retire from their job, for example.
- *“Medical disease”.* Often the allopathic medical system quietly indoctrinates people to believe they are supposed to age and die as they get older. As a result, they load the older people with too many drugs and operations, they poison them with morphine, at times, and otherwise hasten the dying process. This is called ‘compassionate medical care’ when it is not at all. Real care would be helping these people not to age by keeping them off all drugs and helping them detoxify their bodies to retard the aging process.
- *Death-centered philosophies.* This one may upset some people. I believe that some religions and political philosophies are death-oriented. This means they do not value individual human life much at all, except for what it can do for the group, race or religion. Among them are socialism, communism and many authoritarian religious systems. These beliefs often lead to devastating wars, suicides and other horrors because they devalue life and elevate death for a cause above all things. Surprisingly, even some environmentalists encourage abortions, suicides, euthanasia and other means to reduce the population “to save the earth”.
- *A spiritual void.* This means no belief in anything beyond the physical body, such as the soul or the spirit. This is a very common belief system today, as it is subtly taught to all the children in the public schools in America and Europe, and it is taught by the secular mass media. I consider this a major reason for suicidal thinking in young people who just are confused and don’t realize what they are doing when they slit their wrists or pick up a gun and use it on themselves.

Development and suicide. A very slow oxidation rate, especially in a young person, should be a tipoff that suicidal thoughts are possible. Copper imbalance is almost always present. Many of these people just have very low vitality, and are depressed and unhappy as a result. They have been to doctors with no help, mostly because the doctors and psychologists do not realize the connection between body chemistry and one's thoughts. Development, widely used, could help reduce the scourge of suicide that wastes thousands of precious lives each year. Some report that a development program "lifted a dark cloud from my mind" or "gave me an entirely new feeling about life".

OTHER LEVEL ONE MENTAL CONDITIONS, IN SOME CASES

Parkinson's disease, lupus, multiple sclerosis and amyotrophic lateral sclerosis are discussed in Chapter 32 with neuromuscular conditions. Epilepsy and brain infections are discussed in Chapter 31 because they are considered neurological diseases rather than mental illness. Their causes are often biochemical as well, and they usually respond very well to development programs.

38.

LEVEL TWO DISORDERS – DEPRESSION, ANXIETY, BIPOLAR DISORDER, AFFECT DISORDERS, VIOLENCE, ADDICTION AND GRIEF

Rachel, age 32, was severely depressed with suicidal tendencies. In fact, she cried most of the time when she first called me on the phone. Her hair analysis revealed typical patterns of depression. Her oxidation rate was very slow with a calcium level of 241 mg%. This is a calcium shell pattern. It often occurs in sensitive individuals, and in those under a lot of stress or who do not handle stress very well.

High hair calcium also indicated hidden copper toxicity. Copper imbalance is often associated with depression, as well as other emotional difficulties. In this case, the hair copper was very low at 0.9 mg%. Very low copper with slow oxidation is an indicator of hidden and usually biounavailable copper, but only when it occurs in slow oxidizers.

Rachel happened to mention she had a copper intra-uterine device. I suggested this be removed at once, although I probably could have helped her even with the device in place. She also changed her diet and took several supplements based on her mineral analysis. Within six months, Rachel's depression was completely gone. A retest hair analysis showed a lower hair calcium level, a faster oxidation rate and a more normal copper level of 1.3 mg%.

Case #2. *Mark, age 57, is a medical physician who has followed a development program for four years to the extent that he took his supplements. He was not as careful with his diet or lifestyle, and consumed 2-3 mixed drinks and 3-4 glasses of wine every evening after work. Quite suddenly, in the past six months, he quit alcohol and sugar completely. His wife also commented that his anger has diminished. He also lost 100 pounds and looks and feels 10 years younger. Nothing had apparently changed in his stressful lifestyle to cause the shift.*

However, on his most recent hair analysis, manganese rose from 0.077 to 0.14 mg%. Iron jumped from 0.8 to 1.2 mg%. While this is still within the normal range, it usually indicates an elimination of biounavailable iron. Iron, aluminum and manganese are often eliminated at the same time. Iron and manganese are associated with rage and anger, which often causes people to drink alcohol and even eat sugars to calm themselves. As Mark eliminated these metals, perhaps this enabled him to relax and be less angry, which helped his drinking problem.

In addition to having a wonderful memory and processor like a modern computer, human beings also have what is called an *animal brain*. Animals are primarily concerned with survival. They posture or move at all times to maintain themselves in the face of continuous environmental stress and pressures. The purpose of the animal brain is to mediate this and keep the animal ahead of its enemies and its competition for food, shelter and other survival needs.

In human beings, the animal brain is also concerned with survival and stress management. For example, the sympathetic and parasympathetic nervous systems are part of the animal brain. They balance the need for survival with the need for rest and regeneration. Disorders here arise due to mental or biochemical factors that alter the responses of the sympathetic nervous system. This was discussed in Chapter 11. Alterations of the fight-or-flight response often cause Level 2 disorders of mood, impulse and affect. Let us discuss a few of the more common ones.

DEPRESSION

Warning: *Anyone who has a desire to injure or kill oneself or another must see a qualified doctor for help. Do not attempt to solve severe depression problems by yourself. This applies especially to young people. Also, do not stop antidepressant medication without supervision.*

Depression is the second most common complaint in doctor's offices. Most of the time, development improves it dramatically and often completely and permanently. Lifestyle and/or biochemically-related causes for depression include the following:

- *Low adaptive energy.* Dr. Eck found that many cases of depression are due to low energy and adrenal exhaustion. This is a simple explanation for some depression. Having a low energy level day after day is quite depressing. It can make a person just want to withdraw.
- *Depression as a positive way to deal with stress.* Depression feelings can be a coping mechanism to deal with a very low energy level or mental exhaustion. Withdrawing is a way to conserve the little energy the person has to avoid becoming even more dangerously tired. In this regard, Dr. Eck realized that depression can be a beneficial adaptation to the stress of a tired body and/or mind.
- *Lack of a natural "high".* Our bodies produce chemicals that help us to feel good, and among them are the adrenal hormones cortisol, cortisone and corticosterone. These actually cause a natural high or positive state of mind. Feelings of depression occur in most cases of adrenal depletion or *burnout*, in part, because the levels of these chemicals decrease. Many other chemicals produced in the brain and in each cell also convey messages of either joy and happiness, or sadness and disease. Feelings of depression arise easily when these hundreds of chemicals are not produced in the perfect balance.
- *Hypoglycemia.* Glucose is one of the most important mind-altering chemicals. Our brains are highly dependent upon a constant supply of it. Lowered cellular sugar, as occurs in hypoglycemia, is a common cause of mood fluctuations, confusion and at times, depression.
- *Deficiency of essential fatty acids.* A faulty balance of the essential fatty acids can be another reason for depression. Most people have too much of the omega-6 fatty acids and low levels of omega-3 fatty acids. This is due to the widespread use of vegetable oils, and feeding livestock on corn instead of allowing them to graze on grass and wild plants, which are higher in the omega-3 fatty acids.
- *Food allergies, toxic metals, nutrient deficiencies and other biochemical imbalances.* Potentially, any number of imbalances can affect the brain in subtle ways that might cause negative feelings. This is why an individualized program for each person is always best.

- *Lack of emotional balance.* Another cause of depression is feeling as if one is on an emotional rollercoaster. Copper imbalance is closely associated with this cause for depression feelings because it tends to exaggerate emotional reactions.
- *Acute stress and loss.* Intense stress, loss of a job or a partner, or grief from any cause will cause temporary feelings of depression in most people. Often there is a need to withdraw in order to regroup and plan one's next actions in these cases. These episodes should not be treated as a disease unless the person becomes stuck and cannot emerge from the episode.
- *Wanting something you cannot have.* This cause of depression is based on fantasies, delusions or just immaturity. It may remind one of the attitude of small children who just think about themselves and their own wants. They are extremely disappointed when their wants are not satisfied. This is a common cause of depression today. This type of depression is not directly related to body chemistry. However, when a person does not feel well, some people are led to just focus on material pleasures.
- *Engaging in negative thinking.* This is another common cause of depression in America and Europe today. Although most people have plenty to eat, a place to live and other comforts, many people have a strange feeling of malaise or negativity that is fed by the media, in particular. If one entertains false and negative ideas over and over, such as that we are polluting ourselves to death or 'killing the planet', when this is not true, it can cause severe depression. Most of those who believe this way are depressed for biochemical reasons.
- *Resisting change.* This is not as common a cause of depression as some of the others, but it does occur, especially in men. Changing one's life patterns such as an occupation, a divorce or other, can cause intense stress for some people that feels very painful and depressing, even if the change is ultimately positive.
- *Lifestyle imbalances.* Many people become depressed by living in a way that is not compatible with their deepest nature. This may involve relationship, jobs or careers, friends or just holding on to an attitude that is not healthy. Development can help this type of depression by:
 - Raising the adaptive energy level, which makes it far easier to risk making changes.
 - Increasing general awareness of the problem.
 - Removing a *calcium shell pattern* or other patterns associated with psychological withdrawal, fear of change and other blocks to full expression.
 - Improving perception, cognition, memory and other mental activities to allow change to occur more smoothly and easily.

School issues with bright children. Many bright, loving children are not compatible with the extremely outdated, often stupid, authoritarian, "value-free and proud of it" government schools they are forced to attend. The children know at some level they are wasting their precious time, but most have no say in the matter. For the most part, their parents do not understand the issue. This leads to many problems of young people such as falling grades, teen pregnancy, drug and alcohol abuse, dropping out of school, violence and even suicide. Instead of drugging these children, as is often done, they need alternative educational opportunities and they need to be able to speak with adults who themselves understand the outdated and harmful nature of most public schools today.

Spiritual confusion. This may occur during spiritual development and can feel like depression. Dr. Carolyn Myss coined the term "spiritual madness" to describe a condition in which a person is confused by new insights, bodily changes, and often a realization that the

world is not as it seems. Anyone who is moving forward with his or her life may encounter this feeling. In fact, if such feelings never arise, most likely change is not occurring at the deepest levels. The antidote for these depression feelings is just to continue resting, meditating and healing the body and mind as much as possible, waiting patiently for the next step or deeper insights to be shown to you.

Other causes for depression. Drugs such as sedatives, beta blockers, birth control pills and patches, copper IUDs and many others can cause depression by damaging the nervous system in various ways. Illnesses such as chronic infections and particularly cancer can contribute to depression. They may even secrete chemicals that alter perception. Most people have chronic infections and most adults probably have some cancer cells in their bodies.

INDIVIDUAL NUTRIENTS AND PATTERNS SEEN WITH DEPRESSION

Knowing how minerals contribute to depression is helpful. Here are common examples:

- *Calcium.* Calcium stabilizes cell membranes and increases the voltage at which nerve cells fire. This has a depressive effect on the central nervous system. For this reason, excessive soft tissue calcium alone can cause depression feelings. Depression feelings are especially likely when the hair calcium level is greater than about 170 mg%, also called a *calcium shell* pattern. It is associated with psychological withdrawal, usually a very sensitive person, copper toxicity, and, at times, overwhelming stress and/or inability to handle stress well.
- *Copper.* Copper is called the *emotional mineral* because it tends to accentuate all emotions. One of the most common is depression. This may occur because copper is related to the activity of the thyroid and adrenal glands, and affects biogenic amine synthesis.
- *Sodium and potassium.* Low sodium and potassium are associated with impaired adrenal and thyroid gland activity. This situation is also found commonly with feelings of depression.
- *The oxidation rate and depression.* Slow oxidation and an exhaustion stage of stress are common with feelings of depression. However, fast oxidizers with a low sodium/potassium ratio also become depressed, probably due to difficulty transitioning easily to slow oxidation.
- *Toxic metals.* Excess lead, cadmium, arsenic, nickel and perhaps a few other toxic metals appear capable of causing feelings of depression. Removing them is helpful for many people.
- *Trace element deficiencies.* When the essential trace elements such as zinc, magnesium, chromium and others become deficient, the glands weaken, the oxidation rate slows and toxic metals are absorbed and replace vital minerals in the body's enzyme binding sites.
- *Vitamin deficiencies.* Deficiencies of B-complex vitamins are associated with mood alterations that may include depression. All the vitamins are needed for brain activity. There is no way to obtain these better than with a diet rich in steamed vegetables and including animal proteins.

ANTIDEPRESSANT MEDICATION

Some twenty-seven million Americans take anti-depressant drugs. However, a recent study indicated these drugs are little if any better than placebos, except for some very severe cases of depression (*PloS Med.* 2008;5(2):e45). The study reviewed all past studies of four popular anti-depressant drugs. These are representative of the newer SSRI class of drugs. This is a very important study you are not likely to hear about on the evening news.

However, use caution when stopping any drugs. Many patients report side effects when stopping anti-depressants. For safety, preferably work with a health professional. I do not recommend stopping drug use without the assistance or advice of the prescribing doctor.

ANXIETY

Anxiety is usually related to biochemical imbalances and is often one of the easiest symptoms to eliminate using development science. Causes for anxiety seen on hair tests include:

- *Fast oxidation*, especially with low levels of calcium and magnesium. Fast oxidizers often are anxious because they are in a fight-or-flight mode most of the time. This increases the irritability or sensitivity of the nervous system.
- *Toxic metals*, especially mercury, copper, cadmium, and perhaps a few others.
- *Hypoglycemia and diabetes*. Low blood sugar causes anxiety in millions of people.
- *Nutrient deficiencies*, especially deficiencies of calcium, magnesium, zinc, essential fatty acids, vitamins A and D, and perhaps others such as choline and inositol.
- *Fatigue*. People who feel they simply cannot cope with their lives are often very anxious.
- *Very high hair sodium and/or potassium*. This is an acute stress pattern.
- *Four lows pattern*. Anxiety may be due to feeling stuck and to low calcium and magnesium.
- *Four highs pattern*. This is an unstable and extreme stress pattern.
- *A very slow oxidation rate*. This can cause anxiety due to 1) bioavailable calcium and magnesium, which causes anxiety because calcium and magnesium are calming, 2) high copper, which may stimulate thyroid activity and biogenic amine production, and 3) very low energy. This causes difficulty coping with stress that can result in anxiety.
- *Occasionally, food reactions or toxic chemicals in the environment*. These can cause severe reactions in the nervous systems of some people.

Other important causes of anxiety include:

- *Acute stress for any reason*. This causes a fight-or-flight reaction in the body.
- *Stimulant use*. This should be obvious. However, I am surprised by the number of people who complain of anxiety who drink coffee or sugary, caffeinated or chemicalized beverages and foods. Other stimulants may include worry, anger, fear and anything else that can cause a fight-or-flight reaction in the body.
- *Pain, itching, burning, parasites and other illnesses can cause anxiety, at times*.
- *Chiropractic misalignments and other factors can sometimes contribute to anxiety*.

Correcting anxiety. Development can often identify the exact biochemical cause of anxiety and correct it easily and quickly. If the cause is due to a lifestyle problem, development is excellent to control the symptoms until the lifestyle situation can be changed. In my experience, symptomatic approaches such as herbs, symptomatic nutrition or homeopathics are not nearly as powerful or permanent. While most anxiety goes away quickly, in some cases, months or even a few years are needed to reverse deeper biochemical patterns.

Adjunctive therapies. The Roy Masters meditation exercise, foot reflexology, practicing deep breathing, inspirational reading, infrared sauna therapy and even coffee enemas or colon cleansing are often extremely helpful for some cases of anxiety. Also excellent are other natural

therapies such as Rolfing, massage and gentle exercise such as walking. Yoga or tai chi can also be very relaxing. However, the teacher must constantly walk around and make sure all postures are done properly. Otherwise, serious injuries occur, at times, especially with yoga.

BIPOLOAR OR MANIC-DEPRESSIVE DISORDER

This common problem responds extremely well to development science. The manic aspect of bipolar disorder is often due to toxic metals or some other factor that prevents one from relaxing and slowing down. The depressive phase is usually the underlying situation and often due to adrenal weakness and slow oxidation.

Often, the client can be instructed how to alter the development program depending on whether manic or depression feelings are present. This gives the client even more control and perhaps can also speed up the corrective process.

DISORDERS OF AFFECT

Excessive emotional expression. Hair test patterns associated with high affect include:

- *A fast oxidation rate, especially with very low calcium and magnesium levels.*
- *An elevated sodium/potassium ratio in a few cases.*
- *A high or hidden high copper level.*
- *A low zinc level or a hidden zinc deficiency.*
- *Excessive mercury, cadmium, or less often, other toxic metals.*

Low or flat affect. Common biochemical causes for this include:

- *A low energy level, often due to a very slow oxidation rate or a low sodium/potassium ratio.*
- *Possibly manganese or copper toxicity, or other schizophrenic indicators.*
- *A calcium shell pattern or even just a higher than ideal calcium level in some cases.*
- *Excessive lead, arsenic, aluminum or nickel may cause some dullness or deadness.*

VIOLENCE

Plenty of evidence supports the idea that nutritional deficiencies, high levels of toxic metals and other chemical imbalances contribute to violence and other types of anti-social behavior. Among the many excellent books on the subject are *Diet, Crime And Delinquency* by Alexander Schauss, *Food & Behavior, a Natural Connection* by Barbara Reed Stitt, *Mental and Elemental Nutrients* by Carl Pfeiffer, MD, PhD, *Nutrition And Your Mind* and *Personality Strength And Psychochemical Energy* by George Watson, PhD, and *Orthomolecular Nutrition* by Abram Hoffer, MD, PhD and Linus Pauling, PhD.

Violence is basically a regression to an animalistic response to the world. Animals habitually respond to all threats and attacks with violence or a threat of violence. This is the best they can do. They do not have higher reasoning faculties with which to process their situation and come up with other alternatives. Human beings, in contrast, should be able to respond to all threats and even attacks primarily with reason, not more violence. Having said this, the use of reason may include telling a would-be attacker that one will respond violently if attacked.

However, this is a reasoned or reasonable response. When a human being responds with violence, first, without consulting his reason, it is a degree of regression to a more primitive or animalistic type of brain response. Many factors can cause this, and among them are fairly simple biochemical imbalances. For example:

- *Low levels of calcium and magnesium.* This can contribute to a hot temper, irritability, and impulsiveness.
- *Fast and slow oxidation.* When the oxidation rate is unbalanced, the mind also becomes unbalanced. Dr. George Watson wrote about this, as has Dr. Eck. Fast oxidation, especially, is a fight-or-flight tendency that can easily turn violent when stress increases past a certain point. Moderate to extreme fast oxidation is associated with aggressiveness, anger, rage, belligerence, mania, a short temper and even paranoia. Slow oxidation is more associated with copper toxicity, which is discussed below.
- *Low zinc.* Zinc is a sedative or anti-anxiety mineral. Zinc is also required for higher thought, emotional stability and rational thinking. When zinc is low, one is much more prone to excessive emotional outbursts and violent tendencies.
- *Copper.* In excess, copper stimulates the production of the biogenic amines such as epinephrine, norepinephrine and dopamine. These are powerful stimulatory neurotransmitters that generally enhance emotional responses and tend to diminish the influence of rational thinking. Dr. Eck said that copper stimulates the activity of the diencephalon, or ‘emotional’ or ‘animal brain’. When this happens, a person becomes far more controlled by his emotions.

For example, young women are more likely to commit violent acts just before the menstrual period. While this may be due to the action of estrogen or progesterone, copper also rises at this time of the month and may be involved.

Dr. William Walsh, PhD, formerly a scientist at the Argonne National Laboratories, took hair samples from siblings, one of whom was normal and the other displayed violent behavior. Later he took hair samples from prisoners in the California prison system. He identified two major patterns of anti-social behavior. Those with *elevated copper* tended toward episodic violent outbursts. Those with *low copper, low zinc, and low calcium and magnesium* (most likely fast oxidizers) tended to be mean all the time, and sociopathic with no remorse. Most of the criminals also had elevated lead and cadmium levels. Walsh was able to reduce recidivism among violent offenders by correcting their hair mineral balance.

- *Manganese.* Louis Gottschalk, MD, PhD and his colleagues at the University of California, Irvine, studied violent offenders in the California state prison system from 1981-1988. In three separate double blind studies, *elevated manganese* was the most consistent abnormality in the criminal population, compared to controls.

Edward Gogek, MD, a board-certified psychiatrist, studied teenage male juvenile delinquents in Arizona. Consistent findings were *elevated iron and manganese*. Manganese, in particular, is an important brain regulator. Manganese ions can destroy dopamine in the brain. Manganese is also required in many key enzymes in the brain such as kinases, superoxide dismutase, hydrolases, decarboxylase and transferases.

Excess manganese causes a type of schizophrenia. It is commonly associated with dissociative behavior, which may include violence of any kind. *Manganese madness* is a recognized mental disorder that occurs in manganese miners. It has been studied at the world’s largest manganese mine in the northern territories of Australia. Symptoms reported

in “Biological studies of manganese on Grootte Eylandt” by Florence, Stauber and Fardy, noted aggressive, erratic, compulsive behavior, irritability, a trance-like state and “stupid” crimes such as impulsive acts. This was published in *Research on Manganese and Metabolism – Grootte Eylandt, Northern Territory* by Cawte, J., ed., 1987, pp. 23-35. Interestingly, not all those with high manganese demonstrated the symptoms. This led some of the doctors on the study to believe that only those with poor detoxification systems in the liver or elsewhere may actually demonstrate the symptoms.

Manganese toxicity symptoms also resemble *mad cow disease* or *bovine spongiform encephalitis*. According to some researchers, Phosmet, a pesticide sprayed on cow’s spinal column to kill fleas, interferes with manganese utilization in the cows and may cause the symptoms. Many references for manganese are found in *Toxic Metal Syndrome* by Casdorff and Walker (1995).

- *Manganese and sociopathic behavior*. Manganese toxicity, especially in combination with some excess iron, could cause sociopathic behavior. Manganese toxicity is associated with a non-violent, unemotional or ‘poker-face’ type of detachment in which a person could look and act perfectly normal, but be committing hidden crimes. While not physically violent, sociopathic acts are certainly a form of more subtle violence.
- *Iron overload*. Iron settles in the amygdala, an area of the brain associated with rage. Excessive iron is an enormous and almost totally ignored cause of violence today. Without a liver biopsy or properly interpreted hair analysis, it can be difficult to identify.
- *Lead toxicity*. This is associated with all kinds of violence, according to the medical research. Lead replaces calcium, one of the primary sedative minerals.
- *Cadmium toxicity*. This is closely related to anti-social behavior. It replaces zinc and other trace elements. In a study of Navy recruits, the higher the hair tissue cadmium, the more behavior problems the recruits had. Cadmium, found in smoke from cigarettes and marijuana, for example, can make a person feel stronger and more in control. However, it is a brittle and fragile control that, if challenged or unbalanced, often leads to violent behavior.

Cadmium tends to toughen a person. Cadmium types of criminals tend to be “hardened”, as are those with high lead, in most cases. The lack of adequate zinc also makes cadmium types more psychopathic. Sociopaths, by contrast, must be ‘softer’ so that they can get by easily in public in order to commit their crimes behind the scenes.

Casdorff and Walker, in *Toxic Metal Syndrome*, cite the example of James Oliver Huberty. He killed 21 and wounded 19 others before he was stopped by a police bullet at a crowded McDonald’s restaurant in 1984. A hair analysis showed extremely high levels of cadmium, lead and manganese. He was a welder by trade and sadly, this may have been the reason for his violent acts. The same book gives several other examples of violence committed by welders with high cadmium, lead and other toxic metals. William Walsh also found high cadmium was associated with violent and criminal behavior in his studies of prisoners in California.

- *Hypoglycemia and the “Twinkie defense”*. This legal defense stems from the murder of the mayor of San Francisco. The defense attorney argued successfully that the murderer was hypoglycemic at the time of his act. Therefore he acted irrationally and was somehow not responsible for his crime. While it is a bizarre defense, it is true that a hypoglycemic attack can definitely trigger irrational and violent behavior.
- *Food and chemical allergies*. These imbalances are often subtle. However, *brain allergies*, as they are called, can affect a person in totally unpredictable ways. Doris Rapp, MD, is a

pediatric allergist. She has amply documented violent outbursts upon eating a food to which a child is sensitive. She discusses the subject in her books, including *Is This Your Child's World?, Is This Your Child?* and others. These are excellent resources concerning the devastating effects of allergies to foods and chemicals on some children's behavior.

- *The effects of general nutrition on violence.* A recent study found a 25% reduction in disciplinary offenses among prisoners in Great Britain who were given supplements. (Gesch, CB et al., Influence of supplementary vitamins, minerals and essential fatty acids on the antisocial behavior of young adult prisoners, *Br J Psych* (2002), 181, 22-28). Even more impressive is the work of judge Barbara Reed Stitt in Ohio, USA. She reported an 85% reduction in recidivism among parolees whom she 'sentenced' to an improved diet and nutritional supplements. Her work can be found in her book, *Food & Behavior, A Natural Connection*. Another researcher who deserves mention is Alexander Schauss, PhD, author of *Diet, Crime and Delinquency*. Dr. Schauss was a parole officer who became a superb researcher. He ran studies in the Alabama prison system and elsewhere. He, too, found that re-arrest rates decreased among prisoners whose diets were improved inside the prison.
- *Medical and other drugs as causes of violence.* Drug makers were recently required to put a warning label on anti-depressants used for children that states that violence, both homicide and suicide, are side effects of the use of, and withdrawal from, these drugs. The reason is that some SSRI anti-depressants cause both a kind of detachment from reality along with anxiety. This combination can lead to violent acts. Other drugs also unbalance the nervous system in various complex ways, and most deplete vital nutrients as well.

Domestic violence. This type of violence has more to do with emotional traumas that are triggered or retriggered in close personal relationships such as family settings. Any of the mineral imbalances above can increase the likelihood of domestic violence by making a person's brain chemistry less stable, and more volatile. Development may also help to bring up and resolve old emotional wounds and traumas that can trigger domestic violence.

Preventing violence. Too many people feel that violence is a hopeless problem. However, studies indicate that much violence is induced by disturbed brain chemistry that can be corrected quite easily in most cases with development programs. For this reason, there is indeed hope for reducing violence in the world. It could be done at once and at a reasonably low cost, in fact. Development used in prisons would also greatly reduce the cost of incarcerating millions, most of whom are nutritionally imbalanced. It would also save many lives that are today wasted sitting in jail cells or other detention facilities.

Could nutrition make a criminal more dangerous by improving his abilities? This interesting topic was addressed by George Watson, PhD, in his excellent books. In my limited experience, and that of others, most criminals become better citizens as they balance their body chemistry. They gain mental stability, increase their awareness and are more able to use their higher reasoning and other mental faculties. However, this may not always be the case.

DRUG USE AND DEVELOPMENT

What is a drug? *Let us define a drug as any substance, behavior or even emotion or*

thought pattern that slows or stops mental and/or spiritual development. This definition may seem to all-encompassing, but it is intentional. It is spiritually-oriented, which is in keeping with the holistic and developmental quality of development science. It is also the truth. In a way, it is silly to limit the concept of drug use to a few popular chemical substances and ignore other substances and behaviors that may be just as harmful.

General effects of drugs. Most drugs interfere with the higher brain centers that are essential for the development of the subtle human bodies. This is the worst aspect of their use, in terms of mental development, and just one of many important reason to avoid them. In fact, they can shut down these centers entirely, for life. Interestingly, this will make a person feel better in a way, because life becomes simpler, more like the life of a happy dog or cat. These animals relax a lot because they cannot develop much, and so there is little else to do but eat, sleep and run around. This is exactly what happens to some who use drugs, including marijuana, to excess. To a lesser degree, it occurs in those who use sugar, caffeine, who do not rest enough, and those who insist on being victims or living in anger. A related and interesting type of ‘mental drug’ in this regard is too much non-critical reading and thinking, watching too much TV or spending hours surfing the internet. These are common pastimes in the developed nations of planet earth.

Other effects of drugs. Most drugs also weaken the body at some level. They often do this by eventually ‘flattening the stress wave’. The stress wave is discussed in Chapter 11. It is the basic response of life to its environment. Those who drug themselves become unable to respond as well. One might say they become much less response-able. This may seem fun, but eventually they become discouraged and often depressed, and it causes them to want to die.

ADDICTION

The word *addiction*, from the Latin, has to do with an unhealthy attachment to something or perhaps someone. Development can often be of great help to those who wish to overcome addictions. It does this by helping to restore normalcy at many levels of physical and mental functioning.

The principle of all addictions. All addictions are *harmful stimuli* that cause a quick pleasurable response. The concept of *stimuli* versus *nourishment* is discussed in Chapter 11. The addictive substance or behavior, by stimulating the body or mind, temporarily balances or even strengthens some aspect of it. However, since it is just a stimulant, the strengthening or pleasure is always temporary. In other words, the high is always followed by a low that leaves the person a little weaker than before the substance was used. This will cause the person to be attracted back to the substance, habit or behavior to re-experience the temporary high or other sensation it offers.

In cybernetics, all addictions are vicious cycles. They are dysfunctional *positive feedback loops*. This means they are behaviors or habits that build on themselves, moving a person further and further away from a healthy, balanced lifestyle. If continued for too long, they all eventually lead to disease and death.

Addictions as self-medication. An interesting reason for some addictions is to compensate for imbalances in the body chemistry. In other words, addictions can simply be attempts to self-medicate. Dr. Eck realized that people with hypoglycemia are usually attracted to sweets and maybe alcohol. Those with a low sodium and weak adrenals may be attracted to the cadmium in cigarettes or marijuana. Cadmium tends to raise the sodium level by its toxic effect on the kidneys, and perhaps by other means as well.

Development can help by balancing the body in a healthful way. Then the addictive substance or behavior is no longer needed. For example, if one restores adrenal activity using a better diet, lifestyle and a few nutrient supplements, addictions to sugar, caffeine and other stimulants that boost one's energy level are less needed and become less attractive.

MECHANISMS OF ADDICTION

Stimulating the adrenal glands. Cortisol, secreted by the adrenals, provides a euphoric 'high'. If you doubt this, talk with someone using high-dose cortisone. In fact, it is used medically to take away pain. An adrenal high is also due to raising the blood sugar level and decreasing inflammation. Other reasons for an adrenal high can be the effects of adrenalin and noradrenalin on the nervous system. The adrenals may also secrete other pleasurable hormones as well. Anything that strongly affects the adrenals can become addicting. Common ones are exercise, sex, caffeine, listening to loud music, drama of any kind, alcohol, sugar, cocaine and heroin. Emotions such as fear, anger and worry also stimulate the adrenals in a powerful way.

The adrenals are a focal point for addictive substances and behaviors because they are so essential for one's energy and for feelings of well-being. Almost all those with addictions have weak and unbalanced adrenal glands. If the adrenals were strong and balanced, one would be far less attracted to many addictive substances and behaviors. This helps us understand why addictions to sugar, caffeine, sex, drugs and other substances are so widespread today in the developed world. They are temporary escapes from the 'downer' feelings associated with adrenal burnout.

Other ways that chemicals or behaviors are addictive. Some addictions are quite complex. A few of the simpler actions of addictive substances on the body are to:

- *Balance a mineral level or ratio.* For example, Ritalin or Adderall may raise a low sodium/potassium ratio. This may also be why it can be used as an addictive street drug.
- *Protect against or mask the negative effect of a toxic mineral.* For example, Dr. Eck found that the cadmium in cigarettes can reduce the effects of high copper, to some extent.
- *Balance or stabilize blood sugar.* Alcohol and dietary sugars do this for millions each day.
- *Provide a "crutch".* Cigarettes provide cadmium, for example, that appears to help the emotions, particularly in some women. Of course, this is an illusion in some ways that has severe health consequences.
- *Occasionally supply a nutrient.* Beer, for example, contains B-complex vitamins in the yeast.

SPECIFIC ADDICTIVE SUBSTANCES AND BEHAVIORS

ALCOHOL

Dr. Eck and many other researchers have taken a keen interest in the relationships between alcohol and body chemistry. Among the important links are:

- Zinc.** A low zinc level is associated with alcoholism for the following reasons:
- *Zinc is required for a number of enzymes that detoxify alcohol such as alcohol dehydrogenase and glutamic dehydrogenase.* Dr. Davies wrote, "In animals made to

consume large amounts of alcohol, the hepatic zinc concentration and hepatic alcohol dehydrogenase are reduced” (from *The Clinical Significance Of The Essential Biological Metals* by I.J.T. Davies, 1972).

- *A reduced ability to detoxify alcohol due to low zinc may even cause more of a ‘high’.*
- *Emotional instability due to low zinc may be ‘helped’ very temporarily by alcohol.*
- *Alcoholics tend to eat poorly. This worsens nutritional deficiencies, which, in turn can worsen the addiction to alcohol.* This becomes a severe vicious cycle that most alcoholics cannot break free from without a very carefully-designed nutritional program. Low zinc is a major cause of a reduced sense of taste and smell that often contributes to a poor appetite in most alcoholics and even in people who just like having a drink or two for fun.
- *Zinc depletion also prevents the normal release of vitamin A from the liver* (from *Trace Elements In Health And Disease* by A.S. Prasad, ed., Vol. 1, p. 27, 1976). Alcoholics are known to be less able to convert carotene to vitamin A. This may be due to zinc deficiency, and it may, in some way, worsen the alcohol problem.

Magnesium. Roger Williams, PhD, author of *Nutrition Against Disease* and other books, considered magnesium deficiency a cause of alcoholism. He believed magnesium depletion due to alcohol may cause alcoholic brain damage. He wrote that “many alcoholics have been tested and found to be deficient in magnesium”. A connection exists between magnesium deficiency and delirium tremens. The symptoms of both include tremors, disorientation, confusion and hallucinations.

Dehydration. Alcohol dehydrates the body for several reasons. First, people drink alcohol instead of drinking the proper amount of water, since the alcohol looks and feels like water as it goes down. More importantly, however, alcohol can act as a powerful diuretic. Chronic dehydration due to alcohol use is a major factor in the development of other diseases such as diabetes, in some cases, which is also coincidentally associated with zinc deficiency.

Vitamin C and niacin. Vitamin C is required with zinc for alcohol dehydrogenase. Niacin is needed for carbohydrate metabolism, and thus may be helpful for those who crave alcohol, as well.

Fast oxidation. Fast oxidizers often need a pick-me-up when their glycogen levels become low. Chemicals called *acetates* in alcohol may provide this. They may also crave the sedative effect alcohol can have on their oxidation rate.

Slow oxidation. Those with slow oxidation use alcohol to raise their low blood sugar level and to detach and forget their mental and emotional pain, in many cases.

Iron. People who crave alcohol are frequently angry. This is often found to be related to iron accumulation in the amygdala and elsewhere in the brain. One reason alcoholism may be hard to cure is that iron is not easy to remove from the body. Development is the fastest and by far the safest method I am aware of to remove excess iron. When this occurs, anger often diminishes and a person may notice reduced alcohol cravings (see the case history on page 419).

Alcoholic beverages often contain toxic metals and other toxic chemicals. Lead, arsenic, nickel and cobalt may be found in alcoholic beverages. They may be contained in additives, preservatives or even just as contaminants in some beer, wine and other beverages. They may also contribute to the addictive nature of these beverages in subtle ways.

Alcohol's worst effects are on the finer brain centers. These include:

- *Alcohol shuts down the finer brain centers, at times, for life.*
- *Teens and younger adults are the ones most affected for life by alcohol damage.* This is probably the case because their brains are still growing and developing at this age.
- *Casual drinking, such as one or two glasses of wine with dinner, if done long enough, may shut down the finer brain centers for life.* Wine is one of the worst alcoholic beverages in this regard, along with hard liquor. Beer is slightly better, though certainly not recommended.
- *Children who observe their parents drinking alcohol at all, or using any other drugs, often resent their parents.* This occurs because children are developing quickly and are quite sensitive to the use of deadening substances by their parents and others around them. This worsens many family relationships in a subtle but terrible way.

OTHER COMMON ADDICTIVE SUBSTANCES AND BEHAVIORS

Marijuana or cannabis. The low cost and much milder 'side effects' of marijuana is unfortunately making this drug extremely popular. It makes a person feel more peaceful because one can no longer think clearly. The peace it brings is the peace of death. It powerfully shuts down the tuning mechanism of the brain. This is critical since the tuning faculty, in part, defines us as human beings. It is also high in cadmium, in part due to the rolling papers used to make cannabis cigarettes. It is also often contaminated with other plant matter that can be deadly. Smoking anything is toxic, whether it is tobacco, cannabis or other substances. The lungs are designed for air, not for smoke. Please do not be misled on this subject.

Food as a drug. Many foods can be quite addicting. Sugar, salt, caffeine and even dairy products and carbohydrates can be quite addictive as they have drug-like effects for many people. Some food addictions may be caused by the odors, textures or other qualities of a food item. Even just the ability of a food to trigger happy memories of childhood, for example, may be enough to cause a food to become addictive for some people. Adding MSG, Aspartame and other chemicals may also cause an addictive quality to a food item.

Exercise addiction. Dr. Eck was among the first to speak about this common addiction. It is an example of a nourishing behavior that becomes more of a stimulant. It is also an almost pure adrenal stimulant type of addiction.

Vigorous exercise, in particular, is a powerful adrenal stimulant that quickly stops feelings of fatigue and depression that are due to slow oxidation and exhausted adrenals. In addition, it is extremely socially acceptable, unlike taking illegal drugs, for example. It can also provide a high due to the buildup of lactic acid in the muscles and blood. Lactic acid is toxic, but can have a temporary euphoric effect. These problems with vigorous exercise are often overlooked by doctors who believe that more exercise is better. It is true that exercise has many benefits such as improved oxygenation and circulation. However, these do not negate the problems with too much exercise.

A development program may help overcome addictions because it can:

- *Improve vitality.* This will tend to reduce all tendencies for addiction because a person will

- feel strong and happy without a need for the crutches and blindfolds that addictions provide.
- *Balance the oxidation rate.* This helps restore the proper tone and balance to the autonomic nervous system, which is very stabilizing for a person. It also clears up many health problems that can lead to addictions such as fatigue, depression, anxiety and others.
 - *Support the adrenal glands.* Nourishing and resting the adrenal glands can provide some of the same euphoric feelings in a mild form as certain addictive substances. Rebuilding the adrenals may also help strengthen the will, which is needed to overcome any harmful habits.
 - *Restore nutrient minerals and reduce the burden of toxic minerals, toxic chemicals and infections.* This enables the body to function much better without the need for crutches.

The hardening effect of most drugs and toxic metals, as well. A very critical effect of most drugs and toxic metals is to stiffen or harden the body and often the personality. This is a subtle effect in most cases, as the body may not feel any harder. However, it becomes a little more tense, more dense, and more rigid and stiff. One may only notice this as one detoxifies and heals using a complete development program. One's back muscles, in particular, begin to soften, and so do one's attitudes, at times.

This is the difference between a newborn baby who is quite flexible and relaxed, and a sickly older person. In the latter, the tissues, especially the muscles and ligaments, and often one's attitudes and thinking, as well, have become far more rigid and hardened. In part, this is due to an accumulation of toxic substances in the body. In part, this is also due to adhesions and processes such as glycation, in which tissue layers such as the fascia actually begin to grow together or at least adhere to one another. Deep healing involves reversing this process.

The need for a long-term view of life. Addictive substances and habits always promise quick pleasure. This is one of their main attractions. Healing the body, in contrast, involves delaying some gratification. For this reason, overcoming addiction requires approaching life with a long-term view. This is an important aspect of human maturity. Some understand this intuitively, while others have more trouble because they cannot think ahead very well. They want their momentary pleasure, at least until it stops working. Teaching the young to take a long-term view is a primary job for parents, teachers, doctors, leaders and counselors of all types. Learning a long-term view is also critical for success in most other areas of life.

GRIEF AS A LEVEL TWO DISORDER

Grief is a primitive emotional feeling that most everyone feels at times. It is a feeling of loss. Even animals go through it when one of their group members dies or is injured. This is why it is classed as a level two disorder. Grief tends to slow the oxidation rate and greatly slows progress in healing. Grief is almost like a preparation for death.

If one is aware of grief, it is best to help oneself feel the sadness fully. Allow the feelings to well up inside using any means you have such as watching a tragic movie or television show, or even writing a sad story or journaling your sadness. Be sure, however, to throw this away as soon as you have fully felt the grief, as it is not something to hold onto afterwards. Too many people believe in sadness, when this is not supposed to be the human condition. Just feel the feelings and move on.

39.

LEVEL THREE – TUNING DISORDERS SUCH AS NARCISSISM, PSYCHISM, OBSESSIVE-COMPULSIVE DISORDER, MULTIPLE PERSONALITY DISORDER, BORDERLINE PERSONALITY, PSYCHOPATHOLOGY, SCHIZOPHRENIAS AND ESCAPE PATTERNS

When I met Sarah, age 18, she was residing at the Camelback Mental Hospital in Scottsdale, Arizona. She was told she would never leave due to acute schizophrenia and strong suicidal tendencies. Thorazine and other therapies had not stopped her almost constant hallucinations. She had attempted to take her life twice since she had been admitted to the hospital. Sarah's hair copper level was 41 mg%. This is at least 15 times the ideal level. Printed on the lab report was a warning that a copper level this high is associated with psychosis.

Sarah, her psychiatrist and the cook at the hospital agreed to help her follow a fairly simple development program. Within six months on the program, she had improved so much she was taken off her medication, released from the hospital and discharged from all psychiatric care. She re-entered high school nine months after starting her nutrition program, though doctors had told her mother this would never happen. She only stayed on a development program about one and half years. Several years later, Sarah called me for some facts for a report she was writing in college, at which time she was doing fine.

Not all schizophrenias respond this well. In this case, biochemical factors were primary. In some cases, the response is slower or less complete because other issues connected with the illness must be dealt with. Even in these cases, however, a development program is quite simple, harmless, inexpensive and may be amazingly effective, as this case proves.

The human brain, in addition to its *memory and processing capabilities* and its *animal or emotional brain*, is able to *tune* itself. The idea of tuning may seem unusual. However, people often say they can “tune in”, for instance, to what another person really needs or wants.

A very rough analogy is the wireless capability of modern computers. They can acquire information from many sources such as satellites, routers or other computers. They can also send information to other computers. This capability is built into the human frame. Animals share it only minimally. They use other senses to tune into their environment. Humans have a unique sense, however, that may be called *the tuning faculty*.

TUNING DISORDERS

Problems with the human tuning faculty include 1) problems with the tuning mechanism

itself and 2) problems processing or integrating the signals that are received. Problems with the tuning mechanism are somewhat similar to those of a radio receiver, and include:

- *A weak signal, a fluctuating signal or even no signal at all, at times.*
- *Static on the signal, or drift, where the signal changes over time.*
- *A stuck receiver that can only tune to one or two stations.*
- *Inaccurate tuning where one thinks one tunes to a channel but it is another channel.*
- *Too much volume or other distortions of the signal.*
- *Overlapping signals causing distortion and false messages.*

These are engineering descriptions of many Level 3 mental health disorders. Problems processing and integrating the information that one receives include:

- *Lack of interest in the information received.*
- *Fixating on the information, which tends to unbalance a person's life.*
- *General lack of discernment and unwillingness to check information with other sources.*
- *Mixing the information with one's ego attachments, hidden agendas and desires.* For example, if one believes in vegetarian diets, one might only be willing to listen to information that recommends vegetarian diets.
- *Old traumas can prevent true listening and hearing of received information.*
- *Harmful emotional reactions to the material such as fright, or perhaps impulsive actions.*

TYPES OF TUNING DISORDERS

Imbalances in the tuning mechanism make for some very interesting mental imbalances:

- *Tuning excessively into a lower part of the self or body.* This gives rise to **egotism or narcissism, introversion, psychopathology, sociopathology, and obsessive-compulsive disorder.**
- *Tuning excessively into the self or body at other levels.* The person is tuned to a part of the self that is not appropriate for the situation. For example, a person who is always focused on the heart center of the body may be very open and loving to the wrong people.
- *Tuning into parts of the self and the mind, but unable to integrate these into a unified whole.* This gives rise to **multiple personality disorders, dissociative disorders** and perhaps **borderline personality disorders.**
- *Tuning into others in unhealthy ways.* This may give rise to **'social butterflies', paranoia, energy vampires, dependency, co-dependency,** and perhaps others such as **avoidant or oppositional defiant disorders.**
- *Tuning into other realms.* This gives rise to **schizophrenia, mediumship, psychism** and **channeling.** Schizophrenia involves uncontrolled hallucinations or hearing strange voices. Psychism, mediumship and channeling are not disorders, though they can certainly go awry if one cannot integrate the information properly. Everyone actually tunes into these levels. However, children are taught at a young age to ignore most of the information they receive from this level. The various levels that are possible include:

1) *Discarnates.* These are souls without bodies who float around and may speak to living beings, though it is usually mischievous and possibly dangerous. Psychics and mediums can

tune into this level. They may share valuable information with others, but it may not be valid.

2) *Elementals, also called elves and fairies.* These are realms of beings that cohabit the earth with us. Many books have been written about them. A delightful movie and true story about them is entitled *Fairytales*, about two English girls who were able to see and even photograph elves and fairies.

3) *Spirit guides and gurus.* These are supposedly more developed human beings who may claim to live on earth or elsewhere. They seem to offer assistance to earth humans. For example, Edgar Cayce was a famous psychic healer who went into a trance and spoke about healing and many other things.

4) *Angelic and other realms.* There are beings from still other dimensions who claim to speak through a person on earth. Doreen Virtue and other authors write about them.

THE CHAKRA SYSTEM AND TUNING DISORDERS

The tuning disorders can be related to various energy centers or chakras of the body:

- **First center or chakra** – Tuning here excessively causes *self-absorption, egoism, narcissism, an unhealthy introversion and, at times, psychopathic and sociopathic behavior.* *Cult behavior* also arises from over-tuning in this area. Cults may be understood as carryovers from the animal kingdom. They are like prides of lions, for example, that are ruled by a dominant male, in most cases, who reproduces with the females for the protection of the entire pride. Human cults include many types of groups, not just the ones we hear about on television.
- **Second Chakra** – Tuning too much here causes a person to focus on the opposite sex for purely sexual reasons. Many *energy vampires* operate at this level, both men and women.
- **Third Chakra** – Tuning excessively here causes one to be *preoccupied with control and manipulation of self and others through words, ideas and beliefs.* Politicians and parents often focus here to control their subjects and their children through manipulation. *Sociopaths may focus here too much.* They are often white collar criminals who run banks or hedge funds, or work as bureaucrats for the government. They seem like nice people, but underneath are corrupt, dishonest and power-hungry.
- **Fourth chakra** – Tuning here too much is associated with *extroverts or social butterflies* who tune into others, but usually at superficial levels such as the cocktail scene or bar scene.
- **Fifth chakra** – Tuning here too much causes *excessive ambition for worldly success.*
- **Sixth chakra** – Excessive tuning here can cause *hallucinations, delusions, hearing voices and seeing apparitions or ghosts.* Schizophrenias often have their roots here.
- **Seventh chakra** – Tuning here in an unbalanced way is associated with odd religions and spiritual cults that mix high ideals with satanic or dark energies.

HAIR ANALYSIS PATTERNS AND TUNING DISORDERS

Although many hair analysis patterns may occur with tuning disorders, common ones are:

- *Zinc deficiency and copper toxicity.* These are very important for schizophrenias.
- *Manganese toxicity.* This is associated with a type of schizophrenia that can turn violent.

- *Cadmium, lead, arsenic, mercury and other toxic metals.* These can hold a person's tuning mechanism in the lower chakras, which may be why these metals are associated with violence, psychopathic and sociopathic behaviors.
- *Lowered vitality.* This opens the body to most physical and mental disorders..
- *Fast oxidation with a low sodium/potassium ratio.* These people are often more tuned to the ego level, with all the possible disorders that one encounters here.
- *Sympathetic dominance.* These people may still tune into the ego self too much, although the body has moved into slow oxidation, which is more introverted and a more spiritual aspect.
- *Four highs.* These people tune into others too much, in most cases. They need to relax, slow down, stop worrying and tune into themselves at higher chakra levels to heal.
- *Four lows.* These people are often out of control, in terms of the tuning mechanism. This is like a radio that cannot be tuned well. Development is like restarting or rebooting their computer to 'restore all the settings' so that everything works properly.
- *A bowl pattern.* These people feel very stuck, often because they are tuning into older, lower levels that no longer serve them. They need to know they have options. Often, biochemical factors hold them back. In this case, they do well following a development program.
- *A hill pattern.* This pattern might indicate that a person has managed to tune better, or tuned into a higher level that brings comfort, insights and new possibilities.
- *Future research may reveal other patterns that are important for tuning disorders.*

Brain architecture. The tuning faculty is also highly dependent on the architecture or shape and contortions of the brain matter itself. This is not well understood by modern medical science, but I think it will be in the future. Just as a poorly-shaped antenna can affect some radio reception, it appears that faulty brain architecture, such as cranial bone displacement, may contribute or even cause Level Three disorders. Such problems are common and may be due to birth trauma, accidents, brain infections, tumors, impaired posture and perhaps other causes.

Chart Of The Tuning Disorders

<i>Condition or disorder</i>	<i>Improper Tuning Level</i>	<i>Hair Test Patterns</i>
Egotism and narcissism – self-centered and often unaware and uninterested in others	First and possibly second or third	Any, but more so fast oxidizers
Psychopathology – uncaring and often violent acts against innocent people with little remorse or concern at all	First, usually, but possibly the second or third	Often lead, cadmium and other toxic metals, though they may be hidden at first
Cults of many kinds – blind and, at times, slavish following of leaders needed for protection and safety in people's minds	First, second and usually third only, though others are possible as well	Slow oxidation, perhaps with low vitality, although the leader is always a vampire fast oxidizer
Vampirism and identity exchange – ability to steal energy from others and actually steal a piece of another's soul	First, second and third, primarily	Possibly a fast oxidizer, possibly very high hidden iron, but all patterns possible

Sociopathology – perhaps violent and callous acts, but hidden behind a façade of good manners and an acceptable appearance	First, and often the third more than second or others	Any pattern. Often copper, iron and manganese toxicity are involved. May be a vampire fast oxidizer
Obsessive-compulsive disorder – an excessive focus on self, at times, and repetitive behaviors, often in order to feel safe and secure in some way	Any level up to the sixth, but with no perspective	Usually a slow oxidizer, perhaps with sympathetic dominance pattern
Multiple personality disorder – parts of the personality are not integrated so one thinks one has several personalities, at times, and one often speaks with one or another part in sequence	Inability to integrate the two hemispheres of the brain or different brain areas	Copper toxicity is often prominent, as with schizophrenias
Schizophrenias – delusions, distorted behaviors, hearing voices, affective flattening, hallucinations, and possibly poverty of speech	Fifth and sixth, specifically	Copper and mercury toxicity, low vitality, always a slow oxidizer in my experience
Paranoid – undue suspicion of others for no good reason, fearful attitude about life	Any lower tuning levels in a fearful manner	Fast or slow oxidation, a low sodium/potassium ratio, a calcium shell and often high mercury and/or copper
Borderline – this is an unstable personality trait	Any level up to the sixth, but in an improper way	Four highs, four lows, a mixed oxidizer or others, always with mercury or other toxic metals
Psychics or mediums – not a disorder, but an ability to channel or communicate with other realms. However, often not properly understood or controlled	Many levels possible	Almost always a slow oxidizer with higher copper and perhaps other toxic metals
Channeling – not a disorder, although often information is distorted by the ego mind, ill health and/or impure communication	Any level possible	Almost all are slow oxidizers with high copper. Mercury toxicity is also very common

ESCAPISM PATTERNS ON HAIR MINERAL ANALYSES

This topic is included in this chapter because escaping from reality is a tuning disorder. Most adults realize that their lives are finite and will end sooner or later. This short section is designed to illustrate how a hair mineral analysis may reveal how a person is attempting to avoid death on the physical plane of existence. The two ways people do this in their lives are:

- *Ignoring or just denying death.* This is the most common method and involves distracting oneself with constant activity, be it work, family, friendships, travel, collecting things, fixing up the house and hundreds of other ways people fill their days and often nights, too.
- *Defying death.* This usually involves risky or scary activities such as sky-diving, hang gliding, skiing, bungee-jumping, dangerous sexual behavior, drug use or others.

Hair test patterns related to these ways to cope with the physical decay of the body are:

Escape Into The Ego.

Fast oxidation. This pattern, especially if extreme and when it persists in an adult, is associated with running away into the immature or ego self. As a result, these people are often more self-absorbed and out of touch with others' real needs. They prefer to live in their own world, often quite carefree. They may claim to feel deeply for others, and this may be true, but it is in a strange and self-centered way. For them, caring for others may mean they must micro-manage others, usually for their own benefit and pleasure. Fast oxidation is very hard on the body. It tends to cause early death unless a person can replenish his energy. The only way to do this as a fast oxidizer is usually by becoming an *energy vampire*.

Energy vampires. Some attempt to run from old age and death by stealing energy from others. They usually do this by upsetting others or flattering them, which also upsets them. Parents are sadly the worst offenders, and children make the easiest victims, as they are the most innocent and least in control of their lives. This is one reason that some men, and even more women, like to have children. However, vampires are found in every area of life and every sphere of human activity.

Identity exchange. This topic is closely related to vampirism. When someone steals energy from another, not only does the victim lose energy, but he or she also gets some of the identity of the vampire in return. The vampire also gets a little of the victim's identity. This is one of the main reasons for vampirism. The vampire wants the innocence of the child or the feminine sweetness of the daughter or wife. The victim may, in fact, want some of the hidden toughness of the sweet-sounding mother or perhaps the bullying strength of a male vampire.

An identity exchange occurs that is somewhat bizarre, but very real. The vampire softens a little, perhaps, and the victim becomes somewhat hardened in the exchange, in most cases. Our world is populated by people carrying pieces of other people's identities, while their own is often scattered far and wide among a dozen others. This topic is a little esoteric, but can be important for health and healing. It is the basis for a shamanic therapy called *soul retrieval*, which is discussed in more detail in Chapter 45. More information about vampirism and identity exchange are available at www.drlwilson.com and www.fhu.com.

Escape from the ego and from others.

Very slow oxidation, especially with a calcium shell. These individuals escape by building a wall around themselves. They also live in their own world, but it is of a different nature than the egotist's world. This is a more spiritual pattern because the person has often realized at some level that the ego is not the answer. This causes one to search more deeply.

The dangers of this pattern are that one may become depressed, despairing, and finally decide to escape through suicide, the ultimate rejection of the ego or physical self. As long as this does not occur, slow oxidation is the perfect place to slow down, think deeply about life, and perhaps emerge on the other side of the rat race against death by acknowledging that life is not about physical existence, except peripherally.

Sympathetic dominance. This is a combination of the two methods above. The pattern occurs in slow oxidizers. However, the person often tries to continue with some fast oxidizer habits of gratifying the ego. The danger here is that this escape wears down an already tired body even faster. If the pattern doesn't change, it usually leads to an early death.

Copper. Copper aids one's escape in interesting ways that include:

- *Yeast and other fungal infections.* These organisms secrete alcohol in most cases, making the person slightly inebriated most of the time. This can cause brain fog, a very common complaint among those with excess and/or bioavailable copper.
- *Enhanced emotions and often an emotional and sentimental rollercoaster.*
- *A rich fantasy world.* Copper tunes people to different dimensions and can provide amazing abilities and gifts in music, art, teaching, writing, theater, psychic phenomena and many other areas of life. While this is wonderful in some cases, it often distracts people for a lifetime from more basic and more grounded aspects of life.
- *Schizoid thinking, detachment or spaciness.*
- *If copper becomes high enough, one may experience schizophrenia or other psychoses.*

Escaping through very high copper is a risky experiment. It often leads to physical illnesses, including even cancer. It also causes unrealistic expectations and poor judgment, leading to poor decisions and disappointments. If it becomes too high, it can cause panic attacks or even a full-blown psychotic breakdown.

Four lows pattern. One is caught or stuck and escaping by pretending to run and hide.

Manganese. Manganese causes a mild form of detachment or schizophrenia, but with little affect and some personality rigidity. It does not have the softness, gentleness and humanity associated with copper. Dangers with manganese are that it can cause physical ailments as it accumulates in the brain and elsewhere, and causes violence in rare cases.

Iron. This deposits in the amygdala, where it may cause rage, anger and other, usually milder forms of violence and anti-social behavior. Anger and rage are common escapes from reality for millions of people worldwide. Problems with accumulating iron are that it is extremely inflammatory and a powerful oxidizing agent. Too much iron contributes to all the diseases of civilization such as cancer, heart disease, diabetes, arthritis and others.

Other toxic metals. Slow oxidizers, in particular, accumulate various toxic metals. These derange one's thinking, often in unusual ways, and can be used to help one escape from reality. For example, mercury accumulation causes a certain odd or quirky quality of the personality. Cadmium and lead are associated with 'macho' attitudes toward death. Aluminum is associated with a foggy memory and dementia, a common escape for older people today, and even some younger ones.

These patterns of escape are a rather advanced way to look at hair analysis. However, they are valid, as any practitioner will find who studies and reads enough spiritual material about how people try to escape from their worries, fears and other problems.

TRAUMA AND LEVEL THREE DISORDERS

Rape and development science. Rape is a combination trauma that affects many levels of brain activity, and the body structure, body chemistry, and one's nutritional state. The nutritional effects are mainly the result of *a loss of vital sexual fluids*, although all traumas also deplete zinc, calcium, magnesium and many other nutrients. Rape also can cause sexual fluid craving, a common condition among women and some men, that is correctable with a development program. It is discussed in a separate article entitled *Sexual Fluid Craving* at www.drlwilson.com.

Development is extremely helpful for those who have experienced rape. It can help to: 1) replenish nutrients after sexual fluid loss, 2) restore the back and spine to health, 3) reverse some of the trauma, shame and other effects of rape, 4) improve thinking, 5) restore one's energy level, and 6) amazingly, stop and often reverse the progress of most sexually transmitted diseases that occur as a result of rape.

In my view, rape is a very violent crime that does not receive nearly the attention it deserves. Most rapes are never reported, as it is an embarrassing event, and one that can be hard to prove and prosecute. If prosecution occurs, the punishment is so light in most nations that the criminals are soon free to strike again. In biblical times, rape was punishable by stoning to death. When one studies rape enough, one realizes that it deserves much more attention and much more extreme punishment because of the damage it can cause. As this is large subject, it is discussed in two articles at www.drlwilson.com, *Rape* and *Healing Rape*.

Brainwashing, Hypnosis and Psychotronics. These can cause Level 3-related traumas because they affect the tuning mechanism of the brain. They are all very interesting in the way they can change a person's perception, cognition and behavior in a relatively short time, often with no obvious signs or symptoms of brain damage. In a general sense, what occurs is a shift in the tuning mechanism of the brain. This changes the way a person sees himself and the world around him. These complex subjects are discussed in three articles: *Brainwashing*, *Hypnosis*, and *Psychotronics* available at www.drlwilson.com.

FIXING THE TUNING MECHANISM

Rarely, repairing the tuning mechanism of the body is easy, such as simply lowering the level of copper in the body. This works well with some schizophrenics, for example. In most cases, however, it is much more involved, requiring repair and balancing of the entire body chemistry. This is definitely the case with autism and, psychopathology and other conditions.

An analogy. The process is somewhat akin to fixing a complex radio or television receiver. First, one must replace all broken or improper parts. This is similar to renourishing the body and removing toxic metals. In the brain, the metals are often lodged deeply and are 'layered'. More superficial toxins must be released first, before one can even reach the deeper toxins that may be causing the problem. Other brain toxins include thousands of toxic chemicals, and perhaps biological toxins such as brain parasites, bacteria, fungi and viruses.

As the parts are replaced, the machine must continually be recalibrated, or retuned so it functions well. This is done in the body by *rebalancing the oxidation rate and major ratios often*. Balancing is also required or at least helpful in every area of life including the diet, lifestyle, rest and sleep, and particularly balanced thinking. For this, a large amount of proper learning and study are helpful so that a person can maintain a healthy skepticism and perspective. Otherwise, traumas that most people carry will influence one's thinking and cloud one's judgment. The use of the infrared sauna, coffee enemas, a grounding type of meditation and regular gentle exercise helps keep a person centered and grounded throughout the repair process.

Physical therapies. Most people also require chiropractic manipulation, and perhaps other therapies such as cranio-sacral therapy, Rolfing, structural integration or other bodywork. This is to help loosen the body structure, and release tensions and stress on the spine and cranium that can knock out the body's 'antenna' mechanism needed for proper tuning of the brain. For more on this, see the article entitled *Loosening The Body Structure* at www.drlwilson.com.

40.

BREAKTHROUGH OR PANIC DISORDERS - PANIC ATTACKS, POST TRAUMATIC STRESS DISORDER, PHOBIAS, HYPOGLYCEMIC ATTACKS AND NERVOUS BREAKDOWNS

And

COMBINATION DISORDERS - BRAIN FOG, MALAISE, YOUNG WOMEN'S SYNDROME, IRON DISORDER, CADMIUM TOXICITY, INSOMNIA AND NARCOLEPSY

And

BRAIN ENHANCEMENT

Robert, age 16, resided at the Arizona Boys Ranch, a home for teenagers with serious behavior problems. His probation officer told me, "Robert has a bad attitude". He had been expelled from several high schools. He looked pudgy and overweight when I first saw him. He told me, "My brain doesn't work very well". Robert's hair test revealed extremely high levels of lead (0.6 mg%), mercury (0.11 mg%), cadmium (0.11 mg%) and aluminum (4.4 mg%). Other high metal levels included nickel (0.1 mg%), iron (2.8 mg%) and manganese (0.09 mg%). All these can affect memory, cognition and other mental functions. Robert was given a supplement program and instructions regarding his diet. When he returned three months later for a follow up visit he had lost 20 pounds, although I did not restrict his food intake. He had a healthy glow about him. His driver said his attitude had "turned around" and he reported feeling stronger and better able to cope. In my office, he told me, "My brain is working now".

Interestingly, Robert's retest hair analysis revealed even higher levels of iron (4.9 mg%), lead (0.7 mg%), nickel (0.2 mg%) and manganese (0.16 mg%). These higher levels indicated these metals were being eliminated through the hair during the past three months. As iron and manganese are eliminated due to a development program, people often report a lessening of anger and a greater awareness about it as well.

Delinquency, drugs, promiscuity, suicide, and other teenage problems are often due, at least in part, to exhausted, toxic bodies, even at this young age. Many people with behavioral problems are incredibly relieved to know their problem is due to nutritional imbalances and toxic metals, and they are not just crazy or 'messed up'. An inexpensive hair mineral analysis can often reveal the specific imbalances, as well as guide their correction.

Case #2. *Henry, age 5, had many food allergies, eczema, asthma, chronic intestinal bloating and many hypoglycemic symptoms. Most disturbing to his mother, he exhibited disruptive, disagreeable and angry behavior.*

On a development program he has calmed down and is less moody. His disposition is sweeter and his food allergies have decreased in severity over a period of about nine months. His first three hair tests revealed a clear pattern involving the 'three amigos':

- *Iron increased from 1.4 mg% to 2.7 mg%, and then it decreased to 1.1 mg%.*
- *Manganese followed a similar pattern. At first it was at 0.019 mg%. It rose to 0.057 mg% and on the second retest was down to 0.018 mg%.*
- *Aluminum followed the same pattern, moving from 1.17 mg% on the first hair test up to 2.71mg%, and then down to 0.83 mg% on the most recent test.*

This is a clear example of how the 'three amigos' or 'friends' may move up and down in the same direction, though it does not always happen so clearly. In a young child, there is less time for other factors to have influenced the mineral balance, so it is perhaps easier to see the pattern.

Also, Henry's oxidation rate has also moved in accordance with the 'amigos'. On the first test, the rate was mildly fast. On the second test, it was extremely fast with a lower sodium/potassium ratio. On the third test, it returned to a milder fast pattern. Another interesting fact was that Henry's hair zinc level went from 12, to 6 and then down to 5 mg% on the most recent test. Such levels are quite low, in spite of zinc supplementation and a diet with a lot of meat. His mother reported that all Henry wants to eat is meat. Most likely, zinc is being retained inside the body, replacing iron, manganese, aluminum, cadmium and other toxic elements that are being removed. Usually in these cases, the zinc will return to a good level once the major enzyme binding sites have been replenished with zinc.

Breakthrough and combination disorders. This chapter discusses an important group of conditions that involve combinations of the three levels of brain functioning described in the past three chapters. To review briefly, these levels of functioning are:

1. *A mechanical 'computer hardware' level involving mainly memory and processor capability.*
2. *An 'animal brain' level, involved with stress, adaptation, survival, mood and affect.*
3. *A 'tuning' faculty of the brain, which is like a radio receiver and transmitter.*

I have divided the combination disorders into two groups. The first are called *breakthrough disorders*, while the second are *more complex combinations* of imbalances.

BREAKTHROUGH DISORDERS

The concept of a breakthrough disorder is simple. A lower or cruder level of functioning 'breaks through' or intrudes upon a higher or finer level of brain activity, causing severe stress and panic reactions. They are usually acute, and only rarely more chronic. In some of them:

- *Subconscious fears or traumas suddenly break through to the conscious mind.* Common examples are PTSD and phobias of all sorts. Violent behavior may also be classed as a type of breakthrough phenomenon in which raw emotion wells up and overwhelms a person.

- *A physical imbalance such as low blood sugar or perhaps metal poisoning can suddenly affect the nervous system, causing mental and emotional symptoms.* The most common of these are hypoglycemic attacks and some panic attacks caused by copper or other toxic metals somewhere in the body. Seizures due to a fever, infection or another cause might also be considered such a disorder. However, the effects of seizures are mainly physical, rather than psychological, so they are not addressed in this chapter.

Symptoms. All of the acute breakthrough disorders are basically panic episodes. They usually build up in less than 10 minutes. According to the DSM-IV, one must also experience at least four of the following symptoms: palpitations, a pounding heart or tachycardia, sweating, trembling or shaking, shortness of breath, feeling smothered, a feeling of choking, chest pain or discomfort, nausea, abdominal distress, feeling dizzy, unsteadiness, lightheadedness, feeling faint, derealization or feelings of unreality, depersonalization or feeling detached from oneself, fear of losing control or going crazy, fear of dying, tingling or numbness, chills and hot flushes.

Notice that a few of these symptoms are associated with a fight-or-flight reaction. In fact, panic disorders are a type of incomplete fight-or-flight reaction. They are confusing for the body because there is really no tangible threat, as with other alarm reactions. Instead, the trigger is from inside the body or mind itself. The alarm response in these situations is incomplete and the person ‘floats’ and is caught in this partial response to stress. Let us discuss some of the most important kinds of breakthrough or panic disorders.

PANIC OR ANXIETY ATTACKS

Most panic attacks are due to a vicious cycle in which a slight upset or anxiety feeling causes a fight-or-flight reaction. This, in turn causes more anxiety, which further aggravates the fight-or-flight reaction, and so on. Unless stopped quickly, this escalates in a few seconds to a few minutes into a full-blown anxiety attack.

At times, there is no obvious trigger for an attack. These are the most disconcerting and can cause a person to live in terrible fear, not knowing when the next attack will arrive. In most cases, the trigger for the attack is either a physical factor such as fatigue, hunger or thirst, or it may be a loud noise, a particular situation, an argument in a relationship, or something else.

Correction. Anything that stops the ‘spreading’ or vicious cycle of a stress reaction will stop a panic attack, though it may not prevent future episodes. Symptomatic methods include simple nutritional supplements of calcium, magnesium and zinc. These often work beautifully.

Other remedies include slow, deep breathing, relaxing in some other way, drinking a glass of warm milk, perhaps, to increase calcium in the blood, or eating something sweet to temporarily increase the blood sugar if low blood sugar is the cause. Of course, if low blood sugar is not the cause, sugar can make the problem worse. Tapping techniques such as EFT and others may also be very helpful for some panic attacks. Preventing future attacks and getting rid of nutritional and biochemical triggers at deep levels, however, requires balancing and stabilizing the entire body chemistry with a development program.

POST TRAUMATIC STRESS DISORDER OR PTSD

A painful memory that suddenly breaks through to consciousness at random times can

cause severe feelings of panic that cripple a person's normal functioning. Fear of the episodes, along with often feelings of guilt, anger or other negative emotions complicate the disorder. Previously called *battle fatigue* or *shell shock*, PTSD often has its origin in repeated stressful episodes, such as those that occur on the battlefield. Each causes a powerful fight-or-flight reaction that is also recorded in a person's memory. When the memory is triggered for any reason at all, the fight-or-flight response is also triggered, causing panic feelings. Fear and other emotions about the incident can cause the panic episode to escalate quickly.

Development can help to make the nervous system more stable. This can reduce the severity and frequency of attacks. Also, improving a person's vitality can perhaps help one to process and release the original trauma more easily, at times with very little effort or discomfort. Other therapies such as cognitive and relaxation therapies may be helpful, as well. However, if the body chemistry is too unbalanced or the vitality level is too low, other therapies will tend to be less effective.

PHOBIAS

The word phobia means fears and/or aversions. In this group of disorders, the trigger for a panic episode is a specific exposure to something that reminds a person of an earlier trauma. For example, if one was bitten by a dog at a young age, each time one hears a dog barking it might trigger a memory of the original trauma and this triggers the panic episode.

Phobias are sometimes able to be handled easily with psychological and energetic methods such as emotional freedom technique or EFT. These simply "disconnect" the old fear from bothering the person. Development can help by stabilizing the nervous system and improving general brain functioning. This is a deeper, but much slower type of correction.

HYPOGLYCEMIC ATTACKS

In this common disorder, low glucose in the brain cells or low cellular energy production for some other reason is the immediate trigger for a panic episode. The brain is indeed starving and in some real danger. This triggers a powerful fight-or-flight response as the adrenal glands secrete adrenalin and cortisol in an attempt to raise the blood sugar. However, in susceptible individuals, the adrenals do not respond properly and the blood sugar may drop lower, as glucose is used up during the stress reaction. This can set up a vicious cycle that quickly escalates into a full-blown panic reaction or attack.

Symptoms usually include mental confusion and disorientation, in addition to all the other symptoms of a general panic disorder listed above. Since the brain is in actual physical danger due to low energy, if the mind is not working well hypoglycemic attacks can cause violence as well. In other words, the person is suffering an actual physical attack on the brain and may respond as if attacked. Chapter 29 discusses the correction of hypoglycemia, which usually responds very well to a development program.

NERVOUS BREAKDOWNS

This term is not used much any more. However, it is a helpful phrase that refers to more chronic feelings of panic. In other words, the symptoms listed above under breakthrough disorders are present much of the time. They often come and go depending on one's fatigue

level or other factors. For example, at times one may experience tingling in the limbs, some trembling, occasional cold sweats, palpitations, shortness of breath, some dizziness and lightheadedness. One may also feel, at times, like one is dying or out of control.

Since this is more chronic, it may take longer to respond to development, though not necessarily. The same principles discussed above apply to this situation. The Roy Masters meditation exercise may also be very helpful.

The physiology of breakthrough disorders. The sections above are a sampling of common breakthrough disorders. All tend to have the following in common:

- *Some degree of instability or hypersensitivity of the nervous system.*
- *They often occur in more sensitive individuals.* Women may be somewhat more affected by panic attacks than men, but men may suffer more PTSD than women.
- *Nutritional and other biochemical abnormalities always play a part in these disorders.*

Hair analysis patterns commonly seen with breakthrough disorders include:

- *Four lows, four highs or fast oxidation, often with a low sodium/potassium ratio.* All of these are associated with *instability* in the body and in the nervous system.
- *Slow oxidation, often with a low sodium/potassium ratio, or a low phosphorus level.* These are associated with lowered vitality.
- *Elevated toxic metals*, especially copper, mercury, iron or cadmium, though others may be involved, as well.
- *A bowl pattern.* This often indicates a feeling that one has nowhere to run, causing a feeling of being trapped, perhaps by a memory or something else one cannot control.

A philosophical aspect of breakthrough disorders - upward movement of energy.

All breakthrough disorders involve an *upward movement of subtle energy* that precipitates an attack. The energy may move from a lower level of the brain to a higher brain center, or it can move from a physical body aspect upward to the mental level.

Anything that will stop the upward direction of energy movement will reduce or stop these disorders. The downward direction of movement of energy permits higher or finer energy to interpenetrate and eventually heal the lower brain centers and the body. Activities that will do this tend to be grounding, centering, calming and of a lower pitch or tone. This means that the vibratory level is somewhat lower, in fact. Activities and methods that are excellent include:

- *Grounding foods such as meats, in particular.* Cooked roots are also grounding.
- *Parasympathetic nutrients help a lot, such as animal glandulars, calcium and others.*
- *Walking slowly and gently, or chanting, singing or just listening to soft and especially lower tones of music with a regular rhythm such as quiet classical or perhaps church music.*
- *The Roy Masters meditation exercise, which specifically forces one to move energy down the body from the head to the hand.* This exercise can be made even better by forcibly sending energy downward, all the way to the feet, while doing it.
- *Studying grounded material, even the bible, is helpful for some people as long as one does not become emotionally involved, but simply reads quietly for enjoyment.*
- *Use of a near infrared sauna and coffee enemas are actually quite grounding as well.*

Factors that tend to make breakthrough disorders worse include:

- *All drugs, and yin foods such as all sugars, sweets, all raw foods, and juices.*
- *Listening to jazz and rock music, or any syncopated beat, or any loud or emotional music.*
- *Allowing oneself to become upset, fatigued, hungry, thirsty or otherwise out of sorts.*
- *Sitting in front of computers and televisions, or using telephones, especially cell phones or cordless phones. Only corded phones do not emit harmful electromagnetic fields.*
- *Walking too fast, especially bobbing the head up and down when walking, and doing most vigorous sports. Especially ungrounding are skiing, soaring and similar sports.*

The concept of the movement of subtle energy is well understood in our language. When someone is not well mentally, one may say he is *upset, uptight, wound up, mixed up, goofed up, messed up, screwed up and so on*. When one is feeling better, we say he has *calmed down, settled down, slowed down or is winding down*. In other words, when one is not well, the lower energies surge into the higher brain centers and disturb or even destroy them. However, when one is well, the finer mental energies move downward from the higher brain centers into the lower centers and into the body, bringing more peace and harmony.

Healing breakthrough disorders. With this principle in mind, helping people with all panic disorders can be done by:

- *Trying to halt the upward movement of energy from the lower centers to the higher ones.*
- *Stabilizing and balancing the nervous system and the physical body to reduce their irritability and reduce stray energetic discharges from the lower centers and from the body.*
- *Removing the deep or subconscious causes, which are memories, emotions, physical traumas or biochemical imbalances in the body and the brain.*

Development is extremely helpful and can often stop panic episodes of many kinds in a few days or less. Among the reasons are:

- *The direct sedative effect of nutrients such as calcium, magnesium and zinc can “short circuit” the alarm response of the nervous system that leads to a panic attack.*
- *Balancing the autonomic nervous systems reduces triggering mechanisms for panic attacks.*
- *Eliminating toxins of all kinds, especially copper and mercury, also reduces many triggers and helps the nervous system to become more stable.*
- *Improving overall vitality and balancing the oxidation rate enhances adaptive energy that can be used for deeper healing of all memories and traumas.*

Sauna therapy is extremely helpful for all panic disorders for the following reasons:

- *The sauna is warm and soothing, and provides a peaceful, protected space to relax.*
- *The direction of movement in all saunas is downward and calming. This is much more the case with a near infrared light sauna because the red and orange colors of the lamps tends to activate the lower energy centers of the body and helps focus energy here. However, all saunas tend to be somewhat grounding and calming for the nervous system unless extremely hot.*

- *Near infrared energy also seems to help loosen the grip of old emotional traumas.*
- *Sauna therapy greatly enhances the removal of all toxic metals and thousands of toxic chemicals from the body.* All can be triggers for panic disorders, and can even help hold in place unconscious memories and traumas. Exactly how this works is a mystery, but many people find that removing toxic metals seems to “lighten their load of traumas” in some way.

HIGH-LEVEL BREAKTHROUGH DISORDERS

A different type of breakthrough disorder occurs when spiritual or other higher level material breaks through into regular waking consciousness. Examples are flashes of insight that a person may have, or premonitions that a disaster has occurred and one must call a friend or family member. Dream material may be of this nature, although it breaks through only indirectly if one can recall a dream in the morning. This can be equally frightening and disturbing to people, and many run away from it, although usually it is beneficial in some way. The best way to handle these problems is usually to calmly accept the possibility that one is receiving information from credible sources, even if it is not under one’s control at this time. By developing oneself further, often such flashes of insight will start to occur more regularly and will become easier to control and work with.

COMBINATION DISORDERS

General information. Combination disorders may involve several levels of brain functioning, are generally chronic and are often related to what may be called spiritual imbalances. This idea is discussed below.

BRAIN FOG

Brain fog is very common today, although it is not a recognized diagnosis in the DSM-IV. It may be described as chronic, low-grade, reduced mental clarity. It may affect many areas of brain activity including a reduced access to some memories, reduced processor speed and agility, and it may affect the stress response. It also definitely affects the tuning faculty as well.

It may feel like a cloud hangs over one’s head that reduces one’s clarity of mind. It may feel a little like an alcoholic hangover, yet it is not due directly to drug use, or to a specific toxin or diagnosed medical condition. The condition affects adults and often children, sadly. It impairs learning, school and work performance, personal relationships, and can lead to low self-esteem, accidents, unhappy marriages and severe frustration. It may be responsible for some crime and delinquency as well. Some people have lived with brain fog for so long they consider it normal. In many cases, however, it develops quite suddenly in late childhood or in adult life.

Causes. Biochemical and nutritional causes must be involved, in most cases, because the condition responds well to development programs. No single nutritional imbalance appears to be responsible, but rather a combination. In some cases, copper imbalance appears to be primary, but others definitely involve other toxic metals, toxic chemical exposure, adrenal exhaustion, infections such as candida albicans, parasitic conditions affecting the brain, hypoglycemia, nutrient deficiencies or bowel toxicity. In a few cases, food allergies or food toxins such as Nutrasweet or aspartame are part of the problem. In some cases, it can result from the use of

medical or recreational drugs. Lifestyle causes may be secondary such as lack of sleep or exercise. Other more unusual causes in some instances may include:

- *A need for grounding.* The person is floating rather than focusing on a physical level.
- *Extreme sensitivity to one's environment, in part due to adrenal burnout, usually.* This causes a type of sensory overload that may cause a person to shut down to some degree. Some autistic children have this difficulty.
- *A psychological defense.* Brain fog may be a way to deal with conflict or an information overload. Some dementias begin as a way to avoid situations that are not to one's liking.
- *Chiropractic issues, a chronic sinus infection, electromagnetic stress, reduced oxygen to the brain due to arteriosclerosis or heart problems, or rarely a tumor are also possible.*

Brain fog correction. Most people feel better rapidly with a development program. The Roy Masters meditation, sauna therapy and coffee enemas are needed, at times.

MALAISE

Malaise is another older term that may be described as a *lack of joy in living*. It is somewhat like a mild depression or dysthymic disorder, but not quite the same as it is more of a generalized slowing of all mental activity. It is often most evident in a person's manner, way of speaking, subject matter of speech and general attitudes of hopelessness or "what-can-one do?"

Speech and affect are often in a tone and tenor that is whiny, complaining, blaming, negative and doom-and-gloom. Actions may tend to be somewhat repetitive and mechanical, rather than creative and excited. Even new experiences seem to offer little help after a short while and do not uplift the person. Unlike depression, the person usually has a normal to excessive appetite, decent sleep habits and is not withdrawn from society, family or friends. One may feel rather hopeless, but not usually suicidal, as occurs with depression. Most people with malaise just endure. Usually no clear medical diagnoses are present. Hair analysis will reveal plenty of imbalances, but none in particular, except often mild to moderate slow oxidation.

A spiritual disorder. A person with malaise is often not in touch with his or her true gifts or talents. As a result, a person may feel alienated in some way. Often, however, the cause is an unwillingness to open oneself fully to God or the higher self. This applies even to those who profess to be 'spiritual' or religious.

Correction. Malaise can be one of the most resistant *transition* disorders imaginable. Many end up on anti-depressant medication. This may relieve some of the symptoms, but may create others, as well. Development can be of great help with the more physical or biochemical aspect of the disorder. Other people need a different type of healing and many take up various spiritual practices, for example, to seek for joy and fulfillment in their lives.

A Christian solution. Passing through a time of malaise is a common topic among Christians. Many say they were in a "funk" for some reason. At the time, they were either non-believers, or they asked for God's help but they now realize they never gave themselves fully to God or Jesus. By holding back some part of themselves, they were blocking the love and grace of God from coming into their lives. This, they realize, was the cause of their malaise.

Overcoming malaise often required some sort of crisis that caused the person to surrender fully to spirit or God. Upon falling to their knees, figuratively, the malaise was taken away, and joy and a certain peace descended upon the person for the first time. The person realized he or she had been a 'superficial Christian' before the conversion, or "being born again" of spirit.

As a doctor, this is of interest, as it is real and apparently helps thousands of people worldwide. While it may be a purely spiritual revelation, it also seems that it is a type of emotional release of a lingering part of the ego self. In addition, it appears that the person opens himself to more guidance and to the love of the Creator in some way. This may correlate with an opening of the seventh (or crown) chakra energy center that everyone has, regardless of his beliefs or religion. By taking the two separate steps of 1) surrendering deeply and 2) opening even more to guidance and assistance, malaise often vanishes for good.

YOUNG WOMEN'S SYNDROME

This is a constellation of symptoms that is extremely common in young women between 15 and up to about 35 years of age. It is related to malaise in some ways. These women tend to be sensitive, spiritually-minded and often are not in healthy relationships. This may contribute to the pattern, but is often not the underlying cause.

General symptoms include depression, malaise, low libido, low self-esteem, copper toxicity symptoms such as headaches, acne and PMS, and often memory impairment, brain fog and stress. Hair mineral analyses usually reveal a slow oxidizer pattern with either hidden or overt copper imbalance and low adrenal and thyroid activity. The syndrome or constellation of symptoms is easy to improve with development in many cases. I mention it because it occurs so commonly today and it involves more than one level of brain functioning.

IRON COMBINATION DISORDER

Iron is a curious mineral in that it gives strength of character and is an essential mineral. However, it is also quite toxic in excess, and iron toxicity is extremely common. Like the metal itself, iron "hardens" the personality causing a brittle, arrogant and angry person, though this may not be apparent at first. It is a superficial personality, and one that is difficult to reach on a deep emotional level.

Also, the person's thinking is distorted and quite dull and short-term. Hidden agendas may be present, and often they are authoritarian and socialist agendas. Behavior is often bizarre and 'upside down', meaning it does not make sense logically. For example, political leaders with this condition are corrupt, but excuse their behavior as being somehow necessary to achieve their longer-term goals. Their motto is the same as that of Karl Marx – the ends justify the means.

Another quality of the pattern is an energy vampire quality to the personality, which is a desire to steal energy or otherwise control or even harm others. For example, parents or teachers with this tendency may ruin a child's innocence by spoiling him or through bizarre requests and punishments that make no sense logically. This is a subtle type of emotional trauma that goes unnoticed by the authorities because it is so widespread, yet it damages millions each day in school, for example. This curious disorder is not recognized in psychiatry, in part because many doctors have it themselves and do not view it as pathological.

CADMIUM AND THE BRAIN

Cadmium toxicity, especially if severe, causes a generalized dullness of the brain. The specific effects of cadmium on the brain are varied and include:

- *According to Dr. Eck's research, it drives copper back into storage, reducing some effects of copper imbalance such as spaciness and emotions such as fear and perhaps sentimentality.*
- *Cadmium replaces zinc, which is a calming neurotransmitter. Cadmium is more stimulatory, but not as much as iron, for example. Cadmium can thus brighten up the personality a little.*
- *Cadmium has a 'hardening' effect on the personality and is considered a lower 'male' element. It makes a person seem more tough and masculine. However, the person is weak underneath because cadmium is extremely toxic.*
- *Cadmium helps keep a person in fast oxidation, and supports the more egotistical side of a person's nature in most cases.*

INSOMNIA

Insomnia is now one of the most common conditions in developed nations. In development science, correcting insomnia is a top priority since rest and sleep are essential *whole system behaviors* that must occur for healing to proceed rapidly. Fortunately, in almost all cases, natural methods will take care of insomnia, eventually. However, if they do not, then using a prescription sleeping medicine is better than not sleeping.

Lifestyle factors involved in insomnia may include:

- *Going to bed too late.* It is best to be in bed by 8-9 PM, or before the sympathetic nervous system kicks into high gear to keep one awake in the evening. The hours before midnight are the most beneficial for sleeping for other reasons as well.
- *Mental stress, worry, preoccupations or general tension.*
- *Feeling hot, cold, uncomfortable in bed, itchy or some other bodily discomfort.*
- *Noise, too much light or perhaps a partner snoring or moving around too much.*
- *Subtle factors such as electromagnetic stress from electrical devices, or even wires near the bed.* Even the vibration or presence of others nearby can be a factor, at times.

Biochemical and nutritional causes of insomnia include:

- *Calcium, magnesium or zinc deficiencies.* Calcium, magnesium and zinc are *sedative elements*. They powerfully relax the muscles and the central nervous system, and place a damper on all mental and physical activity. When they are deficient or bioavailable, sleep is usually not sound or deep due to excessive muscular or nervous tension. This can usually be corrected easily, at least to a degree, with an improved diet and the correct supplements.
- *Copper imbalance.* This is a very common cause of insomnia. Copper, in excess, activates the sympathetic nervous system. It may not be easy to correct quickly. Over time, however, copper can usually be brought under control quite easily.
- *Autonomic nervous system imbalances.* Rest and sleep are vegetative states that are highly parasympathetic. Any problems moving into a parasympathetic state will tend to impact rest and sleep. Several hair analysis patterns such as *sympathetic dominance* and *four lows* can indicate autonomic nervous system dysfunctions.
- *Toxic metals.* Excessive amounts of any of the toxic metals can impact one's sleep.

- *Hypoglycemia.* This can often be avoided by eating a snack before bed. Eating a large meal before bed is not considered healthful, but a snack or small meal may be needed, at times.
- *Other.* Many health conditions including sinus problems, back aches, itchy skin, breathing problems, hot flashes, night sweats and others can affect rest and sleep.

Suggestions for better rest. Simple ideas that help many people are to make sure to take a walk or get a little exercise during the day. Also, wind down all activities early in the evening. Preferably cease all intellectual and intense physical activity, and turn off computers by 6 PM or so. Quiet, relaxing music or spiritual reading or CDs may help in the evening to wind down.

Make sure the bedroom is dark, cool, quiet, ventilated and comfortable. Before bed, rubbing the feet, particularly all around the toes, is very relaxing and can balance the meridian energies in the body. Massage, use of a chi machine, and perhaps a warm shower or warm bath with Epsom salts helps some people relax. However, do not take Epsom salt baths more than twice per week.

Natural sleep remedies. The development program, especially with extra calcium and magnesium in the evening, will clear up many sleep difficulties. If it does not, or until correction occurs, natural remedies include a small cup of warm, preferably raw milk or a small cup of strong chamomile tea. Other calming herbs include valerian, hops, passion flower or others. Nutritional supplements that might help include calcium with magnesium, and perhaps zinc. Others are GABA, threonine, vitamin B6, L-tryptophan or 5-htp, melatonin, and perhaps others. Homeopathic formulas also help some people. Drugs should be used only as a last resort as they are toxic and perhaps addictive.

Teens need more rest and sleep. Sleep deprivation can often explain difficult or even senseless behavior of children. Teens and all older children should get 10 or 12 hours of sleep each night and ideally go to bed by 9 PM at the latest. I know this is difficult, but it is best and quite important for most children and teens. It can help them in school and, of course, with overall health as well.

NARCOLEPSY

Narcolepsy, from my perspective, is just a fancy word for fatigue that can cause a person to fall asleep at embarrassing or dangerous times such as driving a car. Drugging people for it is not needed if the cause is corrected. Stimulant drugs used for the condition can occasionally cause a disaster. A well-designed development program can increase the energy output of the body and remove toxins from the brain and nervous system that may cause many cases of narcolepsy.

THE ENHANCEMENT OF BRAIN ACTIVITY

Brain enhancement is the idea of improving the functioning of the brain far above that which normally occurs. Promoting brain enhancement is a central focus of development. It often occurs quite easily and automatically. A simple case history may be helpful:

Mrs. James brought her seven-year-old daughter for consultation due to repeated respiratory infections. These cleared up within about three months on a development regimen.

On a repeat visit, to my surprise, Mrs. James happened to mention that her daughter's grades in school had jumped from C's and D's to all A's.

Mental faculties that can be enhanced in almost everyone today include:

- *Memory, processing speed, concentration and general thinking and reasoning skills.*
- *Greater emotional control and balance of the emotions.*
- *An enhanced tuning range of the brain, or a greater power to receive information.*
- *Better memory access and better 'channel separation'. This basically means less confusion and corruption of ideas and facts.*
- *Improved ability to 'seek' and 'scan' while tuning in. These are specific skills that allow a person to scan through memory and information that is presented from outside, looking for clues and details to be able to process and classify it correctly. It involves intelligence, but also memory access and other skills.*
- *Enhancement of more subtle qualities such as awareness, discernment, intelligence, good judgment, mental balance, grounding, centering and wisdom.*

Brain enhancement also involves other activities. However, correcting the diet, the lifestyle and balancing the body chemistry are an excellent foundation. Other aspects include specific studies, writing, meditation and other techniques. In the past, some of this was taught at the universities. Today, colleges do not focus on it as much, in my opinion.

Disorders due to brain enhancement. Brain enhancement is wonderful, but can cause problems for people. The following suggestions may help avoid most problems:

- *Do not allow knowledge and understanding to "go to one's head".* Many bright individuals get caught up in their own brilliance or academic achievements. Some do this by turning their talents to making money or becoming famous. Many use their intelligence to harm their enemies. Others become caught up with dictators and sell their souls, so to speak, for recognition, power or other rewards. For example, many smart people supported Adolph Hitler and nearly destroyed all of the Western world.
- *Maintain a healthful diet and lifestyle.* Many brilliant people ruin their health because they forget they are still human and need to eat correctly, sleep enough, and follow a healthful lifestyle. Eating meat, for example, is very important for most intellectually-minded people. It has more of the zinc and brain fats that are needed by most people. Everyone must also recognize that knowledge is power, and having more of it is a tremendous responsibility.
- *Remain grounded and centered.* Those who use their brains more than others must work on grounding themselves often. Breathe deeply, take short walks, rest enough and preferably do the Roy Masters exercise. These will help one avoid becoming "up in the head" too much, as happens with so many college professors, for example.
- *Stay abreast of other points of view.* Many academics, in particular, live in the ivory tower of the university, business or other community and do not read widely outside of their field of expertise. This can lead to tunnel vision and very distorted thinking. The remedy is to read outside of your field, and preferably read some popular books or articles, not just technical ones.

41. SEXUAL ASPECTS OF DEVELOPMENT SCIENCE

Rebecca, age 30, had very little sexual desire, although she loved her husband very much. Her first hair analysis showed a slow oxidation pattern, indicating very low energy production at a cellular level. She also had a calcium level of 251 mg%, a calcium shell pattern. This can cause a degree of sexual numbness or lack of feeling on the skin. It is also associated with conditions such as vaginal dryness, pain on intercourse and depression. Within six months on a development program, Rebecca reported much more interest and enjoyment of sex. A retest analysis revealed a calcium level of 126%, indicating a much better energy level.

The sexual aspects of minerals and the oxidation rate are extremely interesting. This chapter also discusses many other topics related to development and sexuality.

Secondary sex characteristics and minerals. The sex organs define us as men and women physically, but not mentally and emotionally. The latter are more dependent on what are called secondary sex characteristics. These include a set of attitudes, feelings and general intent in regards to sexuality and intimate relationships. These are heavily influenced by thousands of subtle chemicals that regulate various areas of the brain, including hormones, pheromones, endorphins and others. Today, the production of these chemicals has been altered significantly in most people by nutritional imbalances, environmental pollution, ionizing radiation and stray electromagnetic fields, in some cases. This has altered many people's perceptions in this area and has directly or indirectly caused a large number of sexual and emotional disturbances. These include impotence or erectile dysfunction, infertility, low libido, sexual excesses, premenstrual syndrome, menopausal issues and others.

By reviewing hundreds of thousands of hair mineral analyses, Dr. Eck discovered that certain hair mineral levels, ratios and patterns relate to specific attitudes and qualities related to sexual matters. Interestingly, these often parallel the physical or chemical qualities of the minerals themselves.

MALE AND FEMALE ELEMENTS

One of Dr. Eck's most important observations was that certain minerals are more 'male' and others more 'female'. Let us begin this discussion with general facts about all the male and female elements, followed by a discussion of the most important ones:

- *The male elements tend to stabilize and balance, while most of the female elements tend more to excite the mind and the emotions.*
- *The male elements all dull the mind to some degree.* The female elements tend to excite and enhance mental functioning to a degree.
- *Most male elements tend to be harder, while the female elements are softer, or even liquid.*

THE MALE ELEMENTS (*starting with the best or highest consciousness*)

Zinc. Qualities. Zinc is a rather soft metal that is one of the most spiritual and more enlightened male elements. It is also one of the most balancing elements in our bodies. In this book, zinc is called a *sedative, anti-stress* and *gentle strength* element due to its effects on the body. Some health authorities claim it is a calming neurotransmitter. Men require zinc in the prostate gland, and male semen is very rich in zinc. Almost all men and women need more zinc.

Most men and some women are, to some degree, *zinc-dominant*. This means their thinking and behavior has some qualities that are related to zinc in the body. However, this trait is more common in America than in Europe or other areas of the world. This is due to Americans eating much more meat, the food that contains the most zinc. Also, Americans smoke much less today than most other developed nations. Smoking increases cadmium, iron and other harmful elements that compete with zinc. Fewer women are zinc-dominant due to copper overload. This makes them more emotional and sentimental, as a rule, than men.

Relationships. Zinc-dominant men make decent partners. They tend to be more healthy, balanced and stable than others. The zinc type of man is more modern, developing only in the past century or two. He is usually less brawny, more shy, less angry and more open to spiritual development. He is also less driven to sex and more interested in a complete relationship. He is also less swayed by women's charms and usually much more interested in a woman as a total person rather than just interested in her body. The zinc-dominant man is an evolutionary leap that is assisting world peace, spiritual development and other good things in the world. This is a major reason why vegetarian diets, which are often very low in zinc, are not healthful at all.

Effect on the oxidation rate. Zinc either balances or may even slow the oxidation rate.

Female counterpart. Copper is the familiar counterpart of zinc. Zinc and copper are called *the twins* in this book because they are so closely related to each other.

Iron. Qualities. Iron is a very hard, brittle metal, but more malleable than cadmium, for example. It is an older and more primitive male element. I think of soldiers marching with their iron guns and swords. In the body, iron is an essential mineral, but too much causes severe inflammation. Iron also hardens the personality and causes odd behavior that was described in the previous chapter. Iron builds up in the amygdala, a part of the brain associated with rage.

Relationships. The iron-dominant person is strong on the outside, but angry and somewhat rigid and brittle, and thus weak underneath. He or she is also usually somewhat emotionally cool or cold, though often of an emotional nature. Iron is found more in men than in women because young women lose some iron each month in menstrual blood. Also, men often eat more red meat, which is higher in iron, than do women. Some women, however, become iron toxic from taking vitamin pills with iron, eating a lot of meat or white flour, or by holding onto anger. Interestingly, holding onto anger inflames the liver and seems to make iron more difficult to eliminate.

Iron men may become enraged when not satisfied sexually, but they are not usually violent, just angry. Also, iron-dominant men tend to be attracted to coppery women. Iron-dominant women tend to be “strong” and are attracted to copper-dominant men. Iron types do quite well in society. They are not great partners due to some rigidity, anger and weakness, but manage adequately in most instances.

Effect on the oxidation rate. Iron may enhance the oxidation rate somewhat, and is needed for many essential body functions. A toxic form of iron, perhaps an oxide, is present in excess in most slow oxidizers.

Female counterpart. Manganese is a counterpart of iron. The two elements are found together in natural mineral deposits. They are also next to each other in the periodic table of the elements, indicating certain common biochemical qualities. They also occur together in the body, for which reason they are called *the friends or amigos* in this book.

Cadmium. Qualities. Cadmium is a very toxic, tough, hard, and brittle metal. These words also describe its psychological qualities, which also include angry and violent. It is the lowest level of the male elements and interferes with zinc and iron, which are more evolved and more spiritual male elements. Everyone needs more zinc today, in part to protect themselves from cadmium in the environment.

High-cadmium men and women are weak or brittle underneath a macho exterior. They are somewhat short-tempered, in most cases, and can be violent when pushed too hard, or when they are not otherwise well balanced. Dr. Eck called cadmium the ‘pseudo-male’ element because it gives the appearance of strength, but it is really weak underneath. It gives a kind of daring strength and ability to push through difficult times.

Cadmium is found more commonly in people such as police and military personnel. They may need this tough and somewhat macho quality to take the risks needed to do their jobs correctly. Too much cadmium, however, will impair their judgment and lead to violence. Cadmium toxicity is also common among women who are living and working in the ‘man’s world’. Some cadmium gives these women a toughness that they feel they need. They become *tough cookies* as a result. Unfortunately, cadmium is very toxic and its presence in working women, especially, is a prime reason for more heart disease and cancer in women today. It can also contribute to some birth defects, ADD, autism and cancers in their children.

Vegetarians may accumulate too much cadmium because many do not ingest enough zinc. Meat is one of the few good sources of zinc. Cadmium often gives vegetarians a rigidity and even a violent attitude toward those who disagree with their beliefs. Cadmium worsens the vegetarian’s deficiency of zinc and significantly worsens their health, unfortunately.

Relationships. Cadmium types tend to have difficulty in relationships. They are often quite sexual, but angry and violent underneath, so they have trouble with really loving any partner. As partners, they are tough, rigid and insecure because their body chemistry is not healthy. They are also often self-centered, controlling and argumentative.

Effect on the oxidation rate. Cadmium speeds up the oxidation rate in a very toxic and uncontrolled way. It is said to have an “aldosterone-like effect”.

Female counterpart. Mercury is a major female counterpart. It is somewhat like cadmium in that it causes weakness and violence, and is found in the same column on the periodic table as cadmium. This indicates certain common biochemical qualities.

Fluoride. Qualities. This element was not part of Dr. Eck's set of male and female elements. However, it is another lower male element that is unstable and a highly toxic mineral. Its toxicity occurs mainly because it replaces calcium and iodine, as well. These are much more stable minerals needed for intelligence, balance and thyroid activity, among many other functions. Fluoride in excess definitely dulls the mind and causes a much lower IQ. It is also associated with Down's syndrome, perhaps other birth defects, cancer and other disorders.

Fluoride may be needed in tiny amounts for bone health and other functions as well. However, toxicity is the rule today, and deficiency is extremely rare or non-existent. Contamination is due mainly to the addition of toxic fluoride compounds to drinking water supplies, at least in the United States and Great Britain. It is also occasionally an air or water pollutant due to mining and refining uranium for nuclear power plants, and fertilizer and aluminum manufacturing.

Relationships. The rare man who is deficient in fluoride tends to be too soft, which coppery women do not like. Those with too much tend to be dull and not much fun.

Effect on the oxidation rate. Fluoride interferes with thyroid activity, so it often slows the oxidation rate. **Female counterpart.** Iodine, but only partially so.

THE FEMALE ELEMENTS (starting with the best or highest consciousness)

Copper. Qualities. This soft, malleable mineral is the main feminine mineral today. It is required for female fertility, all female organ functions and is closely associated with estrogen levels. Female genital secretions are high in copper, though they contain plenty of zinc as well.

Copper is a unique mineral that has caused modern civilization to be softer, gentler and better in many ways. However, coppery people are often too soft, and too gentle and emotional. By this I mean they tend to lack backbone, moral principles and the courage of their convictions. Copper excess is common today and causes innumerable health problems for women and men. Male children, in particular, suffer because they are born high in copper due to their mothers' excessive copper load. Too much copper in young boys and men makes them effeminate and contributes to ADD, ADHD, autism, homosexuality in both boys and girls, and other difficulties.

Relationships. Most women today are quite copper-dominant. It causes them to be more emotional, softer and gentler than men, and enables them to bear children. Infertility occurs when copper is out of balance. Coppery women like to be *in love*, even if it is a fantasy. This often leads to poorer quality relationships and sad romantic adventures. Coppery women often hate men secretly, one of the reasons they are so emotional.

Zinc and iron balance and stabilize more emotional coppery women. Thus, copper and zinc go well together, as do copper and iron. Copper does not mix well with cadmium and fluoride, however, as the violence of cadmium can easily overwhelm the softness and gentleness of copper.

Effect on the oxidation rate. Copper generally slows the oxidation rate. **Male counterpart.** zinc.

Manganese. Qualities. Manganese resembles iron in appearance and qualities. It is an older female mineral and less important today. Low manganese in animals may cause a lack of maternal caring for the young. However, I have not heard of this in human beings, especially since most people tend to be low in bioavailable manganese.

Relationships. Manganese types in both men and women tend to be somewhat emotionally detached, or even schizoid. These traits can be good for keeping peace in relationships. Very high manganese can cause irritability, anger and even violence in rare cases.

Effect on the oxidation rate. Manganese usually speeds up the oxidation rate by supporting or irritating the adrenal glands. **Male counterpart.** Iron.

Mercury. Qualities. Mercury is one of the most toxic elements in our world today, along with cadmium. It is associated with the *mad hatters* in the Alice in Wonderland story. It is unstable, emotional, and somewhat crazy, whacky or kooky. This means it can be harmless, at times, but quite odd or strange. It is the only metal that is liquid at room temperature. The entire world population is somewhat affected by mercury due to its presence in most air, water and food supplies worldwide.

Relationships. Many of the world's divorces have to do with the slightly crazy qualities that mercury can impart to a human being. Just how this occurs is mysterious, but it causes strange and irrational behavior that may be difficult to tolerate. It is related to copper in interesting ways, and high mercury on a hair test is an indicator for hidden copper imbalance.

Effect on the oxidation rate. Mercury can have a variable effect on the oxidation rate, though it usually speeds it up a little. **Male counterpart:** cadmium.

Iodine. Qualities. Iodine is a soft, reddish element that is needed in every body cell. It is particularly important for women's breast health, for beautiful hair and skin, and for the production of thyroid hormones. Deficiencies cause one type of hypothyroidism, a common problem that affects women the most. Iodine deficiency in Western societies is due almost entirely to excess amounts of iodine antagonists in the environment – fluorides, bromides and chlorine compounds.

Relationships. Iodine is gentle, beautiful and gives softness and gentleness to some men and women. It is generally very helpful for relationships. Deficiency is associated with irritability, thyroid disease, lack of intelligence, obesity and other disfigurements that are not helpful for relationships.

Effect on the oxidation rate. Iodine may enhance the oxidation rate by speeding up thyroid activity and cell metabolism in general. **Male counterpart.** Fluoride.

FUTURE MALE AND FEMALE ELEMENTS

This section is more speculative. I believe two other minerals, selenium and silicon, will become far more critical for our health and sexual relationships as well. This has come to light since Dr. Eck's death, though he was very aware of the importance of these minerals in other ways. They will help balance zinc and copper in women. Later, men will be more selenium-dominant, while women will tend to be more silicon-dominant. Let us discuss each of these potential developments of mankind.

The selenium man. Selenium, in particular, is associated with qualities of great stability, joy, happiness, an outgoing personality, alkalinity and other positive qualities. Selenium is needed for thyroid activity and liver detoxification. Selenium, along with silicon, gives certain foods their strength, flexibility and smoothness, such as the texture of corn silk, for example. In our bodies, the shiny, smooth surfaces of cartilage, hair, nails and even the interior of the arteries are due to these elements. They are also powerful anti-oxidant minerals. The selenium and

silicon content of foods varies a lot depending on how and where it is grown. America has the most selenium in her soil in an available form. It helps keep her people supple and strong, though more and more food is now imported from low-selenium nations such as Mexico and Asia. Selenium toxicity occurs only rarely.

Psychologically, the qualities of selenium and silicon are similar. These elements are associated with joy, happiness, silky smooth relationships and a good disposition. Sexually, these elements are restrained, in control and interested in having fun without hurting anyone in the process. The selenium or silicon man or woman is very balanced with sexual behavior, integrating it well and not out of alignment with his or her higher goals in life.

Women in balance. Many women today suffer from copper overload and zinc deficiency. While nutrition is often the critical factor, another factor is the men they live with. As the men become more balanced, their women will be far more able to balance zinc and copper in their bodies. This enables them to balance their rational thought and their emotions.

Silicon as the new female element. Like selenium, silicon is very balanced and not particularly sexually-oriented. Yet it is flexible, open-minded and not at all resentful or angry about sex, or men in general. Silicon-dominant women are also light, airy, fun and happy people to be around because those are the qualities silicon offers. This is well-known in the field of animal husbandry, where silicon is an essential mineral for growing a beautiful coat on certain furry animals such as sheep and goats. Silicon gives some animals the qualities of happiness, friskiness and a positive disposition.

SEXUAL ASPECTS OF FAST AND SLOW OXIDATION

Dr. Eck noted differences between fast and slow oxidizers in the areas of sexuality and relationships. These make sense easily when one considers the differences between an alarm stage of stress and an exhaustion stage of stress.

Healthy fast oxidation is associated with more interest in sex, generally, and a more aggressive sexual nature to some degree. Reasons for greater interest in sex among most fast oxidizers may include:

- *Higher levels of sex hormones and much better energy levels.* Many have ‘energy to burn’.
- *Less mature and more ego-based.* Sex, for most of them, is mainly an ego-based activity.
- *More extroverted or ‘social animals’.*
- *More impulsive and likely to act on their impulses.*
- *More sensitive to touch due to lower tissue calcium and magnesium levels.*
- *Less inhibited and less romantic, perhaps, due to lower copper levels.*
- *‘Iron types’ of fast oxidizing men are attracted to coppery women, which is most of them.* In contrast, slow oxidizing men tend to be more coppery themselves, and perhaps for this reason are less attracted to coppery women.
- *Sexual intercourse with orgasm slows and thus balances a fast oxidation rate temporarily.* This can relieve anxiety and irritability in fast oxidizers more than in slow oxidizers.

Slow oxidizers tend to be less physically sexual. Reasons for this may include:

- *Generally lower sex hormone levels and often much lower overall energy levels.*
- *More introverted or focused within, rather than on others.*

- *More mature, which means that many are less oriented toward physical pleasures.*
- *Less sensitivity or sensual awareness in most cases due to high tissue calcium levels, particularly those with a calcium shell pattern on a hair analysis.*
- *More “up in the head”, rather than physical, due, in part, to lower energy levels, more maturity and higher copper levels.* They may be more analytical and romantic rather than as physically interested in sex.
- *More likely to suffer from traumas and shame around sex due to early molestations and other embarrassments.* While this can increase sexual behaviors, it can inhibit them as well. For example, some men may prefer pornography or masturbation due to these problems.
- *More likely to have physical problems that can interfere with sexual enjoyment.* For example, slow oxidizer women are more prone to depression, anxieties, vaginal dryness, and pain or irritation with sexual intercourse due to physical imbalances.

Some slow oxidizers have an exaggerated sexual desire. Reasons for this may include:

- *Unrealistic romantic notions and projections cause some women, in particular, to get into trouble with sexual activities.*
- *Too much copper and estrogen dominance due to liver toxicity and other problems may cause more sexual interest.*
- *Sex is an escape from often deep and hidden feelings of depression, anxiety or low self-esteem, especially for some women.*
- *Brain fog is common and makes millions of women too open-minded, gullible and unclear about beliefs.* Savvy fast oxidizer men easily exploit this trait for selfish purposes of sex.
- *An elevated sodium/potassium ratio in a slow oxidizer can increase sexual feelings.*

SEXUAL DYSFUNCTIONS

Low libido or low sexual desire. Common causes are low overall energy, a calcium shell that reduces sexual pleasure, the presence of toxic metals such as mercury, copper and others, vaginal dryness and other physical causes, depression, fears and resentments. As the energy level increases and general health improves with a development program, sexual interest often returns easily and quickly, often within a few months.

Erectile Dysfunction. Low zinc, arteriosclerosis, high copper or cadmium, and low vitality are common causes. At times, psychological or other factors are important causes.

Sexual aggressiveness. These are more likely fast oxidizing men or those in a four lows pattern. They often have high levels of cadmium, lead or mercury. These irritate the sex organs and nervous system, increasing a pathological sexual drive. Recently, women have become more sexually aggressive in many instances. Possible reasons for this are that:

- *Men are less aggressive today due to high copper, lower zinc, generally poorer health, adrenal exhaustion and depression.* More women are deciding to take the initiative, sexually, to find a marriage partner, have a baby, or for other reasons.
- *Women with high copper are often more sexual, though often in a romantic way.*

- *More women are depressed and somewhat numbed by high tissue calcium and magnesium. They may initiate sexual encounters in order to feel better. Sex can become a drug to them.*
- *Women with excessively high cadmium may act like cadmium-dominant men, which means more physical, more sexual and less romantic.*

Homosexuality. Most homosexuals have a slow oxidation rate or a four lows pattern. Usually, copper is out of balance and zinc tends to be low. Homosexuality is a complex phenomenon biochemically, especially in women.

Teen promiscuity. This problem has a lot to do with the general breakdown of traditional moral values and the lack of parental oversight of teens today. Many teens are just experimenting, though they need more education, in most cases, to avoid STDs and predatory sexual partners. Other reasons for promiscuity include low self-esteem for any reason, a powerful need to fit in with the crowd, a history of sexual abuse, or perhaps other problems in the family and home.

I am often appalled when I review hair analyses of teens. Most are extremely slow oxidizers and many have a calcium shell pattern. This is due, at least in part, to a combination of stress, atrocious diets, an unbalanced lifestyle and not nearly enough sleep. I would ask all parents to keep a firm hand on teens to reduce all these problems. I believe this would help solve many of the problems of teens.

Many other sexually-related disorders are discussed in Chapter 31. General sexual behavior and healthy lifestyles are discussed in Chapter 2.

NUTRITION AND SEXUAL ENERGY

Many nutrition systems are designed to enhance sexual interest. This certainly occurs as well on development programs. However, this program can also help those who wish to refocus or sublimate their sexual energy away from so much sex and toward other goals. As body chemistry strengthens and mineral pairs such as zinc and copper come into better balance, sexual desire often decreases. This is not a disease state. It is a state of better balance between the male and female forces within. It then becomes easier to have less sex and focus on more spiritual pursuits. This can be helpful for those with sexual addiction, for example.

To move this process of balancing the body along faster, eat more high selenium foods such as blue corn chips, goat milk or goat cheese, onions, garlic, organic yellow corn products if they are 100% natural, and perhaps some nuts such as Brazil nuts. Meats such as chicken and turkey are also very good. For more zinc, the only good sources are quality meats and eggs, some small fish such as salmon and sardines, and some pumpkin seeds, perhaps. Vegetarians must eat pumpkin seeds every day, and will still have trouble obtaining enough high-quality zinc. Supplements of minerals are helpful, but not as good as foods, as a general principle. For silicon, rice polishings and whole grains are good sources.

SEXUAL DEPLETION PATTERNS ON A HAIR MINERAL ANALYSIS

An important topic that is not often addressed is sexual depletion. It occurs in both men and women, and more so in women, most likely. Hair analysis patterns that may indicate it are a low sodium/potassium ratio, a bowl pattern or very slow oxidation.

Vampirism in the sexual arena. The topic of energy vampires is also not discussed often enough, in my view. It is the stealing of energy from another person that happens in subtle ways. Mr. Roy Masters discusses how sex is probably the single largest arena in which it occurs. Usually, men take energy from women, but it can go the other way as well. It is an unfortunate aspect of male-female relationship that causes nothing but hatred, depression and even serious illness and premature death from diseases like cancer.

Vampirism is a karmic and psychological phenomenon that is not easily explained. However, most people know that when they are around certain people they can begin to feel drained, while being around others does not produce that feeling and may even leave one feeling more energized. Some people just naturally give up energy to all those around them, which is nice but leads to very bad health in many cases. Many cancer patients do this, in fact. In the sexual arena, many factors come into play as the intimate contact between the bodies causes interactions in their energy fields that are quite strong. On the other hand, some people benefit from this interaction as well.

LOVE, SEX, SPIRITUAL MARRIAGE AND DEVELOPMENT

What is love? Love means many things to different people. I will suggest that it is the primal energy or force that flows from the Creator to all created things, including human beings, and keeps the physical universe going. It is always present, although one may not always feel it or be able to receive it. As this force of love acts through each of us, it can feel sweet and gentle, while at other times it may seem forceful and come across as harsh or *tough love*. Thoughtful people know that, at times, one must be direct and even forceful to love another person in the manner they require at that time. Anything less is not love, but rather just acting from fear, perhaps enabling another, or an attempt to manipulate another.

Sex is not love. Many people believe that love has a lot to do with sex. This is not true. While love is a pure feeling or energy, sex is a physical act. Nature designed the act to feel very good so the species would reproduce itself, but it is still just a physical act. For some men and women, therefore, sexual activity is just a biological urge that the body wants to satisfy. For some, the desire for sex is just a desire for attention, which many call love. For some, it is a drug to help them forget their problems for a few hours. For others, it is a way to relax after a hard day's work. All these are okay, but they are not love and have nothing to do with it.

This needs to be clarified, although it may not be a popular stance today. Love is a pure energy or feeling that is calming and peaceful. Sexual desire is usually somewhat selfish and often deceptive and even manipulative. While love inspires and uplifts, too often sex in uncommitted relationships spreads disease, leads to lowered self-esteem in women, in particular, and tends to spoil men. Separating love and sex in your mind and becoming clear about them is most helpful, especially for young women who are looking for a partner and who really want a loving relationship.

Development can shift relationships. For many people, development helps open their eyes to a new way of living based on common sense and on love of the self and of others. However, this is not how many people live today. As a result, as one's energy level, mental clarity and emotional balance improve, relationships of all kinds may shift. Friends that one spent time with at bars or cocktail parties may seem less interesting. Work situations in stuffy

offices may be seen as quite unhealthy. Partners who do not care about themselves or others may become more difficult to live with. Instead, one may prefer others who live a healthier life.

Making these changes is not easy in some cases, but are often among the most rewarding changes a person can make. This does not mean one no longer loves people who live on sugar, stay up till all hours of the night or who believe that sex is love and get in trouble because of it. However, one may find it best to distance oneself from such people, and by so doing, show them an alternative way of living.

Spiritual marriage. Marriage takes place in the physical world, but also in a spiritual way that is even more important. The idea is to blend your physical energy or ‘marry’ the high self or God. This is the same as what Jesus called *becoming the bride of the holy spirit* (for both men and women). It is a blending of your substance and energies with another part of yourself, rather than with the lower or physical self of another person. The purpose of this joining is to be able to listen and hear the promptings of the high self first and foremost. One can still marry in the physical world, but this is for entirely different purposes, such as companionship or raising children.

The spiritual marriage with your higher self should be done first, in all cases. Then all your other relationships will work better. The bible states this principle as “first seek the kingdom of heaven and all else will be added thereto...”. If your relationship with the high self or God is not placed first, then other relationships tend to become confused and often unhappy and destructive.

How to contact and have a relationship with the high self or God. For thousands of years, wise souls have addressed this question. Many methods can help, from making sure you take some time alone each and every day, to using various techniques such as prayer, affirmations and meditations. Each can find his own way, but I will offer a few guidelines simply to avoid errors:

- *While going to a church is superb, just sitting in church may not be adequate to connect a person with the high self or God.* Too many people just listen and have a feel-good experience in church. This is fine as far as it goes. However, letting go of the ego within, sometimes called the lower self, is a great key.
- *I strongly recommend the Roy Masters meditation exercise.* It moves the energy downward from heaven to earth, literally, bringing in a freshness and wondrous new energy to anyone who is willing to use the method daily. It is also safe and can be done at home without special apparatus or training. Other meditations may not be as safe and can connect a person with realms that are unhealthy.
- *Another method that is simple is a daily stroll or slow walk.* This is another ancient method to help people connect with their higher centers or high self. One must walk on a quiet street, preferably with no noise or danger from cars, wild animals or other distractions. One must also walk at least a half hour solidly, and preferably for closer to an hour without many distractions. Having a dog to walk can be helpful in this regard, providing the dog is well-behaved.

42. THE PSYCHOLOGY OF INDIVIDUAL MINERALS

Peter, age 23, had been a bright, emotionally sensitive, angry child and somewhat clumsy and foggy-minded. In spite of a good home life, at 15 he began using marijuana. At 17, he began using cocaine. He never became completely debilitated by the drugs, but was unable to go to college or hold a job. His first hair analysis showed a zinc level of 10 mg%. This is associated with copper toxicity, emotional instability and often other emotional problems. His oxidation rate was slow, with sympathetic dominance. This is associated with depression, low energy and a desire to fit in and try hard to be like others. This can be a motivation for drug use.

Peter's parents worked hard to keep him on a development program. He made slow, steady progress over the past four years. His zinc level is now 13 mg% and his oxidation rate is faster. He has stopped all drugs, is living on his own, and getting straight As in college.

This chapter is an introduction to the ways that individual minerals can affect the mind, personality and behavior. Dr. Eck was astonished to find that specific minerals, when high or low in the hair tissue, were associated with specific emotions and behaviors. He researched the subject in the medical literature and found more evidence of its veracity. This subject involves several levels of hair analysis interpretation, including:

- *How minerals affect the brain to contribute to mental and emotional symptoms.*
- *'Personality types' related to having too little or too much of a mineral.*
- *Anthropomorphic aspects of minerals.* This is the concept that the *physical qualities* of a mineral may influence a living being. For example, calcium is a hard and stable mineral. When elevated in the hair tissue, it appears to impart some of these qualities to the person.
- *Combination effects* of having high and low levels of a dozen or more minerals acting at the same time upon the nervous system.

GENERAL THEMES

Certain themes run through this chapter. For example, the heavier minerals are generally less beneficial, while the lighter ones are associated with more joy and happiness. Also, the alkaline minerals tend to relax the body, while the acid-forming minerals are more energizing and irritating, at times. Also, the male elements tend to dull the mind and perhaps relax the body. The female elements tend to excite the mind and the body.

For reference purposes, basic scientific information about each mineral is contained in Chapters 14 through 18, and in the *Mineral Reference Guide* in Appendix II.

THE MACROMINERALS

CALCIUM. Qualities. Calcium is a hard, chalk-like, very alkaline-forming, powerful, structural mineral. It is used in concrete, for example, to provide stability and compressive strength. It is an electrical insulating material and also insulates or buffers the nerves of the body against stress. Calcium is also used in cement because it mixes well with many other minerals.

Psychological qualities. Calcium is tough, stable, structural, protective, dull intellectually, and can be defensive - like a concrete bunker or bomb shelter. When balanced with magnesium and zinc, it is calming and relaxing. Without magnesium or another solvent, however, it can become very defensive and tough. If I were to assign an animal to each mineral, for calcium I would perhaps think of a bull - tough, strong, defensive and intellectually dull.

Symptoms. High hair calcium = biounavailable. It cakes up into hard compounds. One becomes hardened, rigid, defensive, hunkered down as though living in a concrete bunker, tired, apathetic, depressed, 'heavy' or serious, and generally emotionally suppressed or repressed; Low calcium = unstable, hyper-reactive to stress, irritable, uptight, ready to fight or run, aggressive or anxious.

Personality. Those who obtained a lot of high-quality and bioavailable calcium as babies and children tend to grow up more stable, shorter in stature, stocky and in good general health. They likely remained in faster oxidation for a longer time and have better tissue calcium reserves or perhaps a better ability to absorb calcium.

MAGNESIUM. Qualities. Magnesium is a very strong, lightweight, alkaline-forming, flexible, metallic element. Racing bicycles are often made of magnesium for its flexible strength and light weight. Magnesium is an excellent electrical conductor, and in the body is an essential component of thousands of enzymes,. It is a close partner or synergist with calcium. Bioavailable magnesium helps keep calcium active and soft.

Psychological qualities. Magnesium is bright and shining, flexible yet very strong, and not brittle at all. In fact, it is flowing or helps one 'go with the flow' in a healthy way. Think of a gazelle.

Symptoms. High magnesium=biounavailable. One becomes weakened, tired, lethargic and depressed. A *calcium shell* starts building up; Low magnesium=weakened, irritable, high strung and belligerent. These symptoms are similar to calcium, except they may be due to enzymatic imbalances, rather than structural problems. This is somewhat complex, but psychological symptoms can be due to both types of imbalances. Dr. Eck found that low tissue magnesium is associated with *belligerence*. This quality is slightly different than aggressiveness, a quality of low calcium. Belligerence is more of a feisty nature and not as fierce, rigid or as aggressive as a low calcium.

Personality. Magnesium-dominant people are light, bright, cheerful, happy, and they shine, somewhat like the lightweight metal. This quality is rare, however, in Western societies because magnesium is low in most diets. It may be more common among some primitive tribes that eat a far healthier diet.

SODIUM. Qualities. Sodium is a lightweight, shiny, unstable, extremely alkaline-forming metallic element. In solution, it is a great solvent and, as a result, sodium compounds, including salts, are used in industry as solvents for everything imaginable. In the body, sodium is closely tied to aldosterone levels and the adrenal glands. Dr. Eck called sodium the *volatility*

element. Sodium dissolves most other elements, so one can say it causes change. It is the main *change agent* of the oxidation rate in our experience. It changes first and the other minerals follow.

Psychological qualities. Sodium is a solubilizing or dissolving element in a person's life. Like magnesium, it is energetic and bright, but it can be aggressive and destructive in excess. When deficient, it is tired and *burned out*. Think of a fox, wolf or other volatile, but graceful mammal.

Symptoms. High hair sodium=volatile, changeable, active, positive, moving up in life, irritable, higher energy and aggressive when in excess; Low sodium=tired, depressed, exhausted, apathetic, burned out, negative, and if extreme, despairing and suicidal.

Personality. Sodium gives the personality a lightness, fullness and gentleness that is lovely, based on strong adrenal energy coupled with a balanced body chemistry. Such people are rare today. This is due to so widespread adrenal problems and, in part, due to the limited bioavailability of most sources of sodium on earth. Sodium in salt is not very bioavailable. Sea salt is better, but still not good. Other food sources include celery and some other vegetables.

POTASSIUM. Qualities. Potassium is a soft, rather unstable metal, an excellent electrical conductor, and quite alkaline-forming. In the body it is intimately involved with the thyroid gland, and regulates the heart and blood in many subtle ways. It also has to do with adrenal activity, specifically with glucocorticoid or cortisol activity. This is more of a long-term adrenal hormone that raises blood sugar longer term than adrenaline or aldosterone, which are more associated with sodium.

Psychological qualities. Potassium is soft, solubilizing, unstable and associated with making an effort and 'holding on tight'. Dr. Eck called it the *follow through* mineral, which means a person who continues on with a project, for example. Potassium is also a change agent of the oxidation type. It rises in response to stress, and it rises in relation to sodium when a change of oxidation rate is ready to occur, or perhaps when death is immanent. Think again of a wolf, fox or cheetah.

Symptoms. High hair potassium=volatile, out of control, excess thyroid effects, a higher blood sugar level and stressed; Low potassium=tired but pushing oneself, perhaps depressed and exhausted, and unbalanced and often low blood sugar. Potassium, in adequate quantities, makes one feel good about oneself. This is one reason why people who use cortisone and other steroids 'feel no pain'. Low potassium is also an indicator for a lifestyle pattern called *sympathetic dominance*. This indicates a person is pushing himself, spending too much time in a fight-or-flight state when the body is actually exhausted and cannot keep up the effort very well. One is usually tense, angry and fearful underneath a frenetic working pace or tendency to worry.

Personality. Potassium in sufficient quantity and quality gives the personality a certain lightness and energy, similar to sodium. The person may be more emotional, however, and this is related to the thyroid. They may love the feeling of going rapidly and furiously. These individuals usually deplete their potassium reserves early in life and end up spending the rest of their lives in slow oxidation. In fact, they often become stuck in *sympathetic dominance pattern* thereafter, until they either become ill and die, or learn to slow down. Just eating potassium in foods does not replenish it well in these people due to adrenal and thyroid dysfunctions.

PHOSPHORUS. Qualities. Phosphorus is a very hard, extremely unstable mineral that is highly acid-forming and very fiery. Phosphorus can be an antagonist of calcium. Calcium is

very stable and steady, while phosphorus is so unstable and energetic it must be stored underwater at room temperature or it will literally burst into flames. Phosphorus in the body is associated with good vitality and high energy. It is required for many energetic enzyme reactions, such as those that produce adenosine triphosphophate or ATP.

Psychological qualities. Phosphorus is powerful, bright, fiery and vital. It is also associated with *digestive fire* or ‘gut energy’ and ‘gut intelligence’. However, without a balance with calcium, in particular, it is completely destructive of itself and everything around it. Think of a lion.

Symptoms. Higher phosphorus=vital, alive, fiery and perhaps indicates karmic release; Low phosphorus=weaker, lower vitality, less digestive and/or ‘gut level’ energy or brightness.

Personality. Fiery and strong. This is seen in some fast oxidizers and some who eat a lot of good quality meats, which are very high in a very bioavailable form of phosphorus. High phosphorus types are often also somewhat volatile and angry, perhaps because iron is found with phosphorus in most foods, and iron is associated with anger and rage.

SULFUR. Qualities. Sulfur is a soft, yellowish, powdery, acid-forming, very common mineral used in gunpowder and commonly found in cleaning powders and in all chelating drugs and herbs because it *cleans out* toxic metals. In the body, sulfur is common and used as a conjoining or connecting agent in all connective tissues such as ligaments, tendons, arteries and veins. In this sense, it is a structural element in the body and in most plants as well, It also helps balance copper in the body. Sulfur is found widely in common foods, especially animal foods. In eggs, it helps nourish and nurture new life. The human placenta is also rich in sulfur, as it nourishes the fetus and keeps it clean. Keeping a developing fetus very pure is essential to avoid birth defects and other problems.

Psychological qualities. Sulfur is watery, nourishing, smart, connected and cleansing. Think of a house cat that purrs softly and cleans itself continually.

Symptoms. High available sulfur=cleaner energy and, at times, a less toxic personality; Low sulfur=more toxic and perhaps a less active person.

Personality. A sulfury personality is ‘clean as a whistle’ in the sense of squeaky clean energy and timing. Think of a boat hull that can move along without making waves. This is uncommon, but found in some people who live on a lot of cabbage, broccoli, cauliflower, eggs and some meats. It is more common in the Oriental nations than in Western countries.

THE TRACE MINERALS

ZINC. Qualities. Zinc is a soft, flexible, whitish metallic element. It is somewhat acid-forming, but fairly neutral in this regard. It is used very widely in industry as a coating on steel and other metals because zinc hardens and protects the metal underneath it from rusting and other damage. This process is called galvanizing because it requires a certain type of electric current to achieve the coating with zinc. Zinc also alloys or mixes well with other elements in metal-working. Zinc is found mainly in meats as it has to do with the animal world more than the vegetable world.

In the body, zinc is a primary *sedative* or anti-stress mineral that stabilizes and balances as well. It is needed particularly for men for sperm production and for the prostate gland. Also, according to Dr. Eck’s research, zinc nourishes the neocortex or ‘new brain’. This sits atop the old animal brain and literally ‘puts a lid on’ and calms the emotions.

Psychological qualities. Zinc is flexible at times, slightly stimulatory when needed, but basically calm and balancing. It helps create a strong and grounded foundation for future physical and mental development. It is also very wise and creative. It is a more new-age or recent 'male' mineral associated with flexible strength, compassion, and understanding. It is associated with higher thought and higher emotions such as love and wisdom. Think of a wise and strong animal, perhaps a whale or dolphin.

Symptoms. Higher zinc=calm, balanced, thoughtful, advanced male energy; Low zinc=emotionally and mentally unstable, disagreeable, too emotional, lower male qualities such as anger and violence. Dr. Eck also felt that too much zinc would make a person into a martyr. However, most martyrs today are religious extremists who are definitely not high-zinc types.

Personality. This is a Jesus type of man or woman who is reasoned, direct, caring, not fanatic in any way, calm under fire, wise and the protector of women and children. The zinc type of man or woman helps the coppery emotional people to become more balanced and sane.

COPPER. Qualities. Copper is a very soft, reddish, somewhat acid-forming, very malleable or easily shaped metal. It is an excellent electrical conductor and very plentiful on earth. It is quite toxic in high amounts. In the body, it is a conjoining or connecting mineral needed for all connective tissue. It is also stimulatory and helps produce the stimulatory neurotransmitters. It is closely tied in to the tuning faculty of the brain. Copper is the primary 'female' mineral, associated with estrogens and needed for fertility and pregnancy. The level rises during pregnancy, and causes pregnant animals to be fierce and deadly when threatened. Copper rises before the menstrual period, a time when women are more emotional and also more violent.

Psychological qualities. Copper is bright, creative, nurturing, and very 'tuned in' or intuitive when properly balanced with zinc. It is also soft, gentle and very malleable, meaning it accepts direction well, as do most women compared to men.

However, when not balanced with zinc and iron, it can be emotional, angry, confused, violent, often devious and underhanded. Its intuitive quality becomes confused as well, and its loving and caring quality become unstable. When out of balance with zinc, copper also tends to be superficial and vampire-like in the sexual arena, to 'attract the boys' with the goal being little more than to confuse and distract them for their selfish pleasure. It can also be flirty, suggestive and have low moral standards.

Copper can be 'spiritual' because it can enhance one's ability to tune to different dimensions. Often, however, it is merely unbalanced and schizoid. One may just think one is spiritual because one may hear voices, channel entities and accomplish other tuning feats. Think of a female lion or other female, protective animal capable of ferocity when threatened.

Symptoms. High available copper=spacey, emotional, racing thoughts, detached or schizoid, emotional instability, mood swings, panic attacks, anxiety, bipolar and other mood disorders. When very high it is associated with epileptic seizures, violence, schizophrenia and other psychoses; High bioavailable copper=similar to the above, but perhaps with other symptoms such as weakness, depression and others associated with a low sodium/potassium ratio; Low available copper=less romantic, more physical concerning sex, often emotionally shut down and a tendency to more heart attacks in part for this reason. In most cases, low copper is associated with fast oxidation symptoms such as irritability, belligerence and hardness.

Personality. The copper-dominant personality tends to be sensitive and creative, often with some reddish color in the hair. It is common in Western nations today in which people eat

less meat and the food is somewhat lower in zinc. Common occupations for these people include designers, artists, writers, musicians, singers, psychic/intuitive types or engineers. Other qualities include a more childlike nature, young-looking, more gullible and loving but prone to fears, rage and hidden anger. They can be too emotional and have difficulty, at times, with daily life. Chapter 43 discusses a number of pathological copper personality types.

IRON. Qualities. Iron is a hard, blackish, inflexible, somewhat brittle, structural element that conducts electrical current well, though not as well as copper. It is used in industry as a structural metal and for millions of other purposes because it is hard, strong, steady, easily worked, and abundant. Think of a huge skyscraper made almost entirely of steel with iron reinforcing rods holding the concrete together. Iron is also very magnetic. In the body, it is somewhat acid-forming and used in energy production, to transport oxygen, and for protection of the cells against oxidant and other damage. In a toxic form, however, iron is a powerful oxidant, which means it is very damaging to body tissues. Iron accumulates in the amygdala, a very special area of the emotional or animal brain that some say is the *seat of the emotions*. Here iron can play havoc with the mind, contributing especially to feelings of rage and anger.

Psychological qualities. When properly balanced with zinc and copper, iron is effective, competent, intelligent enough for most situations, and able to follow through fairly well. Iron is somewhat tough, often attractive and charismatic, has more male than female qualities, not too bright, always angry to some degree but often able to hide this from others, emotionally cold and somewhat superficial, caring to a degree, often grounded but not firmly, and quite sexual. Think of a prancing show horse or another large, attractive, sexy animal that could harm others if left to its own devices.

When unbalanced, which usually means excessive, iron is rigid, angry, calculating, lying, devious, and even brutal, at times. When out of balance it also tends to be one-track and hard-driving. This makes one very focused, a positive trait. However, it is also very rigid, authoritarian, even brutal and underhanded, if needed, to reach the goal. Iron is a very magnetic mineral that guides others. It can attract the ladies and it gives direction or ego strength to human beings. Zinc and copper, in contrast, are less magnetic and more prone to *taking* direction from spiritual sources, such as in the phrase of Jesus “not my will, but thine be done”.

Symptoms. High iron=enraged, hard, brittle, inflamed; low iron=wishy-washy or ‘anemic’.

The iron personality. Iron personality types or ‘iron heads’ are very common in Western nations. They can be men or women. Most are capable, determined, a little macho, risk-takers, ambitious, creative in a limited sort of way, and often not brilliant but intelligent-sounding and with a decent brain. They often ‘talk a good line’ to get what they want. Integrity may be low, however. Sexually, they are often a little loose, though often loyal to a partner in many cases. They tend to be charismatic, seductive and sexually-oriented, even if they feign a lack of interest in this area. Their politics is often secretly authoritarian and socialist, corrupt and power-hungry. Their charisma and attractiveness can make them good politicians. They can read an audience and tell people what they want to hear. It may not be logical, but most people do not think clearly, so many are swayed. Many are parents. Mafia families often contain many iron types.

MANGANESE. Qualities. Manganese is a hard, dark-colored, acid-forming, tough metal found along with iron in the earth. It is used in industry to make iron into stainless steel, a metal that is much more flexible, tougher, stronger and rustproof. In the body, manganese is

needed for hundreds of enzymes involving the thyroid gland, anti-oxidants, tendon and ligament health, energy production in the cells and many other functions. Most people are low in bioavailable manganese. In some animals, manganese is required for maternal behavior.

Psychological qualities. Manganese is quiet, often somewhat irritated, detached and the behavior is often a little outside of the normal. In large quantities, it can be quite toxic and violent in extreme ways such as psychopathology and sociopathology. Think of a show horse, but not as healthy as the one above.

Symptoms. High hair manganese = detached, emotionally cool, somewhat irritable, schizoid, and somewhat ‘mad’; Low available manganese = tired, low thyroid and adrenals, slow oxidizer, depressed. Most people have a combination of these two, today. More extreme toxicity may cause a trance-like state, extreme irritability and erratic behavior. In particular, the manganese-toxic person may exhibit various anti-social behaviors, violent behavior and involvement in ‘stupid’ or impulsive crimes. These can occur in domestic violence situations, for example. Other symptoms of manganese overload are compulsive acts, emotional instability typified by easy laughter, crying and hallucinations, the way one behaves when drunk. Others include dementia and extrapyramidal brain signs such as impaired coordination and poor movement control.

‘Manganese madness’, a recognized syndrome. Manganese miners, welders, and others exposed to large quantities of manganese develop a form of psychosis or schizophrenia in which violent and anti-social behavior may occur. Symptoms are due, at least in part, to dopamine depletion. Manganese is involved in a number of kinase, hydrolase, decarboxylase, transferase and superoxide dismutases as a co-factor in these critical brain enzymes. Mad cow disease or bovine spongiform encephalitis (BSE) may be related to manganese imbalance due to the use of Phosmet, a pesticide that interferes with manganese as well.

Manganese and psychopathic behavior. Dr. Gottschalk’s studies strongly implicated manganese toxicity with violent crime. The studies were performed in the California State Prison system in the 1980s. Inmates had 2-7 times the amount of manganese in their hair tissue as controls in these double-blind studies. Dr. Paul Eck also felt manganese is associated with detachment and a form of schizophrenia.

Personality. Similar to the iron personality – hard, cold, irritated, authoritarian and power-hungry due to a lack of the higher consciousness elements such as zinc and copper.

SILICON and SELENIUM. Qualities. These two metals are shiny, smooth, light in color in most compounds such as sand and glass, and very alkaline-forming. They are widely used in industry in thousands of ways. In the body, silicon and selenium give the joint cartilages, hair, nails and skin their smooth, shiny texture as well as their strength and flexibility. Selenium is also protective and detoxifying in the body.

Psychological qualities. Silicon and selenium are happy, smooth, silky, soft yet strong and flexible, and needed for mental balance and mental development in a more advanced way. Think of a gazelle, a deer or other vibrant, beautiful, sleek and generally happy animal.

Symptoms. Higher selenium and silicon = joyful, light, spiritually-oriented, content; Low selenium and silicon = irritable, nervous, crabby or unhappy. Symptoms of low selenium and silicon are retarded development of certain higher centers of the brain, a common situation in most people today. Other mental and emotional symptoms include a cloudy or negative disposition, irritability and depression.

Selenium and silicon are also a future type of sexual person who is not primarily interested in sex for its own sake, but rather just as part of a loving relationship.

Personality. They tend to be healthy, happy, full of light, easygoing and not too concerned about anything other than simple joy. This is rare because selenium, in particular, is not too bioavailable in most food today. A few people with blonde hair have higher levels of selenium and silicon, though most people are quite low in these minerals.

LITHIUM. Qualities. Lithium is a very lightweight, shiny metal, and the first of the elements in the periodic table to be a metal. It is an excellent conductor of electricity and very alkaline in its reactions. It is found in many foods and is abundant in plants, in particular. It is used widely in industry for lubricants, rubber, plastics, batteries, and in metal alloys because it combines well with other metals. Lithium is known to stabilize and protect the brain. As a brain protector, its use may be life-saving. In medicine, it is used in toxic doses to control some symptoms of manic-depressive or bipolar disorder.

Psychological qualities. Lithium is very lightweight, happy, fun and joyous. Think of an elf or a fairy.

Symptoms. High lithium=peaceful, full of light, happy and relaxed; Low lithium (which is common)=irritable, crabby or unhappy.

Personality. The lithium personality is rare since most people are low in this element. The person is full of joy, and happy almost all the time.

TOXIC METALS AND PERSONALITY

LEAD. Qualities. Lead is an extremely heavy, dense, acid-forming, soft, dull grey, and very poisonous element. It is widely used in industry, unfortunately, because it is an excellent lubricant for machinery and it mixes well with other metals. Lead was discovered thousands of years ago. It was used to make water pipes in the Roman empire, for example, where it poisoned the people who drank the water. This probably contributed to the downfall of the empire.

Psychological qualities. Lead is a dense, stupid, dull, older 'male' element. It can make one hyperactive, nasty, anti-social and even violent. Think of a rhinoceros, a rather dull, cantankerous and quite a deadly animal.

Symptoms. In babies and children, symptoms may include ADD, ADHD, mental retardation, a nasty temperament, bad behavior, and many types of developmental delays. Lead in adults tends to cause violence, mental dullness, adult ADD and many other mental disorders. Lead is associated with a very ill and troubled person.

Personality. This is not common today, fortunately. They are murderers and psychopaths. In olden times, there were many roaming the earth. Today, they are mostly seen on the evening television news when one commits a horrible crime. Otherwise, they are mainly seen in the horror movies about ax murderers and similar stories.

MERCURY. Qualities. Mercury is a very heavy, shiny, very acid-forming and extremely toxic metal that is liquid or flowing at room temperature. It conducts electricity extremely well and kills many germs on contact. It is also extremely poisonous for human beings. It is widely used in industry as a fungicide, in making paper, in gold mining, as a lubricant, for treating seeds to prevent root rot, in dental amalgams and elsewhere. It mixes well with other elements. In the body, it has a particular affinity for the brain and the kidneys.

Psychological qualities. These include flowing, quick thinking, unstable, emotional, quirky, hacky, kooky, ‘mad’ or unusual, devious, underhanded, and is an older ‘female’ type of element. Mercury toxicity caused the affliction of the ‘mad hatters’ described in *Alice in Wonderland* and in other books. Think of a mad or rabid dog.

Symptoms. Irritability, anxieties, shyness, fright, timidity, a strange look and personality, and ultimately violence and other problems.

Copper and mercury. Mercury and copper are related, both in terms of personality and in other ways. Both are ‘female’ elements, although copper is a lot more advanced. Both metals have an affinity for the brain, and both are excellent electrical conductors. Interestingly, both kill many germs, parasites and fungi. Their psychological symptoms are also somewhat similar.

Personality. Mercury is ‘all over the place’. Mercury personalities are often very intelligent, but not logical, and often dishonest and corrupt. Most are unhappy and devious in their effort to get what they secretly want. Many have a good sense of humor, but are quite serious underneath and cannot really laugh at themselves. They are usually uncentered, ungrounded, and often inconsistent and conflicted. They often have hidden agendas and often attempt to corrupt others to make themselves feel better about their own corruption.

CADMIUM. Qualities. Cadmium is a heavy, very hard, tough, very acid-forming and very toxic metal. Unfortunately, it is widely used in industry for plating because it protects other softer metals that are underneath it like copper, brass or aluminum. It is used in batteries for its electrical properties, and in yellow dyes, among other uses. In the body, it has a strong affinity for the adrenal glands, where it is a powerful stimulant. It also is extremely neurotoxic.

Cadmium is found in cigarette papers and tobacco, making cigarettes a potent source of this toxin. Marijuana and coffee contain some as well. Cadmium may give a false feeling of strength to those who smoke it or ingest it in some form. It appears to do this by powerfully stimulating the adrenals. Cadmium may allow the military and police to push themselves to take risks and do things they otherwise would be frightened to do. According to Dr. Eck, a possible mechanism for this is that cadmium sequesters copper, hiding the sensitive side of a person. The weak and brittle nature of cadmium, however, may be related to an increase in post-traumatic stress disorder in those who risk their lives on a daily basis such as police and the military.

Psychological qualities. Hard, tough in every way, inflexible, perhaps violent, and ‘macho’ (even the women). Cadmium is the lowest ‘male’ element today. It appears strong, but is really weak and brittle underneath. This is why Dr. Eck called it the *pseudo-male* element. It hardens the personality, as well as the arteries, kidneys and other tissues of the body. Think of a raging tiger who is ill underneath and just trying to protect itself.

Higher cadmium women. Cadmium toughens women and helps them survive for a while in a ‘man’s world’ such as certain scary or difficult jobs. It is somewhat illusory, however. They are sometimes called ‘tough cookies’. This is beneficial for their careers, though they often suffer physically with more heart disease, high blood pressure and cancer due to cadmium toxicity.

Symptoms. These include fatigue, irritability, a ‘hardened’ quality to the personality, and violence when extreme. Many children today are born with some cadmium toxicity from their mothers. The more toxic ones are often hard to manage, angry and aggressive. Disorders such as ADD, ADHD, autism, learning problems, infections, delayed development and aggression often involve cadmium toxicity to some degree. As cadmium is removed with a

development program, these problems often go away and the children can turn sweet, almost overnight.

Personality. The cadmium type of person is rare. Most are men who are violent, psychopathic, mentally unbalanced, unstable and murderous if provoked.

ALUMINUM. Qualities. Aluminum is a very lightweight, soft, shiny and toxic metal. Aluminum is neutral in terms of being acid or alkaline-reacting. It is used widely in structural material such as aircraft parts for its good strength, flexibility and light weight. In the body, it is a neurotoxin that mainly affects memory and cognition.

Psychological qualities. Mentally weak, 'soft in the head', a 'light weight' toxic metal.

Symptoms. Forgetfulness and if extreme, it is associated with all the dementias, Alzheimer's disease, foggy thinking or brain fog, and symptoms of confusion, memory loss and at times delusions.

Personality. The aluminum personality type is basically a foggy-headed person who is not grounded or centered. These are common today because aluminum poisoning is so common. The person may be forgetful as well, and often spacey.

CHART OF MINERAL QUALITIES

The chart below is a summary of this chapter. The high and low levels refer mainly to the levels in the soft tissues of the body such as the hair.

THE EFFECTS OF MINERALS ON PERSONALITY

CALCIUM (Ca)

Key words: rigid, defensive, hard, cold, mental stability, structural material
 Low Calcium: emotionally unstable, irritable, hyperactive, nervous, short-tempered, tense, unable to slow down, extroverted, type 'A'
 High Calcium: rigid, defensive, withdrawn, *a calcium shell*, sluggish, numbed, tired

MAGNESIUM (Mg)

Key Words: enzyme stability, strong, light weight metal, flowing quality, hard
 Low Magnesium: high-strung, irritable, hyperactive, belligerent, type 'A'
 High magnesium: (biounavailable) defensive, withdrawn, sluggish, weak

SODIUM (Na)

Key Words: a powerful solvent, a change agent, initiative, volatility
 Low Sodium: fatigued, depressed, unable to get started; very low is adrenal burnout
 High Sodium: active, high energy, aggressive, volatile, a 'starter', acute stress

POTASSIUM (K)

Key Words: a potent solvent, heart and thyroid regulator
 Low Potassium: fatigued, depressed, low blood sugar, thyroid problems
 High Potassium: active, good stamina if ratio with sodium is normal. If the ratio with sodium is low, a high potassium indicates frustration, hostility, resentment, a seemingly no-win situation.

IRON (Fe)

Key Words: strength, rigid, brittle, a masculine mineral, 'the iron man'
 Low Iron: tired, weak, wishy-washy, 'anemic'
 High Iron: rigid, angry, aggressive, inflammatory, devious, corrupt

COPPER (Cu)

Key Words: emotional, intuitive, creative, a flirty feminine mineral
 Low Copper: fast oxidizers are out of touch with the emotions, or less emotional
 High Copper: childlike, hypersensitive, artistic, effeminate, sentimental, childish, fearful, 'spacey', depressed, moody, phobias, panic attacks, violent behavior, and when extreme causes hallucinations, schizophrenia and psychosis

ZINC (Zn)

Key Words: steadiness, balance, gentle strength, a more advanced 'male' element
 Low Zinc: impotence, emotional instability, developmental and learning problems, copper-toxic, and with heavy metal toxicity
 High Zinc: very rare today. Dr. Eck said they may be martyrs, but I haven't seen this.

MANGANESE**(Mn)**

Key Words: blood sugar regulator, 'female' element
 Low Manganese: fatigued, unstable blood sugar, possibly less maternal
 High Manganese: detached, unemotional; when extreme may be rigid, schizophrenic, angry and possibly violent

CHROMIUM**(Cr)**

Key Words: energy, blood sugar stabilizer
 Low Chromium: moody, tired, craving sweets
 High Chromium: very rare today

**SELENIUM (Se)
& SILICON (Si)**

Key Words: flexible, smooth, spiritually-oriented
 Low Selenium: irritable, crabby, lack of advanced brain development
 High Selenium: rare today. It may be toxic in high doses.

TOXIC METALS**LEAD (Pb)**

Key Words: sluggish, dull, 'dense', can be violent
 High Lead: retarded, anemic, tremors, neuromuscular diseases, birth defects, violent, lowered intelligence

MERCURY**(Hg)**

Key Words: 'kooky', odd, an old female element, the 'mad hatters' of *Alice in Wonderland*
 High Mercury: emotional, crazy, unstable, fearful, hyperactive, hidden copper, ADD, autistic, hidden agendas, devious

CADMIUM**(Cd)**

Key Words: pseudo-masculine, tough, hardened, macho, 'tough cookie', a lower 'male' element, violence, possibly
 High Cadmium: rigid and false strength, ADD, hardened personality, emotionally shut down, insecure, hiding from fear; when extreme violent.

ALUMINUM**(Al)**

Key Words: 'soft in the head', a 'lightweight' toxic metal,
 High Aluminum: forgetful, childish behavior, all dementias, cognitive difficulties

43.

PERSONALITY ASPECTS OF THE OXIDATION TYPES, MAJOR RATIOS AND OTHER PATTERNS

Marian had suffered for years with anger, anxiety, brain fog, confusion, depression, irritability, mind racing, a poor memory and trouble concentrating. She wrote: "I only slept with the use of sleep medication. I couldn't safely drive the car, and it took hours just to balance a checkbook. The worst symptom was panic attacks. They appeared when I was stressed, or they might simply arise "out of nowhere". Over the last four years I have been admitted to the ER numerous times with extremely high blood pressure, shortness of breath, chest tightness and pain. In the worst case, a panic attack was accompanied by uncontrolled shaking. I was repeatedly checked for a heart attack and stroke. They performed: EKGs, MRIs, X-rays, CAT scans and all of the other normal tests. Nothing was ever found, and I always felt like the "boy who cried wolf". These situations were extremely frightening and they caused a profound sense of helplessness and embarrassment. I always knew that the medical professionals would access my record and think, "Oh God, here she comes again."

After only 4 months on a development program, my copper level, which was "off the page" at 27 mg%, has returned to normal! I haven't had ANY panic attacks in the last 2 months! Also, I no longer suffer from most of the symptoms listed above. You can't imagine the mental, emotional and physical relief that I feel. I am finally able to understand the causes of my problems. I have made lifestyle changes, improved my diet, and continue to take the recommended supplements. I feel great, have lots of energy and am very happy."

This chapter discusses the fascinating area of psychological and some spiritual aspects of the major ratios and patterns on a hair analysis. It can quickly give a practitioner a tremendous amount of personality-related information with which to further assist a client. This chapter also discusses interesting copper and four lows personality types that one sees in clinical practice.

THE OXIDATION TYPES AND PERSONALITY - FAST OXIDATION

The following are theoretical and general psychological aspects of the oxidation types. Although a hair mineral test may indicate fast oxidation or perhaps mild slow oxidation, the real oxidation rate may be hidden on the first few tests by other factors such as toxic metals that will skew the readings to some degree. Many people are what is called a *slow oxidizer on crutches*. This means that the fast or slow oxidizer pattern will shift on future hair tests when toxic metals and other imbalances that can act as crutches, are removed.

Healthy or mild fast oxidation. This is rare today among adults. These people tend to be forward-looking, positive, and energetic. They tend to live in the present, though they may think somewhat in the future as they are active, outgoing, and extroverted. Fast oxidizers often enjoy sports, social events, sex, thrills and excitement. They tend to make good salesmen, aggressive business people and politicians. They can be showy and superficial, however, and are often somewhat less mature than slow oxidizers. They often have few health concerns.

Starters. Dr. Eck felt that fast oxidizers are often ‘starters’, while slow oxidizers are better at finishing a job. Businesses, he felt, often do well with a fast oxidizer in charge and slow oxidizer workers to carry out orders and finish what the fast oxidizer starts.

Fast oxidizer children. Children in a healthy fast oxidation state are happy, outgoing and have lots of energy. Today this may be labeled as hyperactive or ADD, when it is just a reflection of their higher energy level and more physical and active body chemistries.

More yang and vatta-pitta. Fast oxidation is more yang in Chinese medical terms and more associated with the vatta-pitta personality in Ayurvedic medicine.

Unhealthy Patterns. As the oxidation rate becomes too fast or the sodium/potassium ratio decreases, symptoms may include irritability, anxiety, nervousness, fearfulness, anger expressed, aggressiveness and belligerence. Very fast oxidizers are also often high-strung, or ‘uptight’ and literally have extreme muscle tightness and muscle cramps. The faster the oxidation rate, generally, the more extreme the symptoms associated with it.

Extreme fast oxidizers have trouble slowing down and many times avoid their shortcomings and anxieties by running away from them. They can become anxiety-prone stress-seekers, neurotic, emotional and very difficult to live with for these reasons. As the pattern becomes more extreme, they may experience anxiety attacks, paranoia, and, when they feel threatened, are prone to extreme aggressive behavior like a cornered animal.

Unhealthy fast oxidizing children. These children are extremely stressed. They can fly off into crying and temper tantrums and most have difficulty focusing, concentrating and resting. They can be angry and aggressive with ADD or ADHD, while some are autistic. Many children become this way to a slight degree when they are overtired, such as at the end of a long day without a nap. The parents may say the child is ‘wound up’, meaning wound up in faster oxidation. A fast oxidizer’s response to stress and fatigue is to speed up even more.

If a child’s oxidation rate is too fast for an extended period, the child basically becomes stuck in the pattern because the sedative minerals such as calcium, magnesium and zinc become depleted and the child cannot return to a more balanced oxidation state on his own. In autistic children, the tendency for anxiety and irritability appears to be turned inward, and the child creates his own, more stable inner world away from the outer world. Fast oxidation is also common in some children with learning disorders. Usually, the child is very bright. The problem is concentrating or boredom in school.

Maturity and self-involvement. Fast oxidizers are more involved with themselves, as a rule, than with others. They are more oriented toward the world and less self-aware or aware of the feelings of others. This trait often causes conflicts in marriages, at work and elsewhere.

Addiction in fast oxidizers. Addiction occurs often, and may include alcohol and sexual addictions. Alcohol acts as a fuel and a sedative, and supplies acetates and other chemicals their bodies crave. Sex calms down some fast oxidizers by temporarily reducing the oxidation rate. As they begin to burn out, some fast oxidizers are attracted to stimulants such as caffeine, sugar or cocaine as ways to maintain themselves in their former high-energy pattern.

Vampirism. Fast oxidizers, particularly older children and adults, may become adept at stealing energy from others. This may sound odd, but is a real phenomenon that can keep some people in fast oxidation. The ability is learned early in childhood in many instances. The basic way it is done is to upset others. This can be done with intimidation or threats, odd behavior such as moodiness, lying, or even too much praise and flattery. When the other is upset, he or she gives up a certain energy to the fast oxidizer. This subject was discussed in the book and movie, *The Celestine Prophecy*, and is discussed at length by Mr. Roy Masters of the Foundation of Human Understanding. It is also discussed briefly in Chapter 22. Those who live with or work with fast oxidizers often do not understand what motivates the fast oxidizer to behave so emotionally, not realizing that in so doing, the fast oxidizer may actually steal energy from those around him or her. Development can make these people healthier, and may even help undo the vampire tendency in a few cases.

Bullies. Fast oxidizers are more often bullies and intimidators, while slow oxidizers are more often the victims of bullying.

SLOW OXIDATION AND PERSONALITY

Healthy slow oxidation. A mildly slow oxidation rate is associated with a quieter, gentler, more introverted and less energetic personality. Mild slow oxidizers are often pleasant to be around and can function quite well in society and at home. They also tend to be somewhat more emotionally mature and spiritually aware than fast oxidizers. They make good scientists, accountants, doctors, lawyers, housewives and can be good at any task that requires patience, tedium or plodding for sustained periods of time. Dr. Eck said they make better long distance runners, but not sprinters, who are often faster oxidizers.

Unhealthy slow oxidizers are those in whom either the oxidation rate is very slow, other ratios are imbalanced, or toxic metals or other nutrient deficiencies are pronounced. Very slow oxidizers are definitely in the exhaustion stage of stress and many are obviously or not so obviously ‘burned out’. Their energy level is much lower, even if they run around a lot. This impacts their personality in subtle ways. They are often spacey, copper toxic, ‘not all there’ and can be rather apathetic, out of touch, depressed and even despairing and suicidal as the oxidation rate slows further. Mentally, they are not as sharp and may become confused in their thinking.

Slow oxidizers can become severely depressed and negative. This is very common today. It may contribute to a common negative view of humanity in many of them, that “people are the problem on planet earth”. This is a refrain heard often among environmentalists and socialists, for example. Negativity and depression can give rise to unhealthy habits such as drug or alcohol use, but it is more to get rid of depression than to just get a thrill, as fast oxidizers may use them for. Some become very emotional due to copper imbalance, while others quietly endure, like battered women. They may lash out suddenly when the pressure is too much, like a cornered animal that prefers not to fight as its energy level is too low.

Excessive copper makes many slow oxidizers extremely analytical. Some become scholars and perpetual students, but they are often ‘up in the head’. Others are creative and artistic, but still often quite depressed underneath.

Very slow oxidation in teens. Teenagers are often exhausted from a lack of sleep, atrocious diets and quite a lot of stress from school pressures and other forces acting upon them. The level of suicide, drug use, sexual experimentation and other problems of teens is certainly

related, at least in part, to their imbalanced body chemistry that makes them feel odd, tired, foggy headed and depressed in many instances.

Anxiety among slow oxidizers. Slow oxidizers are often anxious, nervous and even paranoid for entirely different reasons than fast oxidizers. Slow oxidizers become anxious due to a low level of bioavailable sedative elements calcium and magnesium. Many benefit greatly from supplementation with calcium and magnesium. Also, they lack the energy to function well and this can be anxiety-producing. It also lends itself to feelings of inadequacy and low self-esteem at times. Their foggy or unclear thinking ability may also cause anxiety, at times.

Yin attitudes. Slow oxidizers are more likely to hold yin attitudes, which may include:

- *Victim thinking.* Examples include feeling sorry for oneself, blaming others for one's problems and an unwillingness to forgive others completely and move on.
- *Often weak on principles and may back down in the face of tensions, pressures and attack.*
- *Not good at confronting, in general, preferring to keep the peace than discuss openly.*
- *Greater sentimentality, weepiness, and often some lack of mental clarity or brain fog.*

Adrenal burnout. This is common among slow oxidizers. It is a more severe degree of adrenal weakness that is associated with more fatigue, depression, anxiety and other problems.

Copper Toxicity. Copper tends to accumulate in a bioavailable form in the brains and other organs of most slow oxidizers. It tends to accentuate all the emotions and cause brain fog, spaciness, anxiety, depression, panic attacks and other emotional difficulties. Copper is discussed in more detail in Chapter 42.

Control Tendencies. Slow oxidizers often feel out of control because their energy is low and their coping ability diminished. Here are four mechanisms they use to compensate:

- *Dr. Eck felt that slow oxidizers try to control others or situations covertly or secretly.* They may use more deception and lying, for example, than fast oxidizers who are often more direct in their approach to life.
- *They may attempt to control life by escaping into their intellect with too much analysis or with vivid imaginations.*
- *They may become 'spacey' or foggy in the head in order to protect themselves from reality.*
- *They often accumulate calcium and form a calcium shell pattern to protect themselves.* This is like living behind a concrete wall.

Lack of Grounding. Some slow oxidizers are very ungrounded and may literally feel like they are floating through life rather than knowing who they are and where they are going. Grounding is important for them for this reason, and for their mental development as well. Grounding is literally their foundation for future development.

Copper and spirituality. Many high-copper people become interested in spirituality. However, much of this interest starts with their lack of comfort and control in the world. Many are drawn to spiritual books and compact disc programs that discuss how to regain or maintain control in some way. If this fails, they will often abandon one teacher and try a different one. While this experimenting is difficult, at least they are learning about various spiritual teachings, something most fast oxidizers are less able or willing to do. Becoming more spiritually oriented is a great benefit of slow oxidation for millions of people. One becomes more reflective and the quality of thought is less self-centered, often, than that of fast oxidizers.

Also, it is far easier for many slow oxidizers to sit and pray, or sit and meditate than it is for fast oxidizers. This may sound silly, but a tired body makes sitting quietly much easier than if one is full of energy and surging hormones. Women generally embody slow oxidizer thinking styles more than men, perhaps because women's bodies have much more copper than do men's bodies. The thinking is more about others and about society, and somewhat less about oneself.

Rigidity and defensiveness. This may occur in very slow oxidizers due to:

- *High tissue calcium and magnesium levels.*
- *Low energy makes adaptation and change more difficult for some.*
- *Fear levels are much higher in some cases.* This can cause a kind of inertia in the personality that manifests as rigidity and defensiveness.
- *Poorer quality or slower thought processes may also appear as rigidity and defensiveness.*

Very extreme slow oxidation. When the oxidation rate becomes very sluggish, a person may become sad, weepy, depressed and even despairing. Suicidal thoughts may occur due to very low energy levels and the buildup of copper and other toxic metals in the brain. This pattern is associated with total exhaustion, apathy and lack of motivation. Just getting up in the morning becomes a chore and life is not enjoyable at all. This situation is quite common, especially among groups such as teenage girls and young women. It helps account for higher suicide rates and self-destructive or odd behaviors.

Political and societal ramifications. Slow oxidizers are less able or inclined to want to take care of themselves. They often feel like victims and express this view politically as a leaning toward socialism and the idea of the government as the nanny and caretaker. They are therefore attracted to candidates that promise cradle-to-grave welfare. In my view, this is what ruins many societies, as the government also takes the people's wealth and power, and becomes thoroughly corrupt in the process of providing many so-called benefits.

Addiction in slow oxidizers. Slow oxidizers are often tempted by stimulants because they are tired and depressed. They may crave and use sugar, caffeine, chocolate, coffee or strong teas like mate, and perhaps cocaine, ecstasy and methamphetamines to provide extra energy. However, some are also anxious and may gravitate to marijuana, for example, to calm down and forget how badly they often feel inside.

MIXED OXIDATION AND PERSONALITY

Personality patterns for mixed oxidizers are not as reliable because mixed oxidation is an unstable and usually a very temporary mineral pattern. Traits may be a mixture of fast and slow oxidation. One should assess whether the oxidation rate is closer to fast oxidation, called a *fast mixed oxidizer*, or closer to slow oxidation, which is called a *slow mixed oxidizer*. Also, look to other ratios and patterns to learn more about the personality in mixed oxidation situations.

ADRENAL BURNOUT PATTERNS

To understand mental and emotional imbalances, it can be very helpful to quickly identify hair mineral patterns that tend to indicate adrenal exhaustion or burnout. These tend to be associated with feelings of fatigue, and often with apathy, low libido, and depression. Other possible symptoms include despair, suicidal tendencies, anxiety and bipolar tendencies in some

cases. The likelihood of symptoms is greater if several of the following burnout patterns are present on one hair chart. I sometimes call the situation *double burnout* if two are present, or *triple burnout* if three are present. The patterns are:

- | | |
|------------------------------------|---|
| 1. Four lows pattern. | 6. Very slow oxidation rate. |
| 2. Sodium/potassium ratio below 2. | 7. Calcium level above 100 mg%. |
| 3. Sodium below 3 mg%. | 8. Double low ratio pattern. |
| 4. Potassium level below 4 mg% | 9. Step up pattern. |
| 5. Phosphorus level below 12 mg%. | 10. Very unbalanced Ca/Mg ratio (high or low) |

THE MAJOR RATIOS AND PERSONALITY - THE SODIUM/POTASSIUM RATIO

The sodium/potassium ratio tells one about acute versus chronic stress in a person's life, acute or chronic emotions, and perhaps the direction of change toward faster or slower oxidation.

A high sodium/potassium ratio = positivity, moving ahead, and when very high, acute stress and anger or other acute emotions. A ratio above about 2.5 indicates:

- *A person who is responding to life with an active and more positive approach.*
- *This can indicate a person who is moving toward a happier life and faster oxidation because the sodium/potassium ratio may be a directional change indicator.*
- *A ratio above 6 or so usually indicates acute stress and an inflammatory situation in the body and often the mind. Emotions associated with this are anger or rage in some cases.*
- *It is a secondary indicator for **sympathetic dominance**. This is a person who pushes himself and tends to overuse the fight-or-flight nervous system. One with this pattern is often high-strung, irritable or anxious, at times.*
- *May be part of a step down or double high ratio pattern. These are associated with determination and 'digging in one's heels'.*
- *May be part of a hill pattern. This is a positive change and celebration indicator.*

A low sodium/potassium ratio = chronic emotions of frustration, resentment and hostility, reduced awareness, lowered vitality, and a degree of giving up. A sodium/potassium ratio less than about 2:1 is associated with:

- *'Beating one's head against the wall instead of walking through the door'.*
- *Reduced awareness and feeling emotionally stuck to some degree.*
- *Lowered vitality. This can affect a person's mental as well as physical health.*
- *It may be part of the bowl, step up and double low ratio patterns. In all these cases, the person is even more mentally or emotionally stuck.*

Buried traumas. A sodium/potassium ratio less than 1 may be associated with quite severe buried emotional traumas. This is more likely if the ratio remains very low on repeated hair tests during a development program. Interestingly, those with a sodium/potassium ratio less than 1 may be "happier" than those with a mildly low ratio. As the ratio improves, many of them become more aware of their buried traumas and may begin to feel or express more of their resentment and hostile feelings. An unwillingness or inability to face a buried trauma can be one

reason that the ratio does not improve, as facing buried traumas can be frightening. In a few cases, clients quit the development program when the feelings begin to emerge, rather than face them. This can be avoided, at times, by warning clients with a sodium/potassium ratio less than about 1 that negative emotions or memories may arise as the ratio corrects. The feelings are not to be feared and will pass quickly in most cases.

THE CALCIUM/MAGNESIUM RATIO

This ratio can help assess defensiveness, especially in regard to lifestyle imbalances. **A calcium/magnesium ratio above 13.5 = lifestyle defensiveness:**

- *Defensiveness*, especially in regard to either a lifestyle factor or an attitude that is not working well and needs to change. This is also a *stalled transition pattern*. The lifestyle factor may be a job or maybe a relationship. The attitude is often anger, but may be anything.
- *Pretense or pretending everything is fine when it is not.*
- Part of a *double high ratio pattern*. This pattern tends to reinforce everything written about a high sodium/potassium ratio above – namely acute stress and anger.
- *As with all patterns, it is more likely or important when extreme or if it persists on several hair tests while one is following a development program.*
- *Mainly important on an initial test.* If the pattern appears only on a retest, it is usually not spiritual defensiveness. Usually, the body is simply eliminating some bioavailable or ‘metastatic’ calcium. This can push up the calcium level and skew the ratio temporarily.
- *May be part of a bowl pattern where a person feels very stuck.*
- *The spiritual defensiveness pattern was not part of Dr. Eck’s original work.*

A calcium/magnesium ratio below about 5 = openness, perhaps. However, this is only the case when the sodium/potassium ratio is greater than about 2.5.

DOUBLE RATIO PATTERNS

Double high ratio pattern (high Na/K and high Ca/Mg) = **more acute stress and anger:**

- *A determined effort pattern*, often with some rigidity or defensiveness as well.
- *It may be part of a step down pattern.* This is mainly a more extreme efforting or determination pattern in which a person is attempting to move ahead slowly.
- *Visually, it appears like a person is ‘up against a wall’ behind him and is slowly moving away from it.* Compare this to the step up pattern below.

Double low ratio pattern or double inversion (low Na/K and low Ca/Mg) = **very chronic emotions and exhaustion.** This pattern:

- *Accentuates low sodium/potassium ratio qualities of frustration, resentment and hostility.*
- *Loss of awareness, lowered vitality and poorer overall health.*
- *This is a stalled transition pattern.*
- *It can indicate one is ‘beating one’s head against the wall even harder’.*

THE CALCIUM/POTASSIUM RATIO AND THE SODIUM/MAGNESIUM RATIO

These ratios are not used as much for personality interpretation of a hair analysis. Together, however, they are used as the components of the oxidation rate discussed above. However, an interesting aspect of these ratios is they may indicate voluntary versus involuntary stress reactions and earlier versus later types of stress responses:

The sodium/magnesium ratio = an adrenal response to stress, often involuntary and usually an earlier stress response indicator. This is an important *sympathetic nervous system barometer*. A high ratio is a more sympathetic state with symptoms such as acute stress, anger, volatility and irritability. A low ratio signifies more of an exhaustion situation. A rise in sodium in response to stress is the very earliest indicator of a stress response and is often involuntary.

The calcium/potassium ratio = a thyroid response, often more voluntary and often a later stage stress indicator. This ratio has more to do with voluntary *efforting* in various directions. This ratio is more related to the thyroid gland, which has more to do with voluntary effort in response to stress. The thyroid also usually follows the adrenals in terms of the timing of the stress response. Potassium levels tend to follow sodium levels during the stress response. Both ratios are also part of the step up and step down patterns described later in this chapter.

PERSONALITY AND THE MAJOR MINERAL RATIOS AND PATTERNS

FAST OXIDATION

Key words:	Fun, outgoing, fight-or-flight mode
Mild: (Ca/K 0.2-4)	Extroverted, outgoing, higher energy, emotionally expressive, tends to control overtly.
Extreme: (Ca/K below 0.2)	Anxious, irritable, thinking in the future, aggressive, paranoid, moody, vampire tendency, prone to energy swings, emotional, running away.

SLOW OXIDATION

Key words:	Introverted, quiet, reserved, tired, apathetic and perhaps depressed
Mild: (Ca/K 4-50)	Quiet, introverted, more plodding and methodical in some cases, possibly some fatigue.
Extreme: (Ca/K over 50)	Tired, apathetic, possible calcium shell or sympathetic dominance , withdrawn, depressed, thinking in the past, fearful, exhaustion stage of stress, suppressed, repressed, despair, may tend to control covertly.

SODIUM/POTASSIUM RATIO OR Na/K

Key words:	Acute versus chronic emotions, vitality, a directional change indicator
High: (above 6)	Angry, irritable, acute stress, inflamed, a secondary sympathetic dominance indicator.
Mildly low: (2-2.4)	Fatigued and perhaps somewhat frustrated, depressed, hostile, resentful, with chronic stress.
Low (below 2)	Frustrated, burned out, resentful, hostile, unable to let go, in a double-bind, a distorted sense of reality, perhaps a buried emotional trauma.

CALCIUM/MAGNESIUM RATIO OR Ca/Mg

Key words:	Lifestyle or attitude defensiveness.
Very high: (over 13.5)	Spiritual defensiveness. A need for change in an attitude such as anger or in a lifestyle aspect such as a job, relationship, location or other.
High: (9.5-13.4)	Exceeding one's glucose tolerance, meaning overeating on carbohydrate foods such as sweets and starches.
Low: (less than 5)	Blood sugar abnormality, and perhaps emotional imbalance as well.

OTHER MINERAL PATTERNS AND PERSONALITY

Sympathetic dominance (low potassium) = **pushing oneself hard**. This almost always occurs in slow oxidizers. It may indicate:

- *Efforting, action-oriented, go-go people, or pushing oneself*, mentally or physically.
- *Chronic stress, usually due to trying very hard.*
- *Overuse of the sympathetic or fight-or-flight nervous system.*
- *A stalled transition pattern from fast to slow oxidation in which the person acts as though one is in fast oxidation when, in fact, the body has moved into a slow oxidation state.*
- *Usually found in intelligent, somewhat perfectionistic and often spiritually-oriented people.*
- *May occur in those who are trying to prove themselves or trying to fit into society, perhaps, when it is not appropriate for their energy level or some other reason.*
- *Living as though a tiger is continually chasing oneself.*
- *Perhaps somewhat out of touch with reality and lowered awareness to some degree.*
- *Those who do not relax enough.*
- **May combine with:** *a low sodium/potassium ratio indicating severe burnout, but still pushing oneself; combined with a calcium shell indicates trying much too hard and in withdrawal; combined with a high calcium/magnesium ratio or spiritual defensiveness pattern indicates one who is stressed from within and without.*

Four high or three highs = stilted, guarded, a delicate chemistry or walking on stilts:

- *A slow oxidizer under loads of stress.* The underlying situation is slow oxidation. This is the most important fact about this pattern, both physically and in terms of personality.
- *Always some toxic metal stress. and perhaps lifestyle stress and pushing oneself, as well.*
- *Fast, slow or mixed oxidation may be present, usually with mixed symptoms of both oxidation types.* There may be a combination of anxiety and depression at times, or a bipolar disorder situation, or others related to both oxidation types.
- *A stalled transition pattern from fast to slow oxidation.* It often resolves within a few months to slow oxidation. However, in some cases, three or four highs persists for years.
- *Stilted or guarded.* A few four highs individuals have a delicately balanced or precarious state of chemistry. An analogy is a person forced to walk on stilts. Indeed, one with the four highs pattern can be stilted, meaning guarded and not totally forthcoming. This may be a personality tendency or just a response to an unstable metabolic pattern. The person will

protect himself to avoid swings in the oxidation rate, as this can cause unpleasant alternating feelings between depression (slow oxidation) and anxiety (faster oxidation).

- *Somewhat grounded, unlike sympathetic dominance and perhaps other patterns.*
- *Some tendency to 'crash land' into slow oxidation as one drops out of four highs or three highs. Also some tendency to move into faster oxidation if the program is too intense. We therefore handle this pattern gently to hopefully cause a 'safe landing' into slow oxidation.*

Bowl Pattern (high Ca/Mg and a low Na/K) = **feeling stuck, in a double bind:**

- *Feeling stuck or unable to move forward. A feeling of the world closing in, with few options.*
- *Frustrated and defensive together. We can understand this pattern as the combination of a low sodium/potassium ratio (frustration, resentment and hostility) combined with an elevated calcium/magnesium ratio (defensiveness). When a person defends his or her frustration or resentment, he or she is less able to move ahead in life.*
- *The shape of this pattern on an ARL hair chart resembles one who cannot find his way out of a well or bowl. The steeper a bowl, the more extreme the feeling of being stuck in some way.*
- *A partial collapse into four lows. A bowl pattern even looks like a collapse in the middle.*
- *Can be further classified as a fast bowl or a slow bowl depending on the oxidation type, and a shallow bowl or a deep bowl. A slow bowl and/or a deeper bowl are more extreme.*
- *This pattern is more recent and was not part of Dr. Eck's original research.*

Hill pattern (low Ca/Mg and a high Na/K) = **celebration or positive change:**

- *A celebration, positive movement or change taking place at deep levels of a person's being.*
- *It may also be an ending of a negative pattern of movement or living in some way or other.*
- *A retest pattern only. Not reliable on initial hair tests unless a person has been on a healing regimen in some way.*
- *Visually, an opening, or an expansion of consciousness, as compared with a bowl, which looks closed in on the calibrated hair chart from ARL.*
- *The pattern combines a low calcium/magnesium ratio (less defensiveness) with an elevated sodium/potassium ratio (forward-looking, enhancing the oxidation rate). This pattern, like many others, may not be visible and may not be as reliable if the first four macromineral readings are all elevated. In this case, one must calculate the ratios to assess the pattern.*
- *This pattern was not part of Dr. Eck's original research.*

Step up (fast oxidation, low Ca/Mg, low Na/K) = **pushing hard and getting nowhere:**

- *A fast oxidizer personality in all cases.*
- *Very stuck and not wanting to change to fix the problem.*
- *Digging in one's heels in a resentful, frustrated, hostile or angry way.*
- *Resentment and hostility can lead to severe illness or death if the pattern does not change.*
- *Visually, it appears like a wall directly in front of the person (to the right on the hair chart).*
- *If all four numbers are high, the pattern may not be present.*
- *This pattern may not have been part of Dr. Eck's original research.*

Step down (slow oxidation, high Ca/Mg, high Na/K) = **digging in one's heels**:

- *Always a slow oxidizer personality type, often with sympathetic dominance present as well.*
- *Some defensiveness, stubbornness or 'digging in one's heels'.*
- *A determined effort with a person moving forward in spite of obstacles.*
- *Fatigue or exhaustion combined with determination to succeed. The steeper the step down pattern, the more extreme the emotional tendencies associated with it.*
- *If all four macrominerals are elevated, the pattern may not be present.*
- *This pattern was not part of Dr. Eck's original research.*

Aggressiveness pattern (low calcium):

- *Often an extremely fast oxidizer with a calcium level less than about 14 mg%.*
- *More pronounced when magnesium and zinc are very low.*
- *Seen in children with ADHD, autism & other behavior, learning & developmental problems.*
- *Also possible in some fast oxidizing adults, usually men.*

Passive-aggressive pattern (a calcium shell, along with four highs):

- *A combination of a calcium shell (repressed or suppressed emotions) and a four highs pattern (extreme stress). This may cause occasional emotional outbursts.*
- *The pattern is more pronounced if the sodium /potassium ratio is low. This indicates more frustration, resentment and/or hostility.*
- *A type of bipolar tendency, and more commonly seen in women, so far.*
- *A newer pattern and not part of Dr. Eck's original work.*

Workaholic pattern (three highs or four highs, and a high sodium/potassium ratio):

- *A slow oxidizer underneath (tired), very stressed (three or four highs), yet pushing hard and somewhat angry and aggressive (a high sodium/potassium ratio).*
- *Perhaps more common in middle-aged women, but requires more research.*
- *A recently discovered pattern that was not part of Dr. Eck's original work.*

Overwhelming stress (three lows) = **collapsing into four lows**:

- *Three of the four macrominerals are low. Four variants are possible, depending upon which macromineral is high.*
- *Although it is a chronic stress pattern, the stress is somewhat more acute when the sodium is elevated, and somewhat more chronic when potassium is high.*
- *Stress is usually in part lifestyle-related, and not simply due to biochemical imbalances.*
- *A newer pattern and not part of Dr. Eck's original work.*

Stress from within and without. (Ca/Mg above 13.5 and potassium of 4 mg% or less) = extreme stress. This pattern combines spiritual defensiveness pattern(stress from without) and sympathetic dominance (stress from within). It is another high stress pattern and newer, so it was not part of Dr. Eck's original work.

Trying hard to stay afloat. (elevated Ca/Mg and Na/K ratios, and potassium of 4 mg% or less). This pattern combines a double high ratio pattern with sympathetic dominance or pushing oneself hard. It is a more chronic stress pattern in which one is pushing hard to avoid going into four lows. It is a newer stress pattern that was not part of Dr. Eck's original work.

Trying too hard (calcium above 170 mg% and potassium of 4 mg% or less). This pattern combines a calcium shell and sympathetic dominance. It indicates a person who is pushing so hard that one has gone into psychological withdrawal, often because the person is quite spiritually-minded and trying too hard to fit in with the crowd. It is another newer pattern.

COMBINATIONS OF PATTERNS

Many hair tests have more than one of the above patterns. Sometimes they reinforce each other, such as having two depression patterns or three burnout patterns at once. At other times, they may just show how complex we are mentally and psychologically. These combinations make interpretation on an emotional level quite complex at times. Describing all the more complex combinations would require a much more lengthy book.

Retracing brings up other patterns. As one retraces the past, often many personality patterns are revealed. This is disturbing to some people, though it is nothing to worry about. Most pass quickly. Some may also represent physical, rather than emotional retracing.

When retracing an emotional imbalance, do not assume the pattern relates to a present-time situation. For example, if an anger or resentment pattern surfaces on a retest hair analysis, one may indeed become aware of these feelings. However, the feelings often are from a time in the past, and not related to a present situation. Focusing on the anger and projecting it will only slow one's progress. The pattern will often resolve on its own if one just follows the development program.

UNDERSTANDING THE PAST AND PREDICTING THE FUTURE

Many times, development can help explain how a person's past behavior or lifestyle has resulted in present behavioral problems. At times, a hair analysis can also predict with fair accuracy future emotional and behavioral problems. Here are a few examples.

The past. Let us say a practitioner is interested in why a client developed depression. If the oxidation rate is very slow, the practitioner can guess with fair accuracy that the client has been tired for years, which can lead to depression. If, on the other hand, a spiritual defensive pattern is present, the practitioner can guess with fair accuracy that the person has been involved in perhaps a job, a relationship or holding on to an attitude that is not working well for the person. If the person has a calcium shell the practitioner can guess that this is a more chronic case of withdrawal from the world for some reason.

Predicting the future. If a hair analysis were performed on a prisoner who is to be released and it revealed high levels of lead, mercury, copper or cadmium, this would not be a good prognostic indicator. If, however, it showed a mild slow oxidation pattern with no toxic metals, it would be a far more positive indicator for a crime-free future. I believe that some day statistical analysis will support the validity of this type of testing.

Similarly, if a person was about to be released from a mental institution after being admitted for depression, and a hair analysis revealed a slow oxidation rate with extremely high copper, this would be a bad prognostic sign. It would be far better if the test indicated a mild slow oxidation pattern, a normal copper level and a normal or even elevated sodium/potassium ratio. If the person showed a *step down* pattern, this often means the person has more drive and determination than others, and would be a good indicator for future success. Other examples of how a hair analysis might predict behavioral health outcomes include:

- *Four highs pattern* may indicate a lot of stress, stubbornness and some underlying instability.
- *A four lows pattern* may indicate a negative attitude, cynicism and perhaps a tendency to be stuck or to give up. A positive quality, however, is such a person may be stoic and tend to keep on going, even to one's detriment in terms of health.
- *Iron overload, either overt or hidden.* This may indicate a lot of anger and rage.
- *Elevated aluminum.* This is associated with impaired memory and cognition.
- *Elevated calcium/magnesium ratio.* This may indicate some defensiveness, or perhaps just indicates too many carbohydrates in the diet.
- *A low sodium/potassium ratio.* This tends to indicate chronic stress, fatigue, and often some negative emotions such as frustration, resentment and hostility.
- *A bowl* might predict a person will have difficulty due to feelings of having no options.
- *A step up pattern* tends to indicate a stubborn ego and perhaps a serious health condition.
- *A step down pattern* tends to predict a happier future because the person is tired, but willing to stubbornly move ahead with plans and activities.
- *A calcium shell* is hard to read. On one hand, it protects a sensitive person from stress and excessive emotions. However, it also indicates very low energy, depression, psychological withdrawal and often one who is not clearly in touch with reality.

Hair analysis patterns of marital partners. At first, many couples demonstrate very different hair analysis patterns. Over time, however, they often begin to converge. This makes sense, as they begin to eat alike and often to think alike as well.

If two people are contemplating marriage, having similar hair analysis metabolic types is often helpful. If the patterns are too different, one is probably compensating or adapting to the needs or wants of the other. For example, the fast oxidizer partner may supply the excitement, drive and ambition while the other provides stability and grounding. This may work out, but will often require more effort to resolve differences in temperament.

Coming together is a stress, even if it is a positive one. On one occasion, two of my single clients met and eventually married. I checked their hair tests as the friendship progressed. When they married and started living together, both developed a hill pattern for about six months. Then it went away. The marriage went well and the hill pattern may reflect this.

COPPER PERSONALITY TYPES. Copper is a very important element at this time in history. Most people have a copper imbalance to some degree. In addition to its obvious effects on the body and the brain, it takes part in certain common personality patterns. Four of the most common ones are **1) Spacey and emotional, 2) collapsed, depressed and very angry, 3) sympathetic dominant overachievers, & 4) severely emotionally and physically withdrawn:**

1. SPACEY AND EMOTIONAL. This is a developmental stage of life that often occurs during the teens and college years, especially in young women.

Whom: Mainly young women between the ages of about 12 and 35, and in some young men of the ages mentioned above. After 35, they usually develop one of the other copper personalities if they have not dealt with or integrated their personalities well.

Personality: The young women and men are sweet, kind and gentle, as a rule, though they can be quite angry underneath. Some are in unhappy relationships, and none are too aware, centered or grounded. They are not fully mature, so this is a developmental stage of growth, particularly for women and some young men as well.

Copper effects: These are to 1) enhance the general emotional nature of the person and 2) cause a slight detachment from reality. This may be considered a mild tuning disorder or Level 3 mental disorder.

Symptoms: These often include menstrual difficulties in women, headaches, acne, rashes, blotchy skin when they tan, constipation, fatigue, depression, and a certain floaty, fluffy or spacey detachment from reality. If stress builds up too much, they may have suicidal thoughts, though they are not often as severe as the more withdrawn pattern below.

What they need and how to help them: Development is most helpful, but will not correct this imbalance completely. The person must also essentially *grow* out of the pattern, usually in the late twenties or thirties. Otherwise they become quite ill and depressed.

Drug use: Drugs are not a common part of this pattern because alcohol and drugs often make them feel even worse. Some cigarette and mild alcohol use are common.

2. COLLAPSED, DEPRESSED AND VERY ANGRY. This is often a continuation of the first pattern above that occurs as a person ages, if one does not mature sufficiently.

Whom: Women and some men over the age of about 25-35. A lot of stress is a factor.

Personality: Anger predominates in this pattern. It comes out in their language, how they treat children, and a curious selfish attitude that is really a compensation for feeling very depressed. All feel like victims to some degree. While all of us have had our traumas and disappointments, these people are unable to move past them for various reasons. The combination of a victim mentality plus emotionalism usually cripples a person's emotional and spiritual development, unless they can be helped to move on and forgive everyone quickly.

Copper effects: The copper 1) enhances anger, 2) causes a type of deep depression in many of them and 3) impairs physical functioning to some degree.

Symptoms: Mostly they are tired and depressed. Many keep pushing, however, because that is how they are accustomed to functioning.

What they need and how to help them: They need a thorough healing program to help them move out of depression and self-pity. Attention to lifestyle and the Roy Masters meditation can help, but they must also want to change badly enough to let go of old attitudes. The key is giving up the victim mentality and being truly more spiritually oriented. This means forgiving everyone, especially parents. For women, it often means forgiving fathers and male partners.

Drug use: Anti-depressant drug use is very common. Alcohol and marijuana use are also common. These are used in order to feel better, rather than for thrills or excitement.

3. SYMPATHETIC DOMINANT OVERACHIEVERS. These people are often compensating for some kind of guilt feelings by overachieving and working or pushing hard.

Whom: Very common in both men and women who are mentally attuned and willful. They race around all day, work hard, think fast and may worry a lot as well.

Personality: Overachieving in some way. They may remind one of the “Energizer bunny” the way they go non-stop from morning till night. This leads to adrenal burnout and eventually severe illness in most cases, unless they can learn to slow down.

Copper effects: Copper causes very fast thinking or ‘spinning the wheels of the mind’.

Symptoms: Symptoms can become severe, including cancer, hypoglycemia, diabetes, exhaustion, depression and many others.

What they need and how to help them: They need to slow down a lot, rest the physical body, rebuild and balance their body chemistry and stop compensating for guilt in many cases. This takes a few years of development, ideally aided by coffee enemas and several years of sauna therapy. The sauna is excellent for them, as it inhibits the sympathetic nervous system.

Drug use: Used mainly to relax and slow down after a hard day’s work or play. Cocaine and marijuana appear to be the most popular ones.

4. SEVERE EMOTIONAL AND PHYSICAL WITHDRAWAL WITH A CALCIUM SHELL. This is a very chronic stress and depression pattern, combined with physical and biochemical imbalances.

Whom: Much more common in women than in men because women tend to be higher in copper to begin with, and perhaps are less able to release it than men. This syndrome is seen in some criminals, delinquents, welfare cases, homeless people, those in mental institutions and others with social problems.

Personality: Psychologically withdrawn. This means that they are ‘absent’ a lot, living in a world of their own making, unaware of the greater world, often out of touch with reality and with how unhappy they are, and without much of an idea of what to do about it.

Copper effects: Causes serious emotional and physical withdrawal, at times severe depression, suicidal tendencies in some cases, criminal tendencies in some cases and possibly psychotic tendencies such as schizophrenia or psychopathic behavior. The person is very copper poisoned, not just high in copper.

Symptoms: These vary, but always include terrible fatigue, acne or other skin problems, often suicidal depression, schizoid behavior, headaches, menstrual imbalances and others.

What they need and how to help them: These people are relatively easy to help with dietary changes, an improved lifestyle with much more rest, and a development program.

Drug use: Sedative drugs such as marijuana and heroine complement their personality tendencies. They may use methamphetamines and others to come out of a shell for a few hours.

THE FOUR LOWS PATTERN (OR FOUR LOW MACROMINERALS)

This important pattern is indicated by a calcium level less than 40 mg%, magnesium less than 6 mg%, sodium less than 25 mg%, and potassium less than 10 mg%. The hair must not be washed at the laboratory for accurate readings. Dr. Eck spent years trying to understand this pattern and design a corrective program. His discovery of the pattern and how to correct it is one of his most amazing insights and contribution to our world. Psychologically, four lows on an initial hair analysis is associated with:

- *Often productive, hard-driving, serious individuals who can be hard on themselves and by extension, often are hard on others. Some are obsessive, compulsive and perfectionistic.*
- *If the pattern has gone on a while, which is often the case, a person feels very stuck in the mind, at some level, and often is in a process of giving up, becoming negative and cynical to some degree. In other words, some degree of a death wish is always present.*
- *Disconnected with the reality of spirit and therefore unable to relax and just enjoy life.*
- *Always pushing and driving with the ego mind, and getting nowhere. We use the analogy of the car stuck in the ditch, spinning the wheels and just getting in deeper.*
- *A need for intense rest and relaxation.*
- *Copper imbalance is always present, although the copper is usually hidden.*
- *Children who experience this pattern may be living with a parent who has the pattern, or who drives the child in a way that creates the pattern. Alternatively, the child may have a difficult karmic or other situation causing the pattern.*
- *The pattern is not important on a retest during a development program. It is often a retracing or a 'resting death' pattern that usually passes within a few months to a year. The best analogy is a dog who curls up in the corner to rest and relax in order to heal himself.*

PSYCHOLOGICAL AND LIFESTYLE CAUSES OF FOUR LOWS

To help reverse a four lows pattern, it is helpful to know how and why a person may move into the pattern. The major ways are described below:

1. MAINLY A LIFESTYLE CAVE IN.

Causes. Feeling overwhelmed, such as from a job loss, becoming ill or disabled, or some other stress such as a divorce. The person is also often toxic from unhealthy diets and other reasons. This adds to the problem, but is not the total cause. All the stress causes a "cave in".

Whom. This is the most common cause of four lows in America. It occurs in men, as much or more than in women. Most are hard-working, white-collar or blue-collar workers.

How to help them: They can do well on a development program. The problem is getting them to stay with the program, as it requires more discipline, especially dietary discipline, than most are accustomed to.

2. MAINLY NUTRITIONAL DEPLETION.

Causes. Collapse occurs due mainly to nutritional depletion. Many are vegetarians or have followed raw food or other extreme or deficient diets for years. Other types of stress add to the problem, but are not the major cause. Many are just getting older and their poor quality diets and impaired nutrition catches up to them, causing a four lows pattern.

Whom. Affects men, women and children equally, mainly in Western societies where the diets are mainly refined foods, and the bodies are further weakened by chlorinated and fluoridated water, medical drugs, vaccines, air pollution and other insults to the bodies.

What they need and how to help them. They absolutely require the correct nutrition, along with a few supplements, but not too many, and often they require much more rest.

3. MAINLY EMOTIONAL EXHAUSTION.

Causes. A delicate nervous system along with stress causes extreme anxiety and finally a collapse. Copper imbalance is often prominent, contributing to anxiety, fears and emotionality.

Whom. Mainly women over 25 with delicate nervous systems. However, it could be anyone who cannot relax because they worry constantly, even though they may sleep a lot.

What they need and how to help them. In addition to development, these people need the Roy Masters meditation and relaxation methods such as breathing, gentle walking or other methods to calm the mind.

4. MAINLY MENTAL EXHAUSTION.

Causes. This occurs in some cases of multiple sclerosis, Lou Gherig's disease and others. The person is mentally very intense, and not mentally balanced. Eventually the nervous system 'crashes' due to overwork, lack of rest, nutritional depletion and lack of mental control. This is very different from a lack of emotional control. Mental control has to do with resting the mind during the day instead of running it full bore all the time.

Whom. Relatively rare, and seen in cases of multiple sclerosis and perhaps other mercury toxicity syndromes.

What they need and how to help them. This pattern may be difficult to help with development, especially in long-standing cases. One must help the person to slow down mentally, which they do not like and/or have great difficulty with, thanks to mercury or other metal toxicity and perhaps mental problems. The Roy Masters meditation is most helpful, but they often do not like it because it raises awareness and can go around the conscious mind.

5. MAINLY SEXUAL FLUID LOSS.

Causes. Collapse is caused by overdoing on sexual activity.

Whom: Less common, but occurs in hetero- and homosexual men and some women.

What they need and how to help them. They are easy to help with development if they will reduce their sexual activity.

6. MAINLY STRUNG OUT OR POISONED BY DRUGS.

Causes. Collapse is caused by a combination of factors. However, the main one is being 'strung out' on a drug. It is most often sugar or caffeine, but it could be due to marijuana, methamphetamines or others. This leads to extra stress, confused thinking and poor quality lifestyle decisions. After a few years of living this way, the nervous system is 'fried' or becomes overwhelmed, causing one to collapse into four lows.

Whom. Common among some groups of Americans and Europeans, in particular.

What they need and how to help them. They need a new lifestyle, a clean diet, no stimulants or drugs, and a four lows development program. Progress will be slow if the body is loaded with drugs. Sauna therapy is most helpful to remove some of them. Advanced cases are more difficult to heal due to the poisoning of the nervous system with drugs.

7. MAINLY OPPRESSED OR VICTIMIZED BY OTHERS.

Causes. Collapse is due to inner stress from fear, starvation, disease and working too hard to survive. This is aggravated by stress from outside the body such as frequent wars, political unrest and often outright oppression by vampire-like governments. This results in epidemics of serious illnesses such as AIDS that further weaken the body until it collapses, often at a young age. Most do not live long lives.

Whom. Very common in developing nations, but it is not seen much in Western capitalist societies that are more prosperous and respect the rights of individuals and women, in particular.

What they need and how to help them. They are quite easy to help if they could afford good food, and if they could rest, which most cannot as they are kept poor and almost in slavery by their corrupt governments.

8. HELPING ANOTHER TO RECOVER HIS OR HER HEALTH

Causes. A person decides to help another family member who has serious health issues. To accomplish this, the ‘helper’ must match the others’ patterns, so the child, usually, develops a four lows pattern because the parent has a four lows pattern. The child, however, is not that ill and may have few symptoms of illness.

Whom. This cause of four lows is seen in children of parents with four lows. The ‘helper’ who develops the pattern can be a baby, a child or a young adult.

What they need. A complete development program will greatly assist the ‘helper’ to assist his or her parent. Then the four lows pattern will generally disappear. It is best if both the parent and the child follow a development program.

For those interested, another set of personality styles is described in an article available at www.drlwilson.com. It is entitled *Personality Types Related To The Seven Chakras*.

MENTAL AND EMOTIONAL CONDITIONS AND HAIR ANALYSIS PATTERNS

ADD and ADHD – fast oxidation, toxic metals, or slow oxidation with copper imbalance, or a high or low sodium/potassium ratio.

Aggressiveness – very fast oxidation, high sodium/potassium ratio, low calcium and magnesium levels, four lows and perhaps sympathetic dominance.

Alcoholic tendency - low zinc, high copper, (alcohol depletes zinc, magnesium and B-complex vitamins), fast oxidizers may crave acetates in alcohol. Slow oxidizers may use alcohol to maintain their blood sugar levels and may crave sweet alcoholic beverages as well.

Alzheimer’s disease – high aluminum, copper, or mercury, slow oxidation and perhaps others.

Anger – fast oxidation, a high or low sodium/potassium ratio, high copper, zinc loss, cadmium, lead and other toxic metals.

Anxious – copper imbalance, fast oxidation, mercury or other toxic metals, low or bioavailable calcium and magnesium.

Apathetic – low energy patterns, usually a very slow oxidizer or fast oxidizer with a low sodium/potassium ratio, or high toxic metals.

Anorexia – high copper, low zinc, sympathetic dominance, or a low sodium/potassium ratio.

Awareness, reduced - a calcium shell, very slow oxidation, elevated copper, high toxic metals, a low sodium/potassium ratio or four lows.

Brain fog or foggy thinking – copper imbalance, often a very slow oxidizer, yeast infection in the brain, aluminum and other toxic metals. Brain fog can have a variety of causes.

Bipolar disorder – mixed oxidation, four highs, four lows, very slow oxidation, or fast oxidation with a low sodium/potassium ratio.

Compulsive - four lows, high sodium/potassium ratio, sympathetic dominance and, at times, fast oxidation.

Defensiveness – Ca/Mg ratio greater than 8 or 9, spiritual defensiveness pattern, high sodium/potassium ratio, low sodium/potassium ratio, see anger patterns.

Dementias – usually aluminum, mercury, other toxic metals, slow oxidation, or four lows.

Depression – very slow oxidation, low sodium/potassium ratio, all low energy patterns and possibly toxic metals such as nickel, cadmium and others.

Developmental delay (PDD and many other labels) – zinc deficiency, or most toxic metals.

Effeminate – excess copper in men, especially.

Emotional repression – calcium shell, low sodium/potassium ratio or low energy patterns.

Extreme lifestyle stress – a very high calcium/magnesium ratio, three low macrominerals, low sodium/potassium ratio, possibly a calcium shell.

Hidden and/or severe emotional trauma – many patterns, especially fast oxidation, a sodium/potassium ratio less than 1, or very slow oxidation with a calcium shell.

Irritable, nervous –see Anxious above.

Learning disorders – low zinc indicators, high copper indicators, many imbalances, low energy patterns, and most toxic metals.

Libido, low or low sex drive – slow oxidation, calcium shell, or other low energy patterns.

Macho (toughness) – fast oxidation, high cadmium, low zinc, possibly high lead or mercury, high iron and high manganese and, at times, four lows.

Manic – fast oxidation, high copper, toxic metals, especially mercury, or possibly a high sodium/potassium ratio.

Memory loss – see dementias.

Mood swings – see bipolar disorder.

Obsessive-compulsive disorder – many possibilities, fast oxidation with high copper, high copper alone, toxic metals such as aluminum, or occasionally part of brain fog (see above).

Paranoid – very fast oxidation, a low sodium/potassium ratio, and very slow oxidation.

Passive-Aggressive – three highs or four highs, along with a calcium shell and possibly a low sodium/potassium ratio.

Phobias – low zinc, high copper, low sodium/potassium ratio, toxic metals.

Pretenders or those who are trying to fit in where they really don't belong – Spiritual defensiveness pattern (high Ca/Mg ratio), sympathetic dominance (low potassium), at times.

Psychosis – low zinc, high copper, lead, mercury or cadmium, low sodium/potassium ratio or possibly very fast or very slow oxidation.

Schizophrenia – copper imbalance, possibly involves mercury or other toxic metals.

Self-esteem, low – very slow oxidation rate, low sodium/potassium ratio, bowl pattern (high Ca/Mg with low Na/K).

Sexual dysfunctions - toxic metals, very slow oxidation, low zinc, high cadmium, high copper associated with impotence and erectile dysfunction.

Spacey or detached – copper imbalance, high aluminum, high mercury and others.

Stalled transitions, or a need for change – four highs, four lows, fast oxidation with a low sodium/potassium ratio, or sympathetic dominance.

Stress responses (from the best to the worst) – fast oxidation, fast with inversion, four highs, slow oxidation, sympathetic dominance, Grave's disease, slow oxidation with a low sodium/potassium ratio, a bowl pattern and finally four lows.

Trying too hard – sympathetic dominance (low potassium), and possibly a calcium shell or spiritual defensiveness pattern (high calcium/magnesium ratio).

Vampirism – most common in fast oxidizers, and possibly in the other transition patterns – low sodium/potassium ratio, low potassium level, four lows and four highs.

Vitality, low – four lows, low phosphorus, low sodium/potassium ratio, or very slow oxidation.

Workaholic – often a calcium shell, with three highs or four highs, along with a high sodium/potassium ratio.

LIST OF IMPORTANT PATTERNS ON A HAIR MINERAL ANALYSIS

Adrenal Stress = sodium above about 100 mg%. High aldosterone causes high sodium in hair.

Aggressiveness = calcium less than about 14 mg%, often fast oxidizer with low Mg and low Zn.

Attempting To Overcome Overwhelming Stress = three lows and sympathetic dominance.

Basic Burnout = sodium less than 5 mg%. Low aldosterone causes low sodium in the hair.

Belligerence = magnesium less than about 3 mg%, often a fast oxidizer with low Mg and low Zn.

Biounavailable calcium and magnesium = calcium above 100 mg%, magnesium above about 9 mg%. Calcium and magnesium beginning to precipitate out of the blood into the hair.

Bowl Pattern = a high Ca/Mg ratio and a low Na/K ratio, often feeling emotionally stuck.

Burned Out Sympathetic Dominant = low potassium and a low sodium/potassium ratio.

Calcium Shell = calcium above 170 mg%, calcium is biounavailable and builds up in the hair.

Calcium/potassium ratio = the thyroid ratio, involved in determining the oxidation rate.

Double High Ratio or Double Inflammation = a high Ca/Mg ratio and a high Na/K ratio.

Double Low Ratio or Double Inversion = a low Ca/Mg ratio and low Na/K ratio.

Fast Oxidation = an alarm stage of stress, defined as a low calcium/potassium ratio and a high sodium/magnesium ratio.

Four Lows = four low macrominerals, spinning one's wheels in a ditch, or collapsed.

High Sodium/potassium Ratio = high vitality ratio, acute stress, inflammation and anger.

Hill Pattern = a low Ca/Mg ratio and a high Na/K ratio on a retest, celebration, positive change.

Low Sodium/potassium Ratio = low vitality ratio, fatigue, resentment, hostility, frustration, carbohydrate intolerance, chronic infections, excessive tissue breakdown.

Overwhelming Stress = three low macrominerals, four variants possible, almost a four lows.

Passive-Aggressive = a calcium shell, with three or four highs, and possibly a low Na/K ratio.

Severe Lifestyle or Attitude Stress = high calcium and a high Ca/Mg ratio.

Severe or Double Burnout = a calcium shell and a low sodium/potassium ratio.

Slow On Crutches = hidden pattern on a first test. The three amigos or other toxic metals such as copper, cadmium, arsenic or lead speed up the oxidation rate, making it look faster.

Slow Oxidation = an exhaustion stage of stress in most cases, defined as a high calcium/potassium ratio and a low sodium/magnesium ratio.

Sodium/magnesium Ratio = the adrenal ratio, involved in determining the oxidation rate.

Step Down = slow oxidizer, high Ca/Mg, high Na/K, determined to move ahead slowly.

Step Up = fast oxidizer, low Ca/Mg, low Na/K, very stuck, stalled transition, illness pattern.

Stress From Within And Without = high Ca/Mg with low potassium, stress from many levels.

Sympathetic Dominance = potassium of 4 mg% or less, pushing oneself mentally or physically.

Three Highs/Four Highs = slow oxidizer under a lot of stress, a secondary alarm reaction.

Tired or Temporary Fast Oxidizer = fast oxidizer with a low Na/K ratio, burned out fast.

Trying Hard To Stay Afloat = high Ca/Mg and high Na/K ratio, & potassium of 4 mg% or less.

Trying Too Hard = very high calcium with very low potassium, pushing oneself too hard.

Vampire Fast Oxidizer = a person remains in fast oxidizer by stealing energy from others.

Wasting One's Time = a calcium shell, a high Ca/Mg ratio and a potassium of 4 mg% or less.

Workaholic = three or four highs, and a high sodium/potassium ratio. A stressed slow oxidizer.

**44.
THERAPEUTIC IDEAS, COMPUTER-GENERATED REPORTS, COFFEE ENEMAS,
SAUNA THERAPY AND THE ROY MASTERS MEDITATION**

Chandra, age two and a half, was the size of a newborn. She was diagnosed with a chromosome defect, failure-to-thrive and a delayed development syndrome. She did not speak or walk, was lethargic, ate very little and had mongoloid-like features. She was completely unable to control her limbs and was prone to frequent seizures if she ate any fruit or juices. She was growing only one-fourth of an inch every six months. Her mother had tried many therapies all over the world to help her, with no success. Doctors doubted she would ever grow much or be able to function much at all.

Chandra's first hair analysis revealed lead, mercury, cadmium and aluminum toxicity. This was probably acquired from her mother in utero, as her mother had not been healthy during her pregnancy. Her zinc level was 7 mg%, less than half the ideal level. Zinc is an essential mineral for growth and development. Cadmium interferes with zinc metabolism. Chandra's sodium/potassium ratio was low, while phosphorus was high. Both of these imbalances are associated with excessive tissue breakdown.

After three months on a development program, Chandra was growing eight times faster, developed a robust appetite, was much more active and began to make sounds. The first retest, five months after the first one, revealed an improved zinc level and lower toxic metal levels. Chandra kept on her development program for a number of years.

At age 6, Chandra learned to communicate by pointing at letters on a paper keyboard. Her first words were, "It is so nice to speak with you after all these years". Soon afterwards, she shocked her mother by "speaking", using the keyboard, in old German and Persian. Her mother had to buy dictionaries to understand her. The child also demonstrated psychic abilities such as clairvoyance and clairaudience, though she still does not speak.

At age 11, Chandra wanted to go to school. When asked why, she answered, "to teach the other children". So off she went in a wheelchair. At age 14, Chandra asked to study heliotropism, a word her mother did not even know. The only local school that taught a course on it was Arizona State University. Arrangements were made and this very impaired-looking 14-year-old entered college. Chandra has continued to amaze everyone. She also does healing work. The dramatic response of children such as Chandra illustrates that even when a severe birth defect is present, body chemistry can be improved to allow these children to develop in a more normal way. I wonder if Chandra's disabilities have even helped her retain or develop other unusual abilities that are now coming forth.

This chapter discusses more specifics regarding the therapeutic aspect of development. This text is not a therapy manual, as this would require another large book.

MAJOR MODALITIES AND THERAPEUTIC PRINCIPLES

Development uses an number of modalities that are all what may be called whole system modalities. This means they are so basic they affect every aspect of human functioning. When setting up a development program, do not overlook the: 1) lifestyle, 2) diet, 3) drinking water type and amount, 4) nutritional supplements, 5) detoxification procedures and 6) simple mental/emotional suggestions or modalities. Chapters 2 through 6 discuss the basic requirements for each of them. This chapter goes into more detail about several of them.

The main therapeutic principles in development that set it apart from other healing methods include 1) always balance the oxidation rate and the major ratios first, 2) always work with the teleology or healing intent of the body, and 3) always seek to improve overall vitality. Also, avoid all toxic substances, including most herbs and yin supplements. In addition, always use a combination of modalities, rather than just a diet, for example.

DR. ECK'S SUPPLEMENTATION SYSTEM

Dr. Eck figured out a supplementation method that is simple, yet addresses most important aspects of healing with just a few products. It includes:

1. *A 'metabolic pack' designed specifically to balance the oxidation type and oxidation rate.* More tablets are sometimes given when the rate is more unbalanced.
2. *A glandular product to help balance the oxidation type and rate.*
3. *A product to balance the sodium/potassium ratio.*
4. *A digestive aid and liver support product.*
5. *Individual minerals such as calcium, magnesium, zinc, selenium, copper, and chromium.* These are only given in a way that keeps the entire program in balance.
6. *Specialty products.* A few products may be suggested based on a person's hair analysis and/or symptom picture. However, these are always recommended in a way that does not unbalance the body chemistry. Let us examine each of these in more detail:

1. METABOLIC PACKS. These are combination products designed to supply all the basic nutrients needed to balance one's oxidation type and rate. They also include some nutrients that most people need today such as a little vitamin A, B, C, D, E and others. Three of them are available from Endomet Laboratories, one each for fast, fast with a low sodium/potassium ratio, and slow oxidizers. Most people receive a Metabolic Pack. Exceptions are those with a four lows patterns, and young children if they eat well and their oxidation rate is not too unbalanced.

2. FREEZE-DRIED GLANDULARS. Research supports the concept that animal-based glandular extracts that are essentially free of hormones can help rebuild their target organ or tissue. Several types exist, including those extracted with salt and those that are freeze-dried. Dr. Eck preferred the freeze-dried type of adrenal, thyroid, thymus, kidney and other glandulars. Most people receive a glandular product except in the following situations:

- *Hormone-dependent cancers.* Glandulars might aggravate these cancers, including possibly some breast, uterine, ovarian, cervical, prostate and testicular cancers. The ARL computerized recommendations may not take this into account.
- *Babies and small children.* They seem to do fine without glandular products, though they could be very helpful in some cases with children. Their taste and smell can be a problem.
- *Four lows pattern on a first test.* Dr. Eck found these individuals do not need or do well on glandulars, particular slow oxidizers.

3. A PRODUCT TO BALANCE THE SODIUM/POTASSIUM RATIO. Correcting this ratio is one of the most important, if not the most important action to take with most people. Zinc or Endopan are given to reduce the ratio, while Limcomin raises it. The more imbalanced the ratio, as a general rule, the more tablets of these are recommended.

4. GB-3 OR ANOTHER DIGESTIVE AID. This is one of the most important products for many people. The reasons for its use include:

- *Balancing copper and helping to remove toxic metals through the liver and colon.*
- *Correcting many cases of constipation.*
- *Enhancing liver detoxification and bile flow.*
- *Killing or weakening hundreds of pathogenic bacteria, viruses, fungi and even parasites.*
- *Digesting debris in the intestines.*
- *Normalizing the pH and digestive enzyme levels in the intestines.*
- *Weakening or killing some cancer cells is also possible with pancreatin.*
- *It is a more yang and more parasympathetic supplement than other digestive aids.*

Skipping the digestive aid, even in those who do not have digestive symptoms, is a common mistake some practitioners make. Most people have digestive problems today, even if they have no symptoms. Children may not be given this product as it smells and tastes bad.

Everyone should start gently with only about 1 tablet daily of GB-3. Too much at first can cause cramping and diarrhea because it digests debris and pathogens in the intestines. Occasionally, someone cannot take any at all for a while until the intestine heals. It is best to warn clients about this possibility. However, in a month or so, the product is usually tolerated better and the dosage can often be increased. Theoretically, the more of the GB-3 product a person can take without diarrhea, the more effective it will be, especially to rid the digestive tract of parasites and infections. Usually, a dosage of up to 3 per meal is sufficient.

In those that cannot take GB-3, usually due to some diarrhea, one can use a weaker product such as *Betaine HCl with pepsin* or a combination product such as *Enz-aid* by Endomet Labs. Much less recommended, though somewhat effective, are the vegetable grown enzymes such as protease, amylases and others. Their disadvantages include:

- *They are fungally-derived, which causes allergic reactions in some people.*
- *They are much more yin in Chinese medical terminology.*
- *They are not as physiologically close to human enzymes because they are fungally-derived.*

Dietary Fiber Tablets are an excellent product that adds quality fiber to the diet. They are rarely needed, however, if one follows the dietary plan with plenty of cooked vegetables.

5. OTHER MINERAL SUPPLEMENTS. Most people require additional amounts of calcium, magnesium, zinc and perhaps copper, selenium, chromium and others due to:

- *Low dietary intake of minerals.*
- *Poor absorption due to impaired digestion, for example, or unhealthful eating habits.*
- *Diets containing less usable forms of minerals such as the calcium and magnesium found in pasteurized or homogenized dairy products.*
- *Chemical imbalances in the body such as biounavailable calcium and magnesium.*
- *Greater needs in some cases, such as extra calcium and other minerals used to help prevent bone loss in older women.*
- *Possibly symptomatic reasons such as more calcium and magnesium in the evening to promote better rest and sleep.*

6. OTHER PRODUCTS, DEPENDING ON THE SITUATION. These range from other basic vitamins and minerals to more exotic products in some instances.

SUPPLEMENT DETAILS

Supplementary minerals. The system of supplementation described below is only for use with a properly performed hair analysis, and not designed for other types of mineral tests:

- *Calcium.* Calcium can help balance the oxidation rate in both metabolic types. Supplements provide a somewhat bioavailable form of the mineral that everyone needs today. Most people are not ingesting enough bioavailable calcium due to pasteurization and homogenization of the dairy products, and low levels of green and other vegetables in the diet. This is why carrot juice and raw, certified dairy products are highly recommended.
Calcium may also be used symptomatically for insomnia, anxieties, and occasionally for muscle tightness and cramps, irritability or other low-calcium syndromes.
- *Magnesium.* This mineral is also so deficient in the diets of most people that supplements are helpful for everyone. Dr. Eck discovered this by trial and error, but it has been confirmed medically in many cases. Supplements balance both metabolic types. Calcium and magnesium both powerfully affect the mineral balance in other complex ways. Stress and heavy exercise increase the need for magnesium. It may also be used symptomatically for the same reasons as calcium, as well as for its laxative properties, and perhaps others.
- *Manganese.* Raises sodium and helps to lower a high copper. Most diets are deficient in bioavailable manganese. A small amount is needed by most people. It is given even when the hair manganese level is high, since a high hair level usually indicates biounavailable manganese and does not mean that supplementation is not needed.
- *Zinc.* Lowers sodium, replaces copper in the liver, helps raise a low potassium, and helps stabilize the blood sugar level. Extra zinc is needed by most everyone today. Even more zinc may be given with cases of diabetes and perhaps in a few low-zinc syndromes such as skin diseases, eye problems, copper toxicity and perhaps a few others.
- *Chromium.* Raises sodium a little and helps stabilize blood sugar levels. Extra chromium may also be given symptomatically for diabetics and to help reduce sweet cravings. Most diets are low in chromium.

- *Copper*. Raises a low sodium/potassium ratio, may raise calcium, and, in excess, can lower potassium. Copper is rarely used symptomatically for gout and perhaps for infections because it can antagonize iron.
- *Iron*. Used very rarely as a supplement in development science. Iron raises sodium, may lower copper and can interfere with the absorption and utilization of other trace minerals in the body. In some biounavailable forms, it is extremely pro-inflammatory. Supplements may be needed for malnourished children, vegetarians and young women with very heavy periods who do not eat much meat and eggs. Most people, especially slow oxidizers, have too much biounavailable iron.
- *Selenium*. This is needed by everyone. It is critical as an anti-oxidant, for thyroid activity and liver detoxification. Extra selenium may be used to help remove lead, mercury, cadmium, nickel and many other toxins from the body.
- *Iodine or kelp*. Everyone needs supplemental iodine due to iodine antagonists in the environment. A few kelp capsules are recommended for everyone as a general mineral supplement, as well. Kelp is the only sea vegetable used because it also contains significant alginates and other compounds that bind toxic metals found in all products from the oceans and lakes. The use of kelp is explained in more depth in Chapter 4.
- *Molybdenum*. Reduces copper via a chelating mechanism, and may raise sodium a little. It is somewhat toxic, so Dr. Eck only used it rarely for symptoms of extreme copper toxicity.
- *Lithium orotate*. Protects the brain from toxic metals and can help with some cases of depression and manic states. It can also raise a low sodium/potassium ratio, in some cases.
- *Limcomin*. This is a combination formula Dr. Eck developed to raise the sodium/potassium ratio. It is used often and works well.

Supplementary vitamins may include:

- *Vitamin A*. This is a critical vitamin substance needed by the body that is present in a number of the formulas. It is not used much by itself for this reason. It is synergistic with zinc, and helps lower a high sodium. It is an anti-stress vitamin in this regard. It may be used in high doses for a week for any infection, especially those involving the skin or mucus membranes such as the bladder.
- *B1, B2, B3, B5, B6*. These are rarely used by themselves to help speed up a very slow oxidation rate or for severe depression.
- *Vitamin B3*. Helps raise sodium and lowers copper. Niacinamide also helps with liver detoxification. It is a methylating agent, which is calming and alters the adrenal response. It is found in ICMN (inositol, choline, methionine and niacinamide).
- *Vitamin B5*. Needed for the adrenal glands, so it tends to raise low hair sodium and potassium levels and helps reduce elevated copper.
- *Vitamin B6*. Raises sodium and magnesium, and can help lower an elevated and biounavailable copper. May be given in higher doses for a few days for premenstrual syndrome, or for a longer time for depression, anxiety and other copper imbalances.
- *Folic acid*. Helps the adrenals and may help lower an imbalanced copper.
- *Inositol and choline*. Found in the metabolic packs for fast oxidizers to help reduce an excessively fast oxidation rate. In excess, it can slow the elimination of toxic metals. This can be helpful in rare cases.
- *B-12 Sublingual*. Extra vitamin B12 may be helpful for strict vegetarians, and for anyone over 60 years of age or who suffers from digestive problems.

- *Vitamin C*. Raises sodium, needed for the adrenals, helps lower elevated calcium, copper and magnesium, and can help reduce toxic metals via a natural chelation method. More may be given symptomatically to lower an elevated copper or in very high amounts as an anti-viral agent in rare cases, as it is very effective as a drug-like substance for viral infections.
- *Vitamin D3*. Helps normalize calcium levels, relaxes the nervous system, assists with bone health and has many other beneficial effects on the body. Everyone needs more today, according to recent research, as the sun and other sources do not seem to be enough.
- *Vitamin E*. A potent anti-oxidant that also raises sodium and magnesium in the hair tissue, and is synergetic with many other vitamins. It may be given by itself to help circulation, raise a low blood pressure, for strokes and other cardiovascular events, or for other anti-oxidant needs. Most people could benefit from more of this interesting substance.
- *Vitamins K1, K2, and K3*. Extremely beneficial to regulate liver activity, detoxification, blood clotting and other functions. It is not usually supplemented as it is found in green vegetables. It could be used symptomatically in a few cases to enhance blood clotting or to reduce morning sickness, along with vitamin C.
- *Bioflavonoids such as rutin, hesperidin, quercetin and others*. These are powerful anti-inflammatory nutrients found in many foods, so they are not usually supplemented. They may be used symptomatically for some allergies, for capillary fragility and as an anti-inflammatory agents. Dr. Eck used them primarily for fast oxidizers.
- *Omega-3 fatty acids. (or EPA-DHA 300)*. Almost everyone requires extra omega-3 fatty acids today due to the widespread use of vegetable oils in hundreds of products, and because livestock are fed corn instead of grass and other natural foods of these animals. Adults require about 3 tablets/day, while children need a little less. Babies need it very much today.

Glandulars for the oxidation types. Adrenal and thyroid glandulars help speed up a sluggish oxidation rate. Dr. Eck's glandular for fast oxidizers contains thymus and a small amount of adrenal. In my experience, this is somewhat less important than the glandular products for slow oxidizers. Thus, I may omit a glandular for a fast oxidizer if I wish to reduce the size and cost of a supplement program. Thym-adren is most helpful if a person is weak or in an unstable physical or emotional condition.

Kidney and other glandulars. Kidney glandular is helpful to remove all toxic metals and chemicals, especially excessive lead, cadmium, mercury and nickel. These accumulate in the kidneys and tend to be eliminated through the kidneys more than the others. Kidney glandular may also help balance a very high or very low sodium/potassium ratio and may be helpful for high blood pressure and severe fatigue.

MCHC or microcrystalline hydroxyapatite crystals may help retard bone loss in post-menopausal women, or in anyone at risk for osteoporosis. It can be substituted for Paramin, the other major calcium and magnesium-containing product. However, one must then give extra magnesium, since MCHC is not rich in magnesium. *Prostacine* is a prostate formula that may help with benign prostatic hypertrophy, although it is often not needed with a development program. *Ova-adren* is a female glandular that may help with hot flashes. However, I reserve it if *Thyro-complex* or *boron* are not helpful. *Ova-adren* is high in copper and contains some slightly toxic herbs. *Ova-adren* may also be suggested for some cases of PMS. However, the PMS program usually works well without it.

Other specialty products. A variety of other products may be helpful in a few situations:

- *ICMN*. This is a formula containing inositol, choline, methionine and niacinamide. It is very helpful for liver detoxification, anxieties, high copper and other metal toxicity.
- *L-aurine*. This sulfur-containing amino acid is used as part of the four lows program, and may also be helpful for copper toxicity, anxieties, heart problems and metal toxicity.
- *Veg-easy*. Dried vegetable capsules are excellent for everyone, particularly those who do not eat enough steamed vegetables. It is better than “green food” powders, as the capsules preserve the vegetables, and a watery or sugary drink is not needed to take the product.
- *Acidophilus*. This can help some cases of diarrhea, gastric upset and intestinal infections with parasites. Another excellent probiotic product in the health food store is called Bio-K.
- *ATP-XTRA*. This is magnesium and malic acid, a combination that is helpful for certain kinds of pain, notably that found in fibromyalgia.
- *Calm Caps, melatonin and 5-hydroxy L-tryptophan or 5-HTP*. These help relax some people and may be used for insomnia, primarily.
- *Caprylic acid*. Along with garlic, this may reduce excessive yeast overgrowth, but is rarely necessary and should not be used unless absolutely required. The reasons are it is yin and adds cost and inconvenience. GB-3 is usually very effective for the same purpose.
- *Coenzyme Q-10*. This is helpful for anyone over the age of about 60, especially those with heart disease or low energy.
- *Colloidal silver*. This is a wide-spectrum anti-infection product that is quite harmless and helpful for many infections. Do not use it continuously, however, as it is slightly toxic.
- *Flaxseed or hempseed oils*. These are exceptional sources of some essential fatty acids, but are not used much because fish oil (*EPA-DHA 300*) is often a little better. However, they could be given if a person is allergic to fish oil or is a strict vegetarian.
- *Glucosamine and chondroitin (G/C 1000)*. This is rarely used because the ingredients are found in natural foods, but can help rebuild cartilage faster in some cases of severe arthritis.
- *Potassium and magnesium aspartate (Spartan MK)*: This form of potassium and magnesium will stop some cardiac arrhythmias, if the usual development program is not enough.
- *Magnesium glycinate*. This is a somewhat more costly magnesium supplement that usually does not produce diarrhea. This can allow a person to take more magnesium, which may assist sleep, relaxation, muscle cramps or tightness, and other symptoms related to either magnesium deficiency or bioavailability. It is rarely needed, however, and is very yin.

Herbs. Few herbs are used in development at this time. Chapter 4 explains why this is so, and lists herbs that are safer, as well as those to avoid. A few helpful ones include:

- *Alfalfa*. A very nourishing herb, though not needed in most cases.
- *Aloe vera*. This interesting plant is mainly useful for constipation, bowel disorders of all kinds, skin problems of many kinds, bites, wounds, and perhaps a few other applications.
- *Bayberry*. This is a very nourishing herb, though it is rarely needed.
- *Bee pollen*. Depending on the source of the pollen, this can be very nourishing and a decent source of many minerals and vitamins.
- *Black radish*. Very high in sulfur, and used to help lower copper and assist the liver.
- *Boneset and comfrey*. Excellent sources of bioavailable calcium.
- *Cayenne*. Helpful for bleeding, mainly. It is not recommended for eating in hot sauce due to its very yin quality.
- *Chamomile*. A very soothing, nourishing herb that helps many people relax and sleep better.

- *Chia seeds*. Extremely high in minerals and vitamins, and may be eaten in small quantities.
- *Coriander or cilantro*. Widely eaten in Mexico, this herb is not recommended for eating unless it is cooked.
- *Corn silk, horsetail and oat straw teas*. Good sources of selenium and silicon compounds.
- *Cumin, turmeric and curry powder*. These East Indian spices are healthy to use in cooking, but are not recommended as isolated supplements, as is popular today.
- *Cat's claw and echinacea*. Rarely needed, but helpful for some infections.
- *Daikon*. Used as a food, at times, or a nourishing herb in small quantities.
- *Dandelion, milk thistle, beetroot and burdock*. Excellent herbs for the liver,
- *Dulse, Irish moss, nori, wakame, hijiki and other sea vegetables other than kelp*. These may be eaten occasionally. They are very rich sources of minerals, but are too high in mercury and other toxic metals to be eaten on a regular basis.
- *Eluthero*. This is one of the few Oriental herbs acceptable in development science.
- *Garlic capsules*. Garlic may be given to supply more selenium and germanium, to lower blood pressure, reduce yeast overgrowth or possibly to enhance a very low energy level.
- *Ginger*. A warming herb that may be eaten in small quantities.
- *Gingko biloba*. Rarely used to facilitate circulation in the head and brain, and may help hearing problems, ringing in the ears, memory loss or perhaps other head conditions.
- *Hawthorn berries*. Very safe for the heart and circulatory system, mainly.
- *Hops, valerian and passion flower*. Relaxing and nourishing herbs (hops is a grain, from which tea is made).
- *Juniper berries*. Used rarely for certain infections and other problems.
- *Lavender*. A very soothing herb that is most often inhaled.
- *Nettles*. Used, if needed, for severe allergies if development is not enough.
- *Peppermint, spearmint and wintergreen*. Nourishing, tasty herbs for teas. However, all are naturally high in aluminum and very yin, so limit the intake of them.
- *Prickly pear cactus*. Nourishing, but very yin, so limit intake of the fruit or extracts.
- *Psyllium seeds and husks*. Excellent fiber supplement if needed.
- *Pygium, pumpkin seed oil and saw palmetto*. Used in Prostacine and other prostate formulas.
- *Red clover*. Very nourishing herb traditionally used for cancer and other degenerative diseases. Not used often.
- *Rose hips*. Very good source of vitamin C, if the tea is not boiled.
- *Slippery elm*. Soothing herbal tea for the digestive tract. Not often needed and quite yin.
- *St. John's wort*. Can help with mild depression.
- *Suma*. An excellent Brazilian herb used for cancer and other degenerative conditions.
- *Uva ursi*. Used in Renamide for kidney support.
- *Watercress*. May be eaten as a vegetable, preferably slightly cooked.
- *Wheat grass juice and other juiced grasses (ideally, fresh or frozen)*. Extremely nourishing for cancer patients and others. Always safe as a tonic twice or three times weekly.
- *White willow*. Contains similar compounds as Aspirin but is less toxic and weaker. It is a symptomatic remedy and rarely needed.

USING THE COMPUTER-GENERATED INTERPRETATION REPORTS

This textbook does not include the specifics of development program design. I prefer that practitioners work with me and the advanced students to set up the programs.

ADDITIONS TO THE ARL SUPPLEMENT RECOMMENDATIONS

Although we do not recommend it, one can use the computer-generated supplement programs from ARL. Below are changes needed to these program, in our view. **All dosages are for adults, unless specifically indicated. Children need less, depending on their weight, primarily.**

PRODUCTS FOR EVERYONE

1. Vitamin D3 – Most adults need 5000 iu of vitamin D3 daily, even if one lives in a sunny area and spends time out of doors each day. **Exceptions:** Omit if one eats 3-4 cans of sardines weekly (and do not eat more than this amount of sardines, due to mercury problems). Children above about age 5 also need some vitamin D, based on their age and weight. Also, vitamin D appears to be harmful in cases of sarcoidosis, a rare connective tissue disorder.

2. Kelp – Most everyone is deficient in iodine. While some doctors recommend a synthetic iodine product, we much prefer using about six 650 mg capsules of kelp daily, or about 1 tablespoon or 4000 mg of kelp granules. Kelp is a natural food that is inexpensive and an excellent source of iodine and many other trace minerals that everyone needs. The high levels of sodium alginate in the kelp helps bind and remove the mercury it contains. **Exceptions:** Avoid kelp if one has Grave's disease or hyperthyroidism. Also, reduce it temporarily if it causes nervousness. Reduce thyroid hormone medication if taking kelp with it causes any anxiety or nervousness. We only recommend Nature's Way, Endomet, Country Life or Frontier Herbs brands of kelp, as others may be toxic or are a different species.

3. Omega-3 fatty acids - Almost all adults need about 900-1000 mg of supplemental omega-3 fatty acids daily. Though some doctors disagree, we find fish oil the best source of EPA and DHA. Most people do not need the other fatty acids. **Exception:** Omit if one eats 3-4 cans of sardines each week. Tuna and salmon are also rich sources of omega-3 fatty acids, but contain too much mercury, so we do not recommend eating them at all.

4. Endo-Veggie (from Endomet Labs) or other dried vegetable capsules - These are good for many people, especially for those who do not eat 6-9 cups of cooked vegetables daily. **Exception:** We do not recommend this product for most people who have a four lows pattern on their hair mineral analysis because the product is somewhat stimulating.

5. Zinc - If the sodium/potassium ratio is greater than about 8, the ARL computer does not recommend enough zinc. *Increase zinc* to 1-1-2 if the sodium/potassium ratio is about 8 to 12, to 2-1-2 if the ratio is between about 12 and 30 and to 2-2-2 if the ratio is above 30.

6. Trimethylglycine or TMG - Men = 3000 mg daily and women = 1000 mg daily. **Exceptions:** Rarely, someone reacts to this supplement. Reduce the dose if needed.

7. Drink 2 to 3 quarts daily of only spring water or carbon-only filtered tap water.

8. In Grave's disease - Do not give any Megapan, Endo-dren, Thyro-complex or kelp.

9. Lecithin. (New for 2019). Some people benefit from added lecithin. We prefer sunflower lecithin over soy lecithin. Capsules or granules are acceptable. The dosage varies from 1200 mg daily to 3600 mg daily and rarely a little more. The main indication is anxiety feelings. We do not base this recommendation on hair analysis readings at the present time.

CHANGES FOR ALL CHILDREN'S PROGRAMS

Children's supplement programs are tricky to set up, in part because dosages need to vary depending on the child's age and perhaps weight. The best idea is to work with one of our Approved Helpers. For children, we prefer using small amounts of the adult products. Also:

- All children over age 5 need 1 or 2 capsules of omega-3-rich oil and extra vitamin D3.
- Some children prefer more supplements than their weight would suggest (see *Loading* at www.drlwilson.com).
- Grind or crush the supplements and mix them with a little cream. If possible, give children choices as to how to take their supplements.
- Young children often need only three or four supplements, and only two doses daily.

PROGRAM CHANGES FOR SLOW OXIDIZER ADULTS

1. Megapan. Use this product for all slow oxidizers. The dosage is usually 2 tablets three times daily. **Exceptions:** Very important exceptions are to use only 1-1-1 or 2-1-0 Megapan tablets with *sympathetic dominance pattern* (potassium of 1-4 mg% and/or a high sodium/potassium ratio) or if extreme anxiety is present. Do not give Megapan if a person has Grave's disease. Use less in the evening if Megapan interferes with rest and sleep.

2. Substitute Thyro-complex (2-2-2 or 3-2-1) for Endo-dren if the potassium level is 4 mg% or less. Those with a low potassium are usually 'wound up' or very active. Giving them Endo-dren (or 2-2-2 Megapan) can slow healing, in my experience.

PROGRAM CHANGES FOR FAST OXIDIZERS

1. Omit Endo-C-1000. Dr. Eck did not suggest giving high amounts of vitamin C to fast oxidizers, as they do not need it in most cases and it lowers their copper level.

PROGRAM CHANGES FOR FOUR LOWS PATTERN

Dr. Eck gave those with a four lows pattern only 1) Paramin (a combination of calcium and magnesium) at a dosage of 2-2-2 to 3-3-3, 2) GB-3, 1-1-1 or 2-2-2 and 3) zinc 1-1-2 to 2-2-2 if the sodium/potassium ratio is 2.5 or higher, or Limcomin 1-1-1 to 3-3-3 if the sodium/potassium ratio is low. We have added L-aurine at a dose of 3 grams daily.

If mercury, cadmium or nickel are elevated, we may also add Renamide 1-1-1 to 2-2-2 (a kidney support formula with herbs and glandular). This is to assist toxic metal removal through the kidneys. Sauna therapy, coffee enemas and the pushing down exercise are also very helpful.

SPECIAL CASES THAT MAY NOT BE IN THE COMPUTERIZED REPORT

- **Severe depression.** If needed, one may add more Megapan or vitamin B complex 20-40 mg, several times daily.
- **Sweet cravings.** Occasionally, extra chromium 200-400 mcg daily, helps with this craving.

- **Copper toxicity.** Currently, we do not find it necessary to add extra products, which was done formerly.
- **Diabetes.** Add zinc (22 mg) about 1-1-1 and chromium (200 mcg) about 1-1-1.
- **Mercury, cadmium, nickel, lead, and perhaps other toxic metals.** If severe, we may add Selenium (100 mcg of a food-grown selenium, preferably) 1-1-1, and/or Renamide or another kidney glandular formula at a dose of 1-1-1 or 2-2-2. We don't use kidney herbs except those contained in Renamide from Endomet Labs.
- **Alcoholism.** If severe, we may consider adding extra zinc (22 mg) at a dose of about 1-1-1.
- **Seizures.** To control seizures until the cause can be eliminated, we may try adding lecithin 1200-3600 mg daily, taurine (500 mg) 2-2-2, vitamin B6 (50 mg) 2-2-2, or magnesium (133 mg) 1-1-1 or 2-2-2. Rarely, we give Renamide 1-1-1 or 2-2-2.
- **Hypertension.** A standard development program usually eliminates hypertension. For more rapid healing, one may add Renamide (kidney formula) 2-2-2 or more, garlic 2-2-2 or 3-3-3, extra Paramin 1-1-1 or more, and perhaps vitamin B6, up to 500 mg daily. Too many supplements are not helpful, however, because they make the body more yin.
- **Pregnancy.** Add 1 Megapan tablet if the woman is in a four lows pattern. In the third trimester of pregnancy, some women will need chelated iron (18-50 mg daily) .
- **Insomnia.** If this persists, one can try adding a cup of strong chamomile tea, more Paramin at night, valerian, 5-HTP, hops, GABA, 1 zinc tablet or possibly melatonin.

NOTE: Beware of using other brands of supplements. In our experience, many are of inferior quality. For children, be sure to reduce the dosages based on weight, mainly.

THERAPEUTIC QUESTIONS

Are there conditions for which a development program not appropriate? Yes. This method is designed for development. It is not designed for:

- *Just acute illnesses such as colds, flu or other infections.* However, the principles apply even in these instances. The simple methods in Chapter 45 often work well.
- *Trauma care, which requires surgery and other medical interventions.*
- *Some advanced cases of cancer, heart disease and other conditions.* The reasons are that we may not have time to rebuild the body enough to sustain life. Also, people with advanced disease are less able to cook the food and do the procedures.

What are the main reasons for failure with a development program?

- *Not eating enough cooked vegetables is common.* Lack of variety in foods is also common.
- *Altering the supplement program.* This usually makes the program much less effective.
- *Combining this program with other programs.* An exception is that chiropractic care is good.
- *Self sabotage.* This is the same as the above, but occurs unconsciously, and is common.
- *Lack of rest or stress of some kind will interfere with the program.*
- *Failure to retest the hair often enough.* The program must follow the body's biochemical changes in order to remain effective.

What is the success rate with a development program? This is a little tricky to quantify. The reasons are:

- *A development program works on the whole person first, rather than on symptoms first.* For example, brain activity may improve before one's main physical symptoms improve.
- *A development program corrects latent health conditions, as discussed in Chapter 1.* These are generally unseen and unfelt, so one may not notice any obvious changes as they heal.
- *Retracing occurs.* As this happens, one can feel worse for a while, even though deep healing is occurring.

As a result, one's primary symptom may not go away rapidly. This occasionally causes a client to think the program is not working, or is even making one worse. In our experience, *the program always improves one's health, even if a major symptom is slow to improve.* If one's main symptoms is slow to change, often other parameters of health are better. For this reason, we suggest that practitioners keep a record of **all** a client's initial symptoms.

Is there a difference between deep healing and just improving a person's quality of life? In some cases, the deepest healing is difficult. This may occur in a few cases when:

- *The person is very old, and one may not have time to reverse long-standing conditions.*
- *An illness is so severe that the vitality level may not be high enough for a full recovery.*
- *The person will not or cannot follow the entire program for some reason.*

DETOXIFICATION PROCEDURE DETAILS – COFFEE ENEMAS

DISCLAIMER. *Check with a health professional if you are not sure you should use the following procedures. This information is for educational purposes only and is not intended as a diagnosis, prescription, treatment or cure for any physical or mental health condition.*

Detoxification procedures were not part of Dr. Eck's original recommendations. However, the ones we suggest, such as coffee enemas and using a heat lamp-powered sauna, are quite safe and powerful, in our experience. Each heals the body in about 20 different ways.

Coffee enemas significantly shorten the time required to detoxify the liver and other organs. In many difficult cases, a person simply will not progress much without them. The procedure is a *coffee implant or retention enema* because one retains the enema for at least 15 minutes to allow the coffee to be absorbed into the hemorrhoidal and portal veins.

The colon and liver are often the most damaged organs in present-day human beings. This is due to their diets, eating habits, stress, constipation, toxic exposures and the use of hundreds of drugs and over-the-counter products that impair the normal functioning of the large bowel and the liver. One to four coffee enemas each day along with the rest of a development program is the only answer we have found.

History of the coffee enema. Enemas are an ancient form of hydrotherapy described in books as old as the Biblical Dead Sea Scrolls. Until the past 30 years, enemas were routine procedures in hospitals. Today, patients are worse off during surgery, childbirth and during other procedures because enemas were discontinued in favor of the use of laxatives. Older

editions of *The Merck Manual*, an important physician's reference, listed coffee enemas. Max Gerson, MD, author of *A Cancer Therapy - Results of 50 Cases*, used them with great success in his natural cancer and tuberculosis therapies. Dr. Gerson was a brilliant internist who worked in the early twentieth century. While we deeply respect the work of Dr. Gerson, we do not recommend the Gerson protocol for cancer. Experts we respect report that results with cancer are not quite as good with the Gerson approach as they are with more updated programs, including ours.

Benefits. Clients have told us "coffee enemas saved my life". The benefits include:

- *Mechanical cleansing of the left side of the colon and perhaps the entire colon, depending on how much water is used.* This helps rid the colon of putrefying and fermenting fecal material that releases extremely toxic substances into the blood stream day after day.
- *Enhancing bile flow.* A patient was given a coffee enema after an endoscope had been inserted at the entrance of the common bile duct. The endoscope, a thin tube with a camera on the end, recorded an increase in bile flow when the enema was administered.
- *Alkalinizing the small intestine.* This is due to increased bile flow.
- *Reflex effects on all organs and systems of the body.* For details about this interesting effect, read the *Coffee Enema* article at www.drlwilson.com.
- *Enhancing digestion due to increased bile flow.*
- *Detoxification of the liver in a way that no other method can achieve, including diet or herbs.*
- *Coffee has an astringent action on the large bowel.* This may help clean its walls of debris and helps dislodge colonies of yeasts, parasites and other microorganisms.
- *A more yang procedure.* The more yang quality of the coffee enema helps balance the yin quality of most bodies today much better than other detoxification procedures such as baths.
- *A downward movement of energy.* This is a subtle benefit of coffee enemas. Its importance is explained more in the section below about the Pulling Down Exercise.

How Often, How Long and When?

- We suggest one to four coffee enemas daily. Those with cancer need two to four daily.
- In our experience, EVERYONE needs coffee enemas daily for at least 10-15 years.
- *The best time to take an enema is before a meal or two hours afterwards.* Otherwise, it may interfere with digestion and cause uncomfortable gas and bloating.
- Ideally, do a coffee enema after a sauna session.
- Two coffee enemas, back to back, is even more powerful.

Cautions and contraindications:

- *Doing coffee enemas daily requires a little practice to work out a comfortable routine.*
- *When done properly, coffee enemas do not cause habituation, constipation or dehydration.* In 39 years of practice, we have recommended them to at least 20,000 people and no one has reported any serious problems. (See below about hemorrhoids and fissures.)
- *One should not get much of a caffeine rush from a coffee enema.* It is not like drinking a strong cup of coffee. If you do get a coffee rush, use less coffee. Do not use decaffeinated coffee.
- *Enemas taken in the evening might with sleep.* However, at times they help sleep if symptoms of toxicity are keeping a person awake.

- *Those with anal or rectal fissures, or severe hemorrhoids often have difficulty with coffee enemas.* Some of these individuals find the coffee enema very difficult to do at all. If mild hemorrhoids are present, coffee enemas can help heal them.
- *While enemas may seem uncomfortable, many clients report the procedure is so helpful they soon forget the inconvenience.*
- *One may not have normal bowel movements when doing daily coffee enemas.* This is normal and not a problem. You may want to do a quick plain water enema before the coffee retention enema to clean the colon if you have not had a bowel movement recently.

THE COFFEE ENEMA PROCEDURE

Step 1. Materials Needed:

- *A 2-quart enema-douche bag or enema bucket, with a clamp on the hose.* This is sold at drug stores or over the internet. The enema/douche bag combination is easier to use because you can close the top tightly.
- *Coffee.* Any brand of regular, non-instant and non-decaffeinated coffee is okay. An organically grown, dark roast coffee is a little better as it is more yang. For very fresh coffee, buy the beans and grind them yourself. Store all coffee in the *freezer* to preserve freshness. At first, use very little coffee for your enema in case you are very sensitive to caffeine.
- *Water.* Preferably use distilled water. However, you can use spring water or even RO water

Step 2. Preparation of coffee – three methods. Pressure-cooking or boiling the coffee are best.

1. Pressure-cooking the coffee. Put half of the total amount of water that you will use for your enema (½ to 1 cup) into a pressure cooker. **Add only ½ teaspoon of coffee when you first begin doing coffee enemas.** If that works okay, then slowly increase the amount of coffee up to 2 tablespoons of coffee. The best kind of water is distilled or spring water.

Turn on the pressure cooker. When the top starts to vibrate, **cook it for only 14 seconds.** You must have a timer that measures seconds with which to time the cooking or you will easily overcook the coffee.

When 14 seconds have past, you must release the pressure quickly. On many pressure cookers, you can do this by tilting the vibrating top. On some pressure cookers, you have to run cool water over the cooker. This is not nearly as convenient as tilting the vibrating top. Now skip to the section below called Cooling The Coffee.

2. The Regular Boil Method. Place half of the total amount of water you will use for your enema (½ to 1 cup) into a saucepan. Then add the coffee as above – between ½ teaspoon to up to 2 tablespoons – and no more! Bring the coffee to a boil and then boil it for **only 12 minutes.** Then turn it off. Now skip to the section below called Cooling The Coffee.

3. The Coffeemaker Method. This method produces a weaker coffee. Once again, put half the total amount of water you will use for the enema into the coffeemaker. Then turn on the Coffeemaker and it automatically makes the coffee.

Cooling Down The Coffee. Now add another ½ to 1 cup of cool or room temperature to the coffee liquid. This will cool down the coffee and it will increase the volume of water to

between 1 and 2 cups of water. *The water temperature must be brought down to about body temperature.* To test the temperature, put your finger in the water. It should be comfortably warm, but not burning hot. *The water must be the right temperature or the enema will be difficult to retain.*

If the mixture is still too hot, pour it back and forth through the air into a different container to cool it. Another way to cool it is to add one or two ice cubes to the boiled coffee.

Remove the coffee grounds. Pour coffee through a fine strainer or through a coffee filter paper into a clean enema bucket or bag, and close the top of the bag. The enema is now ready.

Step 3. Preparing to take the enema:

- **If possible, have a bowel movement before doing the enema.** Otherwise you may have difficulty retaining the enema. To have a bowel movement, a simple method is to drink several large glasses of warm or even hot spring or distilled water or mild tea. You may also have something to eat such as some almond butter. For some reason, this often works well.

If you have not had a bowel movement, you could take a plain water enema first, before the coffee enema. This will usually clean out the bowel quickly. A bidet toilet attachment can also be used as a laxative by just leaving it on for a minute or so at high pressure.
- **Set up the enema bag.** Be sure that: 1) the plastic hose is fastened well onto the enema bag, 2) the clamp is on the hose and working properly, and 3) the thin enema tip is securely attached to the other end of the plastic hose.
- **Remove air from the enema tube.** Place the enema tip in the sink. Grasp, but do not close the clamp on the hose. Hold the enema bag up above the tip. When water begins to flow out of the tube into the sink, close the clamp. This expels any air in the tube.
- **Lubricate the enema tip with a little soap or oil.** (Too much lubrication may cause the tip to fall out of the rectum). You are now ready to take the enema.

Step 4. Taking the enema:

- **Position.** Most people prefer lying on their backs, on a towel or rug, perhaps, on the bathroom floor or even in a bathtub. With some practice, you may feel confident putting a towel or two on your bed and doing it there. If you have a large enough sauna, you could use this space. Be sure to have a towel, a plastic sheet or perhaps a double layer of paper towels below your buttocks to catch any leakage.
- **Hang the enema bag or bucket about two to three feet above your abdomen.** Be sure the clamp is closed tightly. Some people hang the bag from a doorknob, for example. The hose must point downward so the coffee will flow out of the bag.
- **Lie down and insert the enema tip gently and slowly.** Move it around until it goes *all the way in*. If it is not all the way in, it won't work. Practice will help you learn to do this easily.
- **Open the clamp slowly.** The water should start flowing into the rectum. The water may take a few seconds to begin flowing into the rectum.
- **If the water does not flow,** you may gently squeeze the bag or move the tip around, in case it is blocked.
- **If cramping occurs** as the water is flowing in, close the hose clamp, turn from side to side and take a few deep breaths. The cramp will usually pass quickly. Occasionally, it will not pass and you will need to get to the toilet quickly to release the enema. This usually happens less often as you practice your enemas more.

- When all the liquid is inside, the bag will become flat. Then close the clamp. You can leave the tube inserted, or remove it slowly. If you wish, use some toilet paper to help remove the tip cleanly and then place the toilet paper up against the anus to absorb any leakage.
- **Retain the enema for at least 15 minutes or more.** (Less than 15 minutes is okay, but not quite as effective). See the hints below if this is difficult. You may remain lying on the floor for the 15 minutes or some people can move to a more comfortable location like a bed without spilling any coffee.
- **Relax or do the pulling down exercise.** You will find this is an excellent time to do the pulling down exercise. The coffee inside will help your focus.

Step 5. Finishing up:

- **Empty the enema.** After 15 minutes or up to an hour is even better, go to the toilet and empty out. It is okay if some water and coffee remain inside. If little or nothing comes out, you are dehydrated. Either you need to drink more water or the type of water you are drinking is not hydrating you well.
- **Wash the enema bag or bucket and tube thoroughly inside and out with soap and water.** Hang up the enema bag and hose to dry so it is ready for the next use.
- **Rub the tops of the toes, in particular.** If you feel at all uncomfortable, bloated or out of sorts after the enema, gently rub the toes of your feet, especially the top of the toes on the left foot. This will often clear it up. You may eat a meal soon after a coffee enema.

Helpful Hints:

- If you wish, when you begin the enema, lie on your right side for 1-2 minutes. Then turn onto your back. This will help the water flow around colon. Having the water in your transverse colon is very helpful because this area has the colon reflexes to the brain. Elevating the hips so the coffee touches the upper surface of the transverse colon is best. Another good way to do this is to massage the transverse colon up and down.
- To make your enema more powerful, you can shine a red heat lamp on your abdomen while you are doing the coffee enema. Carefully position the lamp about 2 feet above your abdomen.
- Some people attach a 30-inch colon tube to the tip of the enema tube, and insert the tube so the water will reach the right side of the colon. This is not usually necessary, but enables water to fill the entire colon more easily.
- If the enema makes you jittery, reduce the amount of coffee.
- The enema may lower your blood sugar. If so, have a small snack before the enema.
- Two coffee enemas, back to back, each for 15-30 minutes, are excellent for detoxification.
- If you have trouble holding the enema, here are suggestions:
 - 1) The usual problem is intestinal gas. Eating the correct development diet helps this problem, as can taking more GB-3 or ox bile and pancreatin. Before doing the enema, lying down and pulling the knees tightly up to the chest may help expel gas. Occasionally, someone needs to take some hydrochloric acid and pepsin to assist digestion.
 - 2) The water may be too hot or too cold. Be sure the water temperature feels comfortable as it enters the colon. It should be around 98° F.
 - 3) It may help to place a small pillow or rolled up towel under your buttocks so the water flows downhill into your colon.
 - 4) Be patient. Practice makes perfect. If you still have difficulty retaining the enema, leave

the enema tip inside you the whole time so that gas can bubble out through the tube. Use a shoelace to tie the enema tube to your thigh so that it does not fall out.

5) For much more information, read *Coffee Enemas* at www.drlwilson.com.

RED HEAT LAMP-POWERED SAUNA THERAPY

We highly recommend that everyone use a sauna powered by red heat lamps every day. This procedure is excellent to help remove toxic metals, toxic chemicals and many chronic infections. It also relaxes the nervous system, improves circulation, hydration and oxygenation, gently tones the muscles, and has many other subtle benefits as well. The following is an excerpt from *Sauna Therapy* by this author.

Sauna Basics - Types of saunas. Three common types of saunas exist. *Traditional saunas* are basically a room with a heater. These are found at health clubs, spas and sweat lodges. These are not as effective unless you add at least one red heat lamp to them.

Far infrared saunas came into use about 40 years ago. They all emit some damaging electromagnetic frequencies. Also, the frequency range of these units is not the best, in my experience, no matter what the sales people say. For these reasons, we do not recommend them. If you have one, you may be able to add a few reddish heat lamps from the hardware store to convert it into a red heat lamp sauna. You can use the far infrared heaters to heat up your sauna. However, turn off the far infrared emitters before entering the sauna. Never place heat lamps aimed at your head. Always aim them at your chest or abdomen.

Reddish heat lamp-powered saunas are a newer type. Their advantages over far infrared saunas include:

- *They provide frequencies needed for development.*
- *They do not emit additional harmful electromagnetic fields.*
- *One can easily focus the light rays on a part of the body such as the sinuses, the liver, a shoulder or elsewhere.*
- *They offer built-in color therapy that is excellent.*
- *Rotating the body 90° every few minutes moves the blood around the body even more.*
- *The sauna operates at a lower temperature (110-120 F.), so it is more comfortable, requires less pre-heating, and they use about 30% less electricity than a far infrared unit.*

Feedback from hundreds of clients and doctors indicates that this is by far the best sauna for healing. More details and instructions to convert other saunas to a heat lamp sauna are at www.drlwilson.com or in the book, *Sauna Therapy*.

How long and how often. For therapy, one must use a sauna at least three times weekly. For best results, use the sauna daily. Begin with about 15-20 minutes per session and increase up to 40-50 minutes per session for maximum effect. However, increase the time in the sauna only when you are sweating well and can be fairly comfortable in it. Most slow oxidizers can safely use an infrared sauna once or twice daily. NOTE: If one is very debilitated, be sure to begin with sessions of 10 or 15 minutes maximum. As you feel comfortable in the sauna, you may increase the time and the frequency of use.

When beginning, many people overdo either the length of the sessions or the number of sessions. Do not make this mistake. Most adults do not sweat much, at first, and this could cause the body to overheat. Also, unpleasant retracing reactions can occur as toxins are released too quickly. Once the skin functions better and one sweats heavily, reactions are less common.

When to do saunas. While any time of day is okay, the best is *first thing in the morning and/or the last thing before going to bed*. These are the times one is most relaxed and parasympathetic.

Cautions and supervision with saunas. Saunas have been used in one form or another for thousands of years and are generally very safe, even for those who are elderly and ill. However, please observe the following cautions:

- *Always move slowly and carefully in and around a sauna as one can slip and fall.*
- *The presence of a friend or attendant nearby is always best if it can be arranged. This is mandatory if you are quite weak, ill or very heat-sensitive.*
- *Those who have used LSD or other drugs should always have someone else present during sauna use. Removal of drugs taken years ago from tissue storage sites may cause flashbacks. We have not observed this, but it is possible.*
- *If you are pregnant, use a red lamp sauna for only 10 minutes and only on your back.*
- *Avoid saunas for children under the age of five.*
- *All children must be accompanied by an adult.*
- *Continue prescribed medication while taking saunas unless directed otherwise by a doctor.*
- *Check with a health professional if you have a health condition or questions about saunas.*
- **ALWAYS LEAVE ANY SAUNA IF YOU FEEL VERY FAINT, DIZZY OR SICK.** These symptoms do not mean the sauna is harmful for you. It often just means you are not used to it and your body needs to adapt slowly to sweating and removing toxins through the skin.
- *Also leave the sauna at once if body temperature rises more than four degrees, if your pulse increases more than 50% of the resting pulse, or if you stop sweating.*
- *We offer a book entitled **Sauna Therapy** that contains much more information about saunas. Chapters discuss various health conditions, cautions, protocols, how saunas help the body, many testimonials, plans to build a simple sauna and many medical references.*

Basic sauna procedure - before a sauna session. Wait at least one, and preferably two hours after a big meal before a sauna session. Also avoid alcohol or other intoxicating substances. Alcohol or drug use with sauna therapy is a very dangerous combination. The body will try to eliminate all drugs from the body during saunas. Drink at least eight ounces of water before entering a sauna. Spring or carbon-only or sand-filtered water are the only drinking water we suggest. Drinking warm or hot water may assist sweating.

Do not exercise and do not take niacin or mineral drinks or ‘cocktails’ before entering a sauna. Exercise stimulates the sympathetic nervous system, which reduces toxin elimination. High-dose niacin is toxic. Electrolyte drinks are unbalanced, not needed if you eat well, and can upset the delicate mineral balance and thus reduce relaxation, the key to sauna effectiveness.

To replenish minerals lost in sweating, eat a lot of *cooked* vegetables and use sea salt on food. However, do not add salt to your drinking water. Also, we suggest up to six 600 mg capsules of kelp as a food supplement. If kelp makes you jittery, use less at first. Most people can work up to six capsules daily. Avoid using any kind of oils or lotion on your skin before entering an infrared sauna. Oils can become scalding hot and burn your skin.

Preheating the sauna. For best results, preheat a red lamp-powered sauna to 110° to 120° F. Alternatively, you may enter a red heat lamp sauna as soon as you turn it on and you will warm up with the sauna. However, it will not be as powerful a session or you will need to stay in the sauna longer to achieve the same effect.

During a sauna session. Wear at most a bikini in a lamp sauna because the rays must strike the skin. Wipe off sweat with a small towel. You may sit on another small towel and have a third towel on the floor to avoid slipping. Talking or working are not recommended while in a sauna. Relax, breathe deeply, rub your feet and hands and do the pulling down exercise. Listening to music or the radio is also fine. You can also visualize absorbing the heat and energy while breathing deeply and slowly.

Rotating in a near infrared light sauna. In a red lamp sauna, one needs to rotate 90° every few minutes or so to heat the body evenly. The procedure is to sit on a stool or a chair without a back. Face the bulbs. In a few minutes or when you feel the heat starting to burn, turn 90° to the side. In a few minutes, turn another 90°, and so on.

Other cautions. Avoid touching the hot bulbs and staring at the lamps. Also, do not allow water, a towel or clothing to touch the hot bulbs. One will not get a tan in an infrared sauna, though the skin will usually redden for an hour or so afterwards. *Drink* at least eight more ounces of water or more either during or after a sauna session. If the sauna gets too hot, just open the door a little to reduce the temperature.

Finishing Up. After a sauna session, take a quick shower to rinse off toxins. If a shower is not possible, towel off with a damp or dry towel. Do not do cold plunges or cold showers after sauna sessions. They are not necessary and just strain the nervous system. However, a warm or tepid shower is probably better than a very hot shower.

In the shower, ideally use a skin brush or loofa to remove more toxins. Brush all over, even your face and hair if possible. The reason is that toxins will be removed from the head area as well as the rest of the body. It can be a little painful at first, but soon feels wonderful for many people. Use only plain soap and shampoo, and you should need very little, as you should be quite clean after sweating.

After your shower, do not put lotion or cream on your skin. They all contain chemicals toxic to the skin. Do not be fooled by products sold in health food stores. The best policy is to use the fewest and most natural products on your skin and hair. As you continue using the sauna, your skin will tend to recover its natural moisture and elasticity.

Rest. *Be sure to rest sitting or lying down for at least 10 minutes after your shower or after towel drying off.* This will allow the body to reap the full benefit of the sauna experience.

For more details, read *Sauna Therapy* by Dr. Wilson. For more information and a list of those who sell red lamp-powered saunas, visit www.drlwilson.com.

THE PULLING DOWN EXERCISE

We cannot overemphasize the importance of the pulling down exercise. We suggest this exercise, and **only** this one, mainly because development requires it. It has many other benefits, as well, but there is only space here to mention a few of them. This exercise is very grounding and centering. It also greatly enhances the flow of subtle energy through the body and moves subtle energy in the proper direction. It balances the seven physical energy centers of the body, and it gently brings up traumas and heals them. It is also a wonderful discipline for the mind that enhances memory, concentration and focus.

The Procedure: Sit on a straight-backed chair with your feet flat on the floor or lie down on your back without a pillow, making sure your back is straight and your hands and arms are at

your side. Sitting is somewhat preferable if you tend to fall asleep. However, lying down may be most comfortable.

Close your eyes. *Focus on your feet or even better, focus about 30 inches or 15 centimeters below your feet.* Never focus on your head or you will get a headache.

Visualizations. Imagine pulling subtle energy downward. Here are some ways to do this: Imagine turning on a large vacuum cleaner that is below your feet, aimed upward OR imagine standing under a huge waterfall or that you are under a powerful shower. If you are religious, imagine pulling God or Jesus down from heaven into your body - all the way down to your feet. Say and think, "I want more of God, more of God, more of God".

You can also imagine you are lying in a fast-flowing river with your head upstream and feet planted firmly against a rock so you don't wash down the river. The water is crashing through your head and moving to your feet or imagine you are wearing tight boots or tight pants and two friends are trying to pull them off for you, one pulling on each leg. Use whichever visualization works best and switch around to make it fun.

Cautions and pitfalls: Remember, always focus on your feet and not your head. Also, do not add any chants, words, prayers, mantras or breathing techniques to the exercise. Adding anything at all to it will diminish or destroy its effectiveness.

At first, one may become distracted when doing the exercise. This is normal. Just notice that your attention has wandered. Then resume the exercise. You will have to do this thousands of times, especially when you begin. With practice, it becomes easier and easier.

Random and sometimes ugly thoughts or feelings may arise. This is also normal. There is no need to analyze them and do not suppress them. Just observe them calmly and they will eventually pass away. At times, you may need to take an action, such as to apologize to someone. Until you do this, the thought will keep coming up.

Other problems include boredom, the feeling that nothing is happening or that you are doing the exercise incorrectly. These are normal feelings. In truth, as long as you do the exercise with some force, as though it is the first time you are doing it, it always moves you ahead.

Many people find the exercise easiest to do while they do a coffee enema or the vaginal coffee implant (see below). This works very well and also saves time.

After a time, you can learn to do the exercise while walking very slowly on a straight sidewalk, for instance, where there are few cars or other distractions. In this case, you will need to keep your eyes open just enough so you don't trip or hit anything. Eventually, you will find you can do the exercise with eyes open, all of the time.

For more details, read *The Pulling Down Exercise* at www.drlwilson.com. At the top of this article is also a link to an audio version of the exercise that many people like. You can listen or download it free of charge.

VAGINAL COFFEE IMPLANTS OR THE VCI

This is a newer and very powerful procedure for women. (Men can wrap a coffee-soaked cloth around the penis for a somewhat equivalent procedure. However, it seem to be more important for women, and that is the reason for focusing on the women's procedure.)

This simple procedure is clean, safe and easy to do. It will not only clean the vagina. Most importantly, *it will help clear an amazing array of old traumas, molestations, rapes, and*

other experiences involving men, especially husbands and boyfriends. In our experience, all women can benefit from it! Women store a lot of baggage in this area of the body and it is not easy to access or remove. This is the best method we have found to painlessly and effectively heal this area of the body. The other way is the genital bath, described below.

You will be amazed at what comes up for healing and how clean you will feel inside after doing the VCI for several months to several years. It takes that long to retrace old sexual traumas and old relationships. Many women say it is so freeing they cannot get enough of it.

The Procedure:

Prepare the coffee in exactly the same way you prepare it for a coffee enema. You will need about one cup or 1/8 of a liter. (Ideally, do both the enemas and the VCI. They can be done at the same time, if you want to save time. They are different and one is not a substitute for the other.)

Put the coffee in an enema bag or bucket. You can just pour it in but using the enema bag or bucket is easier. Get undressed from the waist down. You can do the VCI in a bathtub and we recommended this at first in case of spills. Later, you will know how much coffee to use and how to position your hips so it stays inside.

Get comfortable in the bathtub or on the floor with a towel underneath you. *You must elevate your hips with a few towels to keep the coffee inside.* Some women lie on a slant board with their legs higher than the head. A few people have an inversion table or backswing and can lie on that with the hips somewhat above the head. The exact angle of the hips that is required to keep the coffee inside varies among women so you will have to experiment.

Pour in the coffee and relax for at least 30 minutes. It is an excellent time to do the pulling down exercise and the VCI will make it much easier to do this important mental exercise. You can also just listen to music, listen to the radio or talk on the telephone.

When at least 30 minutes have passed, hold a towel tightly over the vagina and get up and sit on the toilet to release. If you are in a bathtub, just get up.

A variant - the coffee stuff – . Some women prefer to soak a washrag or similarly-sized piece of absorbant cloth with the coffee solution and then stuff it deep into the vagina. Inserting it can be a little messy, so it is best done in the bathtub or sitting on the toilet.

The extended and superpowerful method. This is very powerful, so beware. Just before bedtime when you are all ready to go to sleep, get a pad and pair of panties ready. Use the coffee stuff method. Then fasten the pad and put on panties over it to hold it. Go to sleep this way for at least 8 hours. A little coffee will leak onto the pad, but it still seems to work fairly well.

When and how often? One can do the VCI any time of the day or night. It will not interfere with sleep unless the coffee is too strong. Most people do the VCI once a day. However, for acute conditions such as an acute vaginal infection, one can repeat the VCI up to 7 or 8 times daily. For best results, one needs to continue doing the VCI for at least a year or longer.

Cautions:

- **Cleanliness.** We have never had a report of the VCI causing an infection. The coffee is sterile because it has been boiled. The enema bag has been cleaned with soap and water.
- **Pregnancy.** In our experience, the VCI is safe during pregnancy.
- **Menstruation.** The VCI is safe during menstruation.
- **Young girls.** The VCI can be used with girls of all ages.

- **Virgins.** Virgins can also benefit from the VCI. Some have vaginal infections and the VCI can also help to clear traumas such as molestation.

THE GENITAL BATH

This is a simple, safe, inexpensive and powerful therapy that can be done in the privacy of your home. It is excellent for both men and women, and is often helpful for bladder, vaginal, penile, pelvic and abdominal conditions such as pelvic inflammatory disease, bladder infections and others.

The procedure: Undress from the waist down. Then sit on the side of a bathtub, facing into the tub. Either splash *cold* water only on the genital area OR use a shower massager to splash cold water on the genital area.

When, how long and how often? One can do a genital bath at any time of the day or night. They are helpful for everyone of all ages. For the best results, especially with infections, do about 6 or 7 of them daily. Spread them out, such as one every hour. One can do genital baths regularly for years if one wishes.

Cautions: The water must be cold. If your “cold” water is not cold, put some in a bucket and add ice cubes and splash the very cold water on yourself.

THE NECK PULL

Our bodies contain thousands of tiny energy channels. They run vertically from the top of the head down to the toes. They are related to the acupuncture meridians. Health depends upon having enough of these channels open and clear so that ether, or subtle energy, flows through them and nourishes all parts of the body.

In most people, subtle energy has the most difficulty flowing through the neck. Injuries and accidents affecting the neck are common. Tension in the neck due to stress or bad posture is also common.

The Procedure. Learn the procedure while lying down on your back with your arms at your sides. (Later, you can do it while sitting or even while standing up.) Do not have a pillow under your head. Your head must be facing straight ahead, not turned to one side. Also, have your legs extended straight down away from the head, and close together.

Begin by breathing in, using toe breathing. This means that you imagine the breath entering your body through your toes.

As you breathe in, move your shoulders downward toward your feet. You can pretend that someone is holding your hands and pulls them straight downward toward your feet.

When your shoulders are as low down on your body as they will go, quickly pull your neck upward from the crown of the head. The crown is a little behind the top of the head.

If you do this correctly, you will hear and feel a slight pop in the neck area. Rarely, the pop can occur in your upper back rather than in your neck. This is all there is to the neck pull. It may sound too simple, but it is very powerful.

The sound and feeling is an opening of the vertebrae in the neck. It is somewhat like “popping” your toes or fingers, which is also helpful. It releases stuck energy in the neck area and helps open many subtle energy channels.

How often and for how long. Repeat this procedure at least 10 times daily. In fact, if you do it gently and sensibly, it cannot be easily overdone and many people can do it many

times, for half an hour or longer each day. This will speed up development more than most other procedures.

Cautions: *Never force anything. This means no fast or jerky motions.* If, at first, your neck won't pop, this is okay. If needed, begin by just gently stretching the neck.. As you feel more comfortable with this, it will be easier to do the neck pull. One might think that popping the neck could do some harm. However, popping the neck in this way seems to have no adverse effects.

THE DOWN EMBRACE

This is an ancient and very powerful method to heal and develop the body. It is rarely taught today, but it works very well. It requires:

- A man and a woman. It will not work with a same-sex couple.
- The couple must embrace, facing each other with their heads and feet aligned.
- They need to embrace for at least an hour. A session can go on for a little more than two hours.
- The couple can take breaks to stretch, change position or even to drink or eat. However, they need to remain within about 10 feet of each other during the breaks for the blending to continue.
- The state of health, age, height or other physical characteristics of the couple do not matter. In fact, the down embrace healing and development method works best with older people.
- Sexual intercourse or undressing are not required. However, insertion of the penis into the vagina causes a somewhat more powerful effect. See below for details.

How it works. The correct positioning of the bodies causes a blending of the energy fields or auras of the two people. This is the key to the procedure. The couple will feel the blending as a tingling sensation that begins after about 5-6 minutes and lasts for about two hours.

The position. The couple can lie down or the woman can sit on the man's lap, facing him. A small meditation bench can be used to keep her weight off his legs.

During the session. The couple can talk, listen to music, or just relax together. For maximum healing effect, they should both do the pulling down exercise during the session.

How often. For maximum healing and development, repeat the procedure several times per week. Doing it more often, such as once daily, provides some other benefits. However, the energetic blending will only occur about three times per week.

Marriage. The down embrace often works best with married couples. However, marriage is not required. In fact, it can be used to heal and develop one's own parent or child, or anyone else, provided one meets the requirements above.

Sexual aspects. If the embrace includes sexual intercourse, it is called down sex. It is much healthier, gentler, and safer for women than ordinary sex. A feature of down sex is that it is not about orgasms. In fact, the man, especially, needs to avoid orgasms because they cause fluid loss and the man will lose his erection. At first, this makes down sex somewhat difficult for men. The assistance of his partner is most helpful for this.

The man's penis must be inserted at least one inch or more inside the vagina for the full effect. There can be little or no motion of the penis to prevent him from having an orgasm.

For more details, read *Down Sex* at www.drlwilson.com.

TWO MORE DEVELOPMENT SHORTCUTS

The down hand movement or hand trance. This consists of moving the hands downward from the head to the feet over the front of the body. The hands do not touch the body. One can do this simple procedure on oneself as often as one wishes.

To do this, one lies down comfortably with legs extended. Then place your hands over your head, a few inches from the body. Move the hands gently directly downward from the head as far as you can toward the feet. When you reach down near the feet as far as you can, move the hands away from the body and return them to the head and repeat the procedure. You can do this as many times as you wish. You will often feel a clearing and balancing of the body that occurs as a result of doing this procedure.

One can also do this procedure with a partner. In this case, one person lies down on a bed or massage table. The other person stands or sits to one side and moves his or her hands from the head to the feet over the body of the other person. Do not touch the other person's body and never move the hands in the other direction. When one reaches the feet, one moves the hands away from the body and returns them to the head to begin again.

The toe trance. This interesting procedure requires a partner whom you trust. One person lies down comfortably on a bed or massage table. The other person gently rubs the tops of the right and the left third or middle toes of the person who is lying down. Within about 5 to 10 minutes, the person lying down will become very relaxed and semi-conscious. When this occurs, healing and development occur much faster. This has nothing to do with hypnosis, which we do not like or recommend.

For more details, read *The Development Trances* and *The Accelerators* at www.drlwilson.com

COMBINING A DEVELOPMENT PROGRAM WITH OTHER THERAPIES

Other therapies that combine well with the development program are gentle chiropractic, foot reflexology, acupressure, acupuncture with needles only, therapeutic and shiatsu massage, Reiki, Rolfing, very gentle yoga, and most non-toxic oxygen therapies such as ozone baths, peroxide baths and ozone air purifiers. See the Resource section in Chapter 49 for more details about recommended ozone units.

Healing methods that interfere with the development program in almost all cases are all bio-identical or synthetic hormone use, all vitamin, minerals and herbal therapies, most juice therapy except 10-12 ounces of carrot juice daily or 1-2 ounces of fresh wheat grass juice twice a week, all raw food and vegetarian regimens, fasts of any kind for more than 1 day, all heavy exercise regimens, ALL HOMEOPATHY (very bad), and almost all drug-based approaches unless a drug is needed for a life-threatening condition. Other therapies to avoid are most fermented foods, fruit diets, diets high in fish, and all energy medicine approaches using kinesiology, electrical machines or other methods.

For details about these methods, read *Fasting, Vegetarianism, Hormone Replacement Therapy, Carrot Juice And Avoiding Other Juices, Raw Foods, Fruit-Eating, Fish-Eating, Smoothies And Blended Meals, Fermented Foods, Homeopathy, Yoga and Energy Medicine* at www.drlwilson.com.

45. RETRACING AND HEALING CRISES

Ray had followed a development program faithfully for a number of years. He also did regular near infrared sauna sessions, coffee enemas and he meditated daily. As a child, he had many ear infections that his ignorant pediatrician had treated with antibiotics, and apparently “cured”. Now, at age 59, Ray was feeling wonderful. His only symptom was dizziness and nausea when using an inversion table, a device that turns the body upside down to relax and stretch the spine.

He called one day because he was very dizzy, nauseous and had vomited when he accidentally put his head back after eating. He had to sleep on his side because lying on his back also caused intense dizziness, as though the world were spinning. In addition, his pillow at night was stained with a fluorescent green substance that seemed to be coming out of his ears. He had very mild pain in his left ear, but the pain was hardly noticeable. Medical tests were normal, but I suspected a retracing or healing reaction of an old inner ear infection. Inner ear problems often cause dizziness.

Ray cut back on his supplements to once per day, and instead took three tablespoons daily of a colloidal silver product containing 15 parts per million of silver. It is best taken about 20-30 minutes away from food or water before and after taking it. Also, he shined a single, red ‘heat lamp’ at the ear for five minutes at a time only, six or seven times daily. The symptoms fluctuated for about two weeks and then went away. A month later, they came back for a few days more, and then disappeared. Ray has had no further problems with his ears for the past two years, and his tendency for dizziness when using an inversion table went away as well.

Retracing is a signature or mark of many deep healing systems. It does not happen much in post-modern medical care, however, or in most of today’s naturopathic and holistic medical care, either. As a result, the concept is poorly understood and often derided.

A BRIEF HISTORY OF RETRACING

Retracing was first described in the Western medical world by Adolf Jarisch (1860-1902) working in Vienna, Austria, and a few years later by Karl Herxheimer (1861-1942), working in Frankfurt, Germany. Both doctors were dermatologists who mainly treated syphilitic lesions of the skin. They noticed that in response to treatment, many patients developed a temporary fever, with perspiration, night sweats, nausea and vomiting. Also, their skin lesions became larger and more inflamed before settling down and healing.

Interestingly, they found that those who had the most extreme reactions healed the best and fastest. Patients might be ill for 2-3 days, but then their lesions resolved. To honor these doctors, retracing reactions are sometimes referred to as Jarisch-Herxheimer reactions, JHRs, Herxheimer reactions, Herx reactions, the Herxheimer effect or the Herxheimer response.

A process and an event. The word retracing refers to both a *process* and to *particular events*. The process is one in which the body passes back through earlier states of body chemistry. At times, it is called *the reversal process* because it is literally a reversal of the decline of one's health. One must literally retrace one's steps as healing occurs. This is quite remarkable if one thinks about it.

The events along the path of deep healing are also called *retracings* or *healing reactions*. Books about chiropractic, homeopathy and nature cure refer to them as *flare-ups*, *crises*, *catharses*, *purification reactions*, *aggravations*, *reversals* or *exacerbations*. These terms are essentially identical in their meaning. They refer to temporary symptoms that occur as one's vitality increases and the body returns to earlier stages of stress and better health. They are most important to understand thoroughly. Two rough analogies may be helpful.

THE PROCESS OF RETRACING

Unloading a canoe. Retracing is somewhat like unloading camping gear from a canoe. As the back packs and sleeping bags are unloaded from the left side, the canoe suddenly tips far to the right. One might have to shift the rest of the load to balance the boat. This is similar to what occurs during a healing reaction. Deep healing 'upsets the boat' and the body reacts with various symptoms. Then it rebalances itself and the symptoms go away until the healing process causes the next upset.

Cleaning up the kitchen. A deeper analogy is cleaning up a dirty kitchen. Following a development program is like calling in a cleaning crew. As they are doing their job:

- *Nests of bugs may become disturbed.* At times, they rush out. The ants might even bite the cleaning crew and cause an infection. The person may develop a high fever, chills, pain and other infection symptoms. However, in almost all cases, they represent minor annoyances that pass quickly.
- *Stinky buckets of old toxic chemicals and toxic metals are uncovered.* The crew must stop their work and bring in a hazardous materials removal team. This is dangerous business and must be done carefully and delicately. The person may suddenly feel sick for a few days to a few weeks until it is over.
- *Old decayed food material is found and must be disposed of safely.* This can cause odors, skin rashes, diarrhea and other symptoms.
- *The crew might uncover a leaking main pipe or artery.* The cleaning crew must vacate and the body must bring in a different crew to carefully repair what could be a health catastrophe called a ruptured aneurysm. The person may feel exhausted, or in some pain or discomfort for a few days or even weeks until the problem is corrected.
- *Occasionally, the cleaning crew may uncover an old diary with descriptions of terrible past traumas, such as physical or sexual abuse from 30 years ago.* Rarely, it can be so horrible the cleaning crew must stop again and the person must process the memories and traumas before cleanup can continue. The person may experience sudden anxiety, depression, crying or intense anger, often without knowing exactly why. A few people may want to quit the

development program altogether, blaming it for “causing” an emotional trauma that they did not know was there, or they just didn’t want to look at. This is the retracing process.

BIOCHEMICAL CAUSES OF RETRACING

- *Toxin elimination.* Toxic metals, toxic chemicals, old medical drug residues, and metabolic waste products may be eliminated. As they leave tissue storage sites, they circulate in the blood on their way toward their final elimination from the body, causing various symptoms. A common one is a discharge that can occur through the skin or at any orifice of the body. A client who had had chemotherapy for Hodgkin’s disease ten years before, reported that she had strange discharges from her ears and her vagina. She said she could taste and smell the drugs, just as when she took them years before. Once the discharge was over, the chronic headaches she had suffered with for 8 years went away and have not returned in 15 years.
- *Decompensation.* As adaptive energy rises, the body no longer needs to adapt and compensate as much. It may suddenly let go of some kind of compensation or adaptation. This often causes a slower or a faster oxidation rate, or a shift in a person’s energy, for example. Often, a retest hair analysis is needed to find out exactly what has taken place and how to rebalance the body.
- *Resolving infections.* Most adults have at least a dozen or more chronic infections, in my experience. These are often deeply buried in one’s sinuses, joints, ears, nervous system, intestines and elsewhere. Few symptoms are usually present, with perhaps just some post-nasal drip, an occasional headache or slight pain. Often there are no symptoms at all. Suddenly pain and fever may occur as the body fights off the infection and resolves it once and for all. In severe infections, several bouts of retracing may be needed to finish the job.
- *Completing healing of old wounds, accidents, injuries and surgical scars.* For example, in a healing reaction I had, pain flared up in my wrist for several days that reminded me of a gymnastic injury I had in high school over 40 years earlier. Then it went away as suddenly as it had started, and has not recurred in many years.
- *Actual remodeling of bone and rebuilding of other tissues.* This may cause many sensations such as sensitive teeth or gums, aches and pains, creaking of joints and many others.

SPECIFIC EXAMPLES OF TOXIN ELIMINATION SYMPTOMS

- *Copper elimination* may cause headaches, rashes on the face, trunk, thighs or elsewhere, spaciness, racing thoughts, insomnia, fatigue or anxiety. Men may feel some testicular pain.
- *Cadmium elimination* can cause intense fatigue, pain over the bones, in the kidney area and in the testicles in men.
- *Mercury elimination* symptoms are quite variable, and, at times, quite unpleasant. They may include fatigue, emotional distress, digestive difficulties and others.
- *Toxic metal eliminations* also cause non-specific symptoms such as a metallic taste, rashes, nausea, vomiting, diarrhea, constipation, insomnia, foul breath or body odor, and dark urine. One might even have blood in the urine or stool if irritation is intense enough.
- *Stored medical or other drugs* may cause a distinct smell or taste as the chemical is released. Also, one often re-experiences the effects of the substance to some degree. For example, the release of stored theophylline or caffeine may cause anxiety or insomnia. Release of a stored beta-blocker or sleeping pills may cause intense fatigue. Release of a stored antibiotic can

cause diarrhea by destroying the intestinal flora. Release of Novocain may cause numbness of the face and jaw. In one case, release of a drug caused almost total, though temporary hair loss as it came out through the scalp and hair. Most medical drugs are stored to some degree.

MEDICAL AND OTHER DRUG DETOXIFICATION

Whenever one ingests or contacts a toxic metal or chemical substance, the body tries hard to get rid of it. In almost all cases, some of the substance is eliminated quickly, but some is also stored in many places in the body where it is liable to do the least damage. As one follows a development program, these chemicals will come out of the body. As this happens, occasionally disconcerting symptoms may arise. A simple protocol for this situation is:

- *Rest much more, and drink more water, but only distilled water.*
- *Stop all nutritional supplements, perhaps even GB-3, for a day or two.*
- *Do a coffee enema or two daily. You may have a colonic irrigation daily instead.*
- *Use a near or far infrared sauna, or even a steam bath if this is all you have available.* However, keep the sessions to 10-15 minutes each, about 3 or 4 sessions daily. Long sauna sessions are not as helpful during healing reactions.
- *Keep the diet very simple, such as one or several cooked vegetables per meal.*

When the reaction passes, then go back on a regular program. It may take a number of these reactions until all of a drug that was used even 20-30 years before is eliminated from the body.

EMOTIONAL, MENTAL AND SPIRITUAL HEALING REACTIONS

Retracing does not just occur on the physical level. It also happens on mental, emotional and even spiritual levels. In order for many people to become well, they must release toxic attitudes, thoughts and feelings that no longer serve them. This is often a key to overall healing. Once one is freed from mental and emotional burdens, physical healing often occurs quickly.

Mental or emotional healing reactions might include an insight about oneself or someone else, a shift in an attitude or perception, or bringing up a long-buried memory of an old trauma. An even deeper healing process might involve restoring your connection with God or the divine. Other identity shifts may occur as well. These shifts may, at times, be quite upsetting and life-changing. Well-known medical intuitive and author Carolyn Myss calls some of these situations 'spiritual madness' because they cause confusion and turmoil.

Spiritual healing. Retracing is an essential aspect of mental and spiritual development. One must essentially retrace and reframe or redo old events and traumas, handling them correctly this time, with patience and calmness. It is like redoing a term paper or a building project where one undoes the faulty parts of the project and redoes them correctly. This is absolutely necessary to build a sound physical and emotional base upon which to grow and develop mentally in the future. Causes of emotional and mental healing reactions include:

- *An emotional shift may be due to a release of a physical toxin or infection.* This may sound odd, but it occurs. Infections can secrete neurotoxins, for example. The release of mercury or copper often causes emotional changes, or perhaps new insights about oneself or others.

- *The release of emotional toxins.* One may suddenly release old ideas or attitudes such as feeling unworthy, unloved, incompetent, stupid, ugly, unfit or unlovable. Others that may be released are fears, worries, anger, resentment, guilt and others. These can be every bit as toxic as pesticides or heavy metals. As these are released, they are often brought to conscious cognition so one feels “worse” for a day or two and then the feeling is gone. At times, the flare-up takes place at night in the form of a terrifying dream, perhaps. Extra sleep and rest may be critical, at times, to allow this processing to occur.
- *Completion Reactions:* Incompletely healed emotional traumas may resolve.
- *Decompensation Reactions:* Some attitudes and behaviors are compensations for early life traumas or even for physical or other imbalances in the body. For example, many women become hardened or ‘tough’ as a result of their need for strength when the body cannot provide it. Others become apathetic due to fatigue, for example. Still others allow their friends or other people to run their lives because they cannot cope well with stress. As health improves, these compensations are no longer needed or appropriate and will drop away.
- *Memories of situations long forgotten may come to mind as the body retraces earlier mineral patterns.* It is as though passing back through an old mineral pattern can remind the body of something in the past that was forgotten.
- *Becoming more yang and more aware.* The body will become more yang, in Chinese terms, as it heals and retraces. This, alone, can bring up memories and traumas for healing.

RETRACING AND HAIR MINERAL ANALYSIS PATTERNS

One may retrace any hair analysis pattern. Retracing is a reversal of the disease process that was discussed in earlier chapters. So, for example, if one began in fast oxidation, went into a bowl pattern, and then into slow oxidation with a calcium shell, this sequence may occur in reverse. This can be confusing for both practitioners and clients. There is no way to tell all the patterns a person has passed through during a lifetime. Therefore, there is no way to predict the exact pattern of retracing and it will be different for each person. Some faith is required, at times, to just keep plugging along as one passes back through old imbalances.

As one retraces, a hair analysis retest may look worse. One may retrace a four lows pattern, perhaps, or a low sodium/potassium ratio. This is not a cause for concern, and usually the patterns pass quickly during retracing.

Many layers of retracing may occur. One might retrace a four lows pattern or a very low sodium/potassium ratio not once, but several times. Trusting the hair analysis readings and the development process at these times can be difficult. However, in my experience with thousands of clients, the patterns are not too important and will pass. Trying to analyze every twist and turn of the reversal process is nearly impossible.

An analogy. The process is like refurbishing a beautiful old mansion that is in disrepair. You never know what you will find as you tear it apart in order to rebuild it properly. One must just keep one’s eye on the goal and just keep moving in that direction. In development, this means keeping the principles of balancing the body uppermost at all times and do not be led astray by odd symptoms. One needs to have faith that, once the old house is restored to its former glory, or even better, the effort will all have been worthwhile. This is, indeed, what our clients report.

DANGERS OF HEALING REACTIONS

Physical dangers. Ninety-five percent of healing reactions are benign. Symptoms such as headaches, sore throats or rashes last for a few hours to a few days and then are over. In another few percent of the cases, symptoms are intense such as a severe pain, blood in the urine, dizziness, vomiting or some other more extreme symptom.

Very rarely, they are dangerous. Dr. Bernard Jensen, ND, DC, one of my early teachers, told of a boy he treated with a large tumor on his spinal cord. During a retracing, the tumor swelled, blocking the nerves on the spine. The boy stopped breathing and died. This is one reason I do not recommend development for cancer. The best approach for cancer, I believe, is to get rid of the tumors first with simple natural means. This is often not that difficult with Protocol or the Kelley metabolic cancer program. Once the cancer is gone, then development will heal the body at much deeper levels. It is one of the few times that a more symptomatic approach is best until the symptoms are under control.

Extreme shoulder pain. One intense case under my care was a 76-year-old man who was doing well on a development program for some 5 years. He had a small cancer that had gone away, his energy had returned and he was healthier than he had been in years. Suddenly, he developed a deep cough and green sputum, and an extremely painful and almost immobile shoulder. A chest x-ray showed nothing at all, while an x-ray of the shoulder seemed to show arthritis. His medical doctor informed him he would need surgery for this, which caused him great discouragement.

For the lung or bronchial retracing, I had him take colloidal silver by mouth and inhale it into his lungs. For the frozen shoulder, I suggested working with an excellent chiropractor. Within three months, both symptoms had almost vanished and surgery was not needed. This case emphasizes the importance of supportive therapy in some cases.

Reversing an old neck injury. Another severe reaction occurred recently in a 60-year-old client who retraced a severe neck injury from a car accident 30 years before. I was not even aware of the injury, as he had never mentioned it. He had been paralyzed for a time after the accident. After a few years on a development program, he began to develop symptoms of paralysis again, such as weakness, tingling and numbness in his legs. He had a fall and was hospitalized. X-rays showed neck damage and he was told he would need spinal surgery or he could die. Fortunately, he did not have medical insurance, and instead decided to continue his nutritional program. I made sure he drank 10-12 ounces of carrot juice every day for high quality calcium. Gentle massage of the neck seemed to help. Shining a single red heat lamp on the area several times daily was also helpful. Much to the doctor's surprise, he quickly stabilized and began to improve.

A case that ended badly was that of a 78-year-old gentleman with a diagnosis of multiple myeloma, a difficult type of cancer to treat because it is in the bones. He was given about six months to live and sent home to die. I do not usually work with cancer, but made an exception in his case. He responded beautifully on a simple nutritional program with two saunas daily and coffee enemas daily as well. However, he decided to have full-body radiation therapy recommended by the Mayo Clinic. I advised him that I would not do this if I were in his position.

About a year and half into his healing program, he developed some kidney failure. Perhaps I should have warned the family more vigorously about the dangers of medical treatment at such a time and at his advanced age. The family put him in the hospital where he was given a

lot of morphine and other drugs. The drugs clearly were very toxic for him, as he was following an extremely pure and clean diet. He lost consciousness and died in a few days.

I don't know if this client could have passed through the crisis, which I believe was just a breakdown of too much tumor material at one time. Perhaps, I was not alert enough to warn the family, and the family may have been too quick to move him into the hospital.

Emotional dangers. Very rarely, a new awareness or retracing of an old mental trauma makes a client so depressed, angry or unhappy that he or she decides to quit the healing program. The best way to prevent this is to warn clients that these episodes might rarely occur, and are not an indication of a problem. Also, practitioners need to be available in person or by telephone to offer guidance and reassurance. They should stay in close touch with the client until the reaction passes. Even doing all of this, however, some clients will abandon their healing program if a powerful reaction occurs. It is too scary for some people, even though such reactions are almost always welcome signs of deep healing in the body and the mind.

WHEN ARE NEW SYMPTOMS RETRACING AND WHEN ARE THEY EVIDENCE OF A WORSENING OF A CONDITION?

While it takes some practice, this is often fairly easy to assess by asking a few questions:

- *Most importantly, was the development program followed perfectly?* This includes following the diet, getting plenty of rest, drinking enough of the right kind of drinking water, and taking the nutritional supplements. If the answer is yes, the event or crisis is most likely a retracing. The only exception is if a person is extremely ill, since in that case the program may not be enough to turn around a terminal illness, for example.

If the person was not following the development program, then a worsening of health is much more likely. For example, a reaction on an herbal program or a random vitamin regimen can easily be due to unbalancing the body in some way. Answering the following questions may also help to figure out the nature of a symptom or flare-up:

- *Was the person feeling better before the reaction occurred?* If so, it is somewhat more likely to be a retracing. This is because healing reactions require energy. Often, a person's energy level increases until it is sufficient to initiate a reaction. For this reason, healing or purification processes often occur just when a person is feeling stronger.
- *Has the symptom occurred in the past?* Old symptoms or conditions recur during some healing reactions. If one experienced the symptom in the past, the reaction is more likely, though not always, due to healing. The person must also be following a development program. Otherwise, it could just be a relapse of an old condition.
- *Are symptoms unusual?* Healing reactions often produce odd symptom pictures. For example, a person might develop a sore throat or flu without fatigue or a very unusual diarrhea, for example.

Beware of 'healing reactions' on other programs. I experienced various reactions on a raw food, vegetarian regimen many years ago. I was told they were retracings when they were not. I deeply regret staying on this program a few years longer for this reason when, in fact, it damaged my health severely.

HANDLING PHYSICAL HEALING REACTIONS

Basic support for most physical retracing reactions includes:

- **Rest lying down as much as possible.** Conserve energy for healing. Reduce mental as well as physical activity, and reduce all stress as much as possible.
- **Eat lightly.** Digestion is an extra stress during healing reactions. If you are very uncomfortable, skip a meal. You may notice that symptoms subside after eating a meal. The meal is not making the symptom better. Energy must be diverted from healing to digest the meal, so symptoms temporarily diminish while one digests.
- **Drink extra *distilled* water during healing reactions.** Most people don't drink enough water at any time. However, it is especially important during healing reactions. Distilled water helps rid the body of certain toxins, so it often works well at these times. Also, increasing the amount up to four quarts a day may also speed up the healing.
- **Stop your supplement program temporarily.** Most supplements are not needed or helpful during most acute healing reactions. If you are eating, however, continue with your digestive aid. Later in this chapter are specific supplement recommendations for various symptoms.
- **Shorter sauna sessions are often better during healing reactions.** About three to six short sauna sessions of about 10-15 minutes each are often better than one or two long sessions during a retracing reaction. An exception is with very chronic symptoms. In this case, the longer sessions are fine and probably move the process along faster. Once in a great while it is necessary to stop the saunas because they may flare up certain symptoms.

Experimenting to see how you feel is necessary at times. Many bacteria and viruses are heat-sensitive. Using saunas or hot baths will help heal many infections. In some cases, saunas may tire out the body and are not as helpful.

- **Other supportive therapies.** Gentle chiropractic, coffee enemas, colonic irrigation, massage, energetic healing, foot reflexology, acupressure and other support may be extremely helpful, or even necessary at times to get through a difficult healing reaction. Repeat supportive measures often until symptoms subside.
- **Always call someone familiar with healing reactions if you are unsure what to do.** However, use caution discussing healing reactions with doctors or others unfamiliar with them. Healing symptoms can easily be misinterpreted as illness. Unless the doctor, friend or family member understands them well, costly tests and toxic medication may be recommended. Medication can complicate reactions and is rarely effective because the body usually wants to move through the reaction as fast as possible.

By following the guidelines above, most reactions will pass easily and quickly.

Case history - cocaine. *Joann, age 45, had used cocaine and other hard drugs some years earlier in her life. On her development program she suddenly became extremely agitated. Mild coffee enemas helped so much she said they "saved my life". Several practitioners of jin shin jyutsu also literally took turns and treated her almost 24 hours a day for two days. The reaction passed and she has been fine for 20 years afterwards.*

SPECIFIC SUPPORTIVE MEASURES

Handling flare-ups of infections. *Never ignore any infection! Always consult someone*

knowledgeable if any infection persists for more than a few days, as it might be a worsening of a health condition. Always eat lightly and rest a lot more. Drink plenty of distilled or spring water. A mild fever is not a problem. Do not lower a fever with drugs unless it reaches 103 to 104 °F, or if other serious symptoms occur such as a febrile seizure.

To reduce a high fever, preferably use natural methods such as coffee enemas, sponging with cool or tepid water, or a tepid bath. Simple, safe remedies for use at home that will usually stop any infection include:

- *Bee propolis*, about 50 drops three times daily of a standardized extract or about three tablets or capsules daily.
- *Sauna therapy*. Sauna sessions can enhance the immune response in many instances and the heat disables many microorganisms. If you have a near infrared electric light sauna, expose the infected area even more to the infrared rays as this may enhance healing.
- *Heat lamp therapy*. Shining a single reddish heat lamp on the thymus gland (the upper chest) for 15 minutes every hour is a very safe, very effective and simple remedy. Single heat lamp therapy can also be used effectively, at times, on the site of the infection such as the sinuses, the throat, or an ear. However, do not shine the light anywhere near the head area for more than five minutes at a time about once an hour.
- *Colloidal silver*. A good-quality product can help many infections. Avoid homemade colloidal silver as it may be toxic. For most infections, I feel safer using a low potency (5-50 ppm) colloidal silver product only for up to 8 or 9 days at a time, about 2-3 tablespoons per day. You must use less if you take a higher concentration solution of silver. It is also non-irritating so it can be used on the skin, inhaled, a drop placed in an ear, and in other ways. Ideally do not eat or drink for 20 minutes before or after taking colloidal silver for optimum utilization.
- *Coffee enemas or colonic irrigation*. This will also often reduce a fever and promote the natural healing of most infections. Several coffee enemas daily are quite safe if done correctly.
- *Higher-dose vitamins A and C*. Vitamin A, not beta-carotene, can be taken in doses of up to 100,000 iu daily for a week or two. Vitamin C can be taken to bowel tolerance, which is about 10 to 20 grams daily, until an infection subsides.
- *Zinc lozenges may help*. They may be combined with vitamins A and C, echinacea and astragalus, for example, and these herbs can help as well. More toxic herbs such as lomatium may work, but are not as good due to their toxic effects.
- *Dr. Eck suggested a product of his called Limcomin, in doses of about 6-6-6 for adults*. It is a combination with vitamins A and C, zinc, copper, manganese, magnesium and vitamin B6.
- *Foot reflexology*. This can help tremendously in some cases to relax a person and balance energy in the acupuncture meridians.
- *Baths*. A hot bath will disable or kill some pathogens, but not all. Another bath that may help a lot is to place about 2/3 of a cup of 35% food grade hydrogen peroxide in bath water and soak in it for 20 minutes or so. This bath can be done daily during a healing reaction. Otherwise, limit baths to once a week or so due to the toxicity of most bath water. Beware of oral hydrogen peroxide therapy. It is quite irritating to the stomach and less effective. However, it could be used if nothing else is available.

- *MMS or miracle mineral supplement.* This is an inexpensive mixture of chemicals that produces chlorine dioxide, a potent anti-infective agent. Use it only if nothing else works or is available, as it is somewhat toxic. Long-term toxicity is unknown.

Non-home remedies for infections. Antibiotic and anti-viral drugs should never or rarely be used, in my view. They tend to be quite toxic to the liver and remain in the body for years afterwards, weakening a person. The home remedies above work in almost every case. If they are not enough, well-researched hospital or doctor's office alternatives include:

- *Ozone.* Intravenous or rectal administration of ozone *by a well-trained person* can work, but is not for severe hepatitis, perhaps because ozone does not remove iron from the liver, as does vitamin C and development programs.
- *Hydrogen peroxide.* Intravenous or rectal hydrogen peroxide *by someone trained in its use* is superb, but not for hepatitis.
- *Hydrochloric acid.* Intravenous use of hydrochloric acid is excellent and non-toxic if done correctly *by a person who understands its use.*
- *Intravenous vitamin C.* Drs. Frederick Klenner, MD, Robert Cathcart, MD, Thomas Levy, MD and two-time Nobel prize winner Linus Pauling, PhD have all done extensive research indicating that high-dose, intravenous vitamin C can safely treat and cure most viral infections, including AIDS. It is criminal that this simple, inexpensive vitamin is not used more often in hospitals today, some 20-30 years after its safety and effectiveness has been clearly proven. I would only use it for an acute and serious situation because vitamin C is extremely yin and has other side effects, such as increasing iron absorption and decreasing copper, but it works in a pinch and is quite safe.
- *Ultraviolet blood irradiation.* This can be excellent, done *by someone trained in its use.*

Hydrogen peroxide to disinfect pools and hot tubs. To sanitize pools and hot tubs, this often does a better job than any other chemicals, and is less toxic for the bathers. One must also balance the pH of the pool or hot tub. The tub may not be crystal clear, but it will not spread infection as do all other hot tubs and pools. Ideally, the peroxide level should be about 200 parts per million. One can buy simple dip sticks to measure the peroxide level in the water.

Public swimming pools and hot tubs should be avoided, as they spread many infections that are difficult to heal. Your own hot tub is better if the water is changed often and you are the only one who uses it. However, they all can spread infections.

HANDLING OTHER SYMPTOMS DURING HEALING REACTIONS

For pain in the liver area: Simple, safe remedies are to drink more distilled water or to do a coffee enema or use a castor oil pack on the liver. Shining a single red heat lamp on the area for 15 minutes every hour and taking a little more GB-3 by Endomet Labs may also help. More infrared sauna sessions, foot reflexology, acupressure, or acupuncture needling only may also be useful. An herbal blend of milk thistle, dandelion and perhaps burdock root for a month or two may also help remove toxins and cleanse and rebuild a toxic liver.

For pain in the kidney, bladder and ureters: Drink extra distilled water, up to one quart extra per day. Try shining a single red heat lamp on the low back area for 15 minutes each

hour. Also, Renamide from Endomet Labs can be taken in doses up to 5-5-5 for a few days with no danger. Nettles may also be helpful, up to 20 drops three times/day of a standardized extract.

For Diarrhea: Diarrhea that is not too severe, and is over quickly, is not a problem. For all diarrhea, stop the supplement program and any spicy, raw, or otherwise irritating food until it passes. Drink a lot more water and some vegetable juice or hearty chicken and/or vegetable soup to replace lost fluids. Other nourishing food includes well-cooked rice or oats. Avoid heavy meals and complex food combinations that are harder to digest. Often, this is all that is needed.

For intense diarrhea, taking about six charcoal tablets, three or four times daily may help absorb certain toxins, and is quite safe for a few days. A single red heat lamp aimed at the abdomen may improve circulation and help move a healing process along. Use it for 10-15 minutes at a time, six or seven times daily. Bentonite clay will stop diarrhea caused by certain toxins, but should be used only short-term for emergencies as it is high in aluminum and perhaps high in other toxic metals. As explained earlier in the chapter, colloidal silver or bee propolis can work well for most intestinal infections.

Diarrhea that persists. Diarrhea that persists more than a few days, or is extremely intense, requires more testing. Most often, on development programs, however, it is just an elimination of a poison and it will pass quickly.

For parasitic infections. Many people pass worms and other parasites during development programs. In my view, it is impossible to remove all parasites from the body until a person's vitality has risen high enough and the body is functioning to a point where parasitic organisms can no longer live comfortably. Otherwise, they thrive in diseased intestines and in other organs such as the liver.

Development uses several methods simultaneously to reduce the load of parasites that many people carry. The single most important one is to keep increasing the vitality or adaptive energy level of the body. A very clean diet, a healthful lifestyle free of most international travel, and eating mainly at home can help a lot to reduce exposure to parasites and will slowly rebuild the intestinal tract. Another key aspect is the continuous use of GB-3 from Endomet Laboratories. It is a powerful combination of ox bile, pancreatin, dehydrocholic acid and Russian black radish. Used consistently for a few years, it slowly improves the intestinal lining and makes the body much less hospitable for all types of parasitic organisms. Finally, daily use of the coffee enema will also hasten the fullest cleansing of the liver and the colon.

For certain parasitic infections, a high-quality colloidal silver may work in some cases, used in adequate amount for up to two weeks or even more. More GB-3 may also be helpful. Another helpful low-toxicity product is *Lactobacillus plantarum*. This is available at some health food outlets, and should not be mixed with any other probiotic. It needs to be taken for several months, once daily in the morning about 10 minutes before breakfast on an empty stomach. Slowly increase the dosage from one capsule up to about 5 capsules over a period of a month or so. It is not a natural intestinal flora but it will digest proteinaceous material, unlike all other probiotics I am aware of. Another high-quality probiotic that is useful, at times, is called *Original Bio-K*, also available in health food stores.

Another remedy that occasionally helps is to boil about 14 garlic sections in a cup or two of distilled water and eat as a soup twice daily for several days. One could also use at least 15 garlic capsules daily for several days. Other herbs for parasites can be helpful, but their efficacy

is quite variable in my view. Many are also somewhat toxic, including wormwood, black walnut husks, artemesia, cloves and others. A good herbal remedy is called *Clear*. Prescription drugs for parasites are often even worse in their toxicity and not necessarily very effective.

Lab tests for parasites and intestinal infections. If one follows a development program that slowly rids of the body of all parasites, stool and other parasite tests are rarely, if ever, required. If they are needed, however, beware that ordinary stool exams miss many parasites. The laboratory should ask for two, or preferably three stool samples. The test should be costly if it is done well, as it takes several hours of work. Ideally they should do a bowel contents exam which requires using a laxative to clean out the entire intestine. These are quite costly and rarely even offered. Radionic and electrodermal screening devices may also be used to detect parasites and everything else. However, they, too, may not be accurate for a different reason. Most people have many parasites, and it may be difficult to tell electrically which are causing the most problems.

HANDLING EMOTIONAL HEALING REACTIONS

Old emotions, attitudes and traumas will be brought to the surface of the mind as they are processed and released. This is similar to dusting off an old computer and really examining what it contains so that it can be purged of old programs and data that is no longer true or relevant. During these retracings, scary thoughts and feelings may flood into the mind like an ocean wave at the beach.

When this occurs, do your best to remain calm, somewhat like handling a wave at the beach. Allow yourself, if possible, to just feel the feelings without either suppressing them or becoming caught up in analyzing them too much. In other words, do not resist them, yet in most cases you need not dissect them, either. Relax, and breathe deeply and slowly through the episode. Rubbing the feet can be excellent. Listening to soothing music may help. Take a relaxing walk or perhaps a warm bath with Epsom salts to relax. It may help to visit a chiropractor or other type of body therapist. This will help the feelings to just move through you with the least resistance.

Try to avoid drawing any conclusions about the feelings that arise, such as feeling sorry for yourself or becoming angry. This usually slows their passing. If possible, pretend they are just screenplay or a movie being shown to your mind for a short while. Some people like to think of these feelings like clouds in the sky that will soon pass away, leaving a clear blue sky.

Symptoms are usually about the past. This is an important principle about emotional healing reactions. Believing that the feelings are about the present will often slow or stop healing. For example, many times anger will arise as healing proceeds. Most is from the past and is surfacing now because you are able to process and release it safely and comfortably. Projecting the anger onto someone or something in the present can, in fact, slow down or even entirely stop the retracing process

Expressing feelings. Many of us learned well how to suppress our feelings. As a result, many people are unable to just feel feelings and process them correctly. Some are quite afraid of their own feelings and memories, in fact. If this happens to you, practice allowing yourself to cry, scream or otherwise express feelings. If this is embarrassing, close the bedroom door or sit in a car with the windows closed. However, don't take it out on family members.

Counseling during the retracing process. This can be helpful, at times, provided the counselor understands that on a development program, a person should expect old feelings,

attitudes, memories and even deeply held traumas to arise for processing and release. This is healthy in the extreme, provided, of course, that a person can handle it. If it is too much to handle, then one should take fewer doses of supplements and perhaps slow down the use of sauna therapy or other aspects of the program until such time as one can handle the feelings that arise. To help with this, I would encourage everyone doing development to keep handy a ‘tool kit’ of uplifting, inspiring books, CDs, videos or other items to help keep one centered and grounded during any emotional healing episodes that may occur.

I also suggest working only with counselors who understand retracing and who are what may be called spiritually oriented. This means they understand that the only solution to old traumas is total and complete forgiveness with no exceptions. This is uncommon, however, except perhaps for ministers and pastoral counselors. *In retracing work, analyzing every twist and turn of the mind and each trauma, or placing blame or responsibility for every incident and trauma, is absolutely going in the wrong direction.* That is psychology, but not spirituality.

Spirituality is understanding that forces beyond our complete knowledge cause most traumas. Our development depends upon letting them go as fast as possible by true, deep and complete forgiveness, so that all parties may move on as fast as possible. Any other approach is not helpful in the long run. We are all mentally and emotionally wounded and unless we can forgive ourselves and others completely, we will continue to wound ourselves and others even more. We need to turn it all over to a higher power and let it all go. This does not mean memories and feelings will magically go away overnight. They will not, in most cases. However, by understanding these principles, deciding that you are ready to move on, and that you will no longer allow old feelings to occupy and disturb your thoughts, the memories will slowly fade away. A bright new day will come. You can someday laugh at your past as a kind of bad dream that you were caught up with, perhaps for years, that really no longer matters.

To move emotional reactions through faster: Sauna therapy, especially with a near infrared type of sauna, may help. Other ways are to rest and sleep more, and continuing with your diet, the proper drinking water and your supplement program.

To slow emotional reactions: Vigorous exercise, stopping your supplements for a day or two, or taking lecithin capsules or granules may help. If, when you resume your supplements, the feelings come back, especially more than once, your body chemistry may have changed and you may need a retest hair analysis.

For nervousness and anxiety: Elimination of many types of stored toxins can cause nervousness or anxiety. Most of these feelings pass quickly and require no extra help or adjustments to the program. If a feeling is very intense, quick fixes include the following:

- *Stop the regular supplement program, except increase or add more calcium, magnesium and zinc.* You may also add ICMN at 2-2-2 or up to 4-4-4. This is excellent for some anxieties. For a few days, you may take up to 2500 mg of calcium, 1500 mg of magnesium, 100 mg of zinc and 800 mg of choline, inositol and perhaps also GABA in 24 hours.
- *Calming herbs such as chamomile, valerian, hops, passionflower and others may help.*
- *Calming homeopathics may help. Rescue Remedy is a flower essence that helps some people.*
- *Extra infrared sauna sessions can help calm the sympathetic system.*
- *Mild coffee enemas are often fabulous as they calm the nervous system and remove toxins.*
- *Rest a lot more, stay warm, breathe deeply and try a warm or hot bath with Epsom salts.* This can be very relaxing and can be repeated up to twice daily for a few days.

- *Foot reflexology, massage, acupuncture, using a chi machine, quiet music or a gentle walk may help keep you relaxed until the episode passes.*

I have never needed to suggest tranquilizers or other over-the-counter or prescription drugs for anxiety during a healing reaction. These are less recommended due to their toxic side effects, but occasionally are useful on a temporary basis.

For severe feelings of depression: Stop Paramin and take more Megapan, up to 3-3-3. You may also take more of the B-complex vitamins, such as Hi-B 1-1-1 or even 2-2-2. Also, more adrenal and thyroid glandulars, and kelp may help as well. Reduce them if you begin to feel jittery or anxious. Seek professional guidance if you feel like harming yourself or others.

SOUL RETRIEVAL

A special type of retracing is the return to oneself of souls that have split off due to traumas of many kinds. Here are ways this type of retracing is done:

- Native American healers and other shamans sometimes offer this type of healing.
- Some hypnotherapists may offer it.
- Strengthening and balancing the body with a complete development program definitely causes this process to occur.
- The pushing down mental exercise, also called the observation meditation exercise in this book, causes the process to occur. It is part of all development programs.

ADDENDUM TO THE 2016 EDITION - SOUL SCIENCE

Souls are the basic units of consciousness. They are extremely tiny and crystalline in nature, although they have a somewhat human form and somewhat human organs and tissues. Modern science denies their reality because they cannot be seen with current microscopes. However, texts such as the Old and New Testaments of the Bible mention them again and again. Following is a brief introduction to the subject of souls. For much more on this topic, please read the dozen or so article about souls at WWW.DRLWILSON.COM.

Souls consist of a spark or center, surrounded by a number of tiny bodies. Each human being contains trillions of souls. There is one main soul called the *entity soul*. About six others are essential to control the movement of the body. The rest help operate all of the body systems. The brain contains the most souls. The “wisdom of the body” is really the wisdom of the souls that inhabit and body.

Souls inhabit all life forms, and have a symbiotic relationship with them. That is, all souls require a body, and all plant, animal and human bodies require souls.

Souls can be toxic, and can be depleted of nutrients and water. Development programs will help heal the souls, which is essential for healing the body at deep levels.

46. BUILDING A DEVELOPMENT PRACTICE

Jonathan, age 12, seemed healthy, although he was under stress due to his parent's divorce. When his mother picked him up after school one day, he was distant, distracted, perhaps delirious, agitated and unable to hold a conversation. Alarmed, his mother took him to an emergency room. After performing routine blood and urine tests, no cause could be found and he was referred for an emergency psychiatric evaluation. This, too, produced no diagnosis or even clues as to the cause of the behavior or what to do about it. The mother took her boy home and was planning to take him back to the hospital in a day or two for more tests. At this point, his father, an excellent physician, called me and asked if there were anything I could recommend.

Fortunately, Jonathan had had a hair analysis about 9 months earlier, though he was not following a development program at the time of the emergency. He had been a fast oxidizer, with a low sodium/potassium ratio and several elevated toxic metal levels. The boy's lethargy and inability to communicate made me think his oxidation rate had slowed for some reason and that his copper was now high. This is a common shift that occurs in teenagers and older children under stress. I recommended a metabolic pack for slow oxidizers, extra vitamin C and zinc, and eating more meat to provide many nutrients needed by slow oxidizers and those with copper excess. I also suggested calcium and magnesium, in case these had become biounavailable.

Jonathan responded within hours. The next morning he was 60% better, according to his father, and by the following morning had returned to his old, happy self. He still needed some development, but a mental breakdown of sorts had been cut short quickly and safely, without a need for medication or other medical intervention. I could not have possibly come up with these suggestions unless I knew basic development science. An important aspect of this case is that a fast oxidizer with a low sodium/potassium ratio is a fast-to-slow transition pattern that usually shifts to a slow oxidation rate with high copper.

This chapter answers many questions about setting up and operating a successful practice. Having your own development practice can be enjoyable, provide a good income and is a fabulous service to offer.

Learning and applying business basics is of utmost importance. Business is a skill that some people grasp intuitively and others need to learn. However, it is absolutely essential. Knowing the contents of this chapter will free up your energy to focus on your clients. Ignoring business matters for any reason will often lead to a collapse of your practice, or at least will tie up too much of your time and energy.

THE PILLARS OF SUCCESSFUL BUSINESS

- *A positive intention and style.* For example, an excellent intent is to offer a great service.
- *Good planning and execution.* A business plan is practically mandatory to anticipate needs.
- *Public relations or promotion.* You will need to let the public know you offer a service.
- *Excellent service and professionalism.* This is mainly common sense, but very important.
- *Financial integrity.* You must keep your costs low, charge enough to make a profit, and stay very grounded and realistic as to how conduct your business successfully in this area.
- *Ongoing client education.* This is not essential, but I have found it very helpful for clients.

Let us discuss each of these in more detail. **Intention** is a very important but simple item. Begin with a clear intention to be of service. This helps keep your business moving in the right direction, and often leads to success. It should be evident to your clients that you offer value and service. Too many people think business is about making money or perhaps other things. Making some money is necessary, but is often a result of your correct intention.

Your business style. Each business projects an image or style. Some are more fun and informal. Other are more structured or “medical”. No single style is best and it may depend on your temperament, and even the location of your business. Listen to feedback from others, but don’t assume that if another person thinks you should run your business differently that he or she is always correct. Experiment with styles to find what works for you. In the natural healing area, a more informal style is often best, assuming you are very clear about your procedures.

PROMOTION AND PUBLIC RELATIONS

Obtaining clients is usually the hardest part of running a business. This is why sales people are generally well-paid. However, anyone can learn the following basic principles:

- *Know your product and believe in your work.* This means to read and study development as much as possible. I don’t think you will be disappointed in what you learn.
- *You must be at least somewhat willing to go out into the world and communicate what you are offering.* This is hard for some people, but it is essential when starting a business. Try to find ways that you can enjoy it. Many are described in the section below.
- *Think, look and act your business self.* This is important for business people. Many will judge you by your appearance and speech. It is not always fair, but it is the way things work in the world, so make a good impression. This simply means to dress, act and present yourself professionally. It does not require a tie and jacket or other trappings, unless it is your choice. It means to dress modestly and make sure you are clean and smell good. Also, relax and act as natural as possible, as a lot of promotion is about relaxing with others.
- *Take lessons, if needed, in speech, speaking, dressing well and presenting yourself.* I took such a class early in my career and it was helpful. If dressing well and presenting yourself are not your forte, spend more time on this area of your practice.
- *The best advertising is satisfied customers.* Therefore, treat people well, do a good job and take a genuine interest in your clients.
- *Learn how to answer people’s questions simply and directly.* This will take some practice. You will learn what people respond to the best and how to phrase the benefits of this work. Most people want to know what this program will do for them, and are not interested in

theories, or even in hair mineral analysis, for instance. Do not say “I offer hair analysis”. Say “I offer a nutrition program that heals most ailments naturally, without drugs”.

- *Always be ready to give your sales talk.* Often prospective clients want and need a ‘sales talk’. It gives them confidence and they want to know how you really feel about your work. Without being obnoxious, do not hold back. Be sure to explain all the benefits. There are so many health programs available that you must explain to people why this one is different, safer, more effective and often much less costly. Of course, do not make untrue claims, and never lie or exaggerate. Development is not for everyone, since it requires some discipline and has some cost. However, it works well in most all cases if a person will do the program.
- *Try various promotional methods or test marketing.* Some will work and others will not. Keep doing that which is effective and discontinue any effort that is not working.
- *Keep putting your name and your work out in front of the public.* This is a business principle.
- *Try to have fun with promotion and marketing.* It will go better this way. If you really do not like this or any other aspect of your business, look for someone to help you with it.
- *Beware of spending a lot of money on promotion.* It is rarely necessary. Be especially wary of anyone who tells you that you must spend a lot to make a lot. This is often not true.

Common methods of promotion and publicity. Many promotional methods can be used effectively, depending on your temperament and skills, including the following:

- *Write about your work.* Borrow material from this book, from my website or wherever you like. Please give me credit for authorship if you use direct quotes from my articles. Many towns still have newspapers or online websites where you can write a short piece about your work. Newspapers and some local websites may interview you if you tell them you have a unique service. You might submit articles to magazines, free papers and the newsletters that are placed in shopping bags at health food stores. Mail or email articles to prospective clients. Be sure your name and phone number are displayed prominently so they can follow up easily. Keep all written material simple, clear and concise.
- *Give talks, workshops or seminars on nutritional topics of general interest such as toxic metals, increasing your energy, eliminating depression or others.* Many people are surprised how much fun it can be to give a talk or workshop, once one gets over the initial hesitation. When you give a talk, be sure to bring a sample hair analysis and, if possible, bring along an enthusiastic client who will tell his story in a few minutes and perhaps answer some questions. Also, bring business cards, or even better, hand out copies of a short article or make up a 1-page outline of your talk to hand out with your phone number on it. Also, bring along a pair of scissors and hair envelopes to cut samples after the talk. I usually offer a \$10. or \$15. discount to anyone who would like to get started at once.
- *Join a speakers bureau.* These exist in all cities, often through the Chamber of Commerce. The speakers bureau publishes a book each year that is distributed to hundreds of service clubs, churches and other organizations that hire speakers. The groups will then call you if the topics you offer sound interesting. Other excellent places for talks and workshops on nutrition include churches, libraries, public schools, health food stores, cafes or in your own home or office. I gave talks regularly and usually got a new client each time.
- *To publicize talks, make up simple flyers and post them around town.* Public bulletin boards are found in health food stores, supermarkets, music outlets, libraries, high schools and especially colleges. Make a list so you won’t miss any important places to post notices of

your events. Also, send copies of flyers and press releases to your local newspaper, radio and TV stations, and town websites. Many will announce events free of charge. Even if someone else is arranging for you to speak, it is usually best to do your own advertising for talks that are open to the public.

- *Use gimmicks such as discount coupons, two-for-one consultation offers, family discounts, one-week specials, free 20-minute consultations, raffling off a hair analysis, or others.*
- *Go through the phone book and make a list of all the chiropractors, naturopaths, massage therapists, physical therapists, acupuncturists, yoga studios, body workers, perhaps medical doctors, health food stores, health clubs and spas. If possible, pay them all a short visit and leave your information with them. If possible, do not just speak with a receptionist. Make appointments with the practitioners if you can.*

Offer them a discount if they would like to experience your work. Try to find out if they are looking for someone who offers nutrition or biochemical correction to complement their work. Explain how your work complements and enhances theirs.

- *To help acquaint other natural health practitioners with your work, you may want to pay for a healing session with them, or offer to trade services. It is just a way to get to know them a little and put yourself out in public a little more. However, do not do anything you are uncomfortable with, or that may be unsafe. Also, when trading for services, have the other person pay at least your laboratory and supplement costs so you do not lose money.*
- *Produce a brochure. It need not be fancy or costly, and computers make it quite easy. It is just a way to have something to give out that describes your services quickly and simply. Analytical Research Laboratories also offers a nice, basic brochure you can buy.*
- *Keep in mind that most people could benefit from development, even if they are not 'sick'. So don't be bashful. Talk to people while standing in line at the bank or supermarket if you feel so inclined, and hand out your brochure or flyers. Perhaps invite them for a free 10-minute consultation by phone or in person. You never know who will become a client. It is somewhat of a numbers game. This means that a certain percentage of people you meet will come and see you, so the more people you contact, the better.*
- *Join business networking groups such as the Chamber of Commerce. It may be helpful to join other clubs, churches or organizations of any kind where you can meet and talk with prospective clients.*
- *Attend business mixers, health fairs, state fairs and other public events. Be sure to bring your information to distribute. Business cards alone are less useful, in my view. They often end up in the waste basket and they do not inform enough. An article or flyer is better.*

You may experiment with renting a booth at a state fair or health expo. To save money and have more fun, see if you can share a booth with a friend or colleague who offers a complementary type of service such as a chiropractor or massage therapist.

- *Team up with a friend, a colleague or maybe a family member who knows how to do public relations. Some people have a gift for promotion and may be willing to share their secrets or even design materials and assist you in many ways. You may be able to trade for the services you need.*
- *Team up with others who already have a practice or who want to build one. Sharing an office with them can help build both practices. Preferably this will be someone in a complementary healing art. However, be sure to pick others who have the same goals and high integrity as you do and review all contracts, leases, etc. carefully.*

- *Internet marketing is possible, especially if you plan to offer development by mail.* However, you may need professional guidance to make it work.

PLANNING YOUR BUSINESS

Do a business plan. The basics are to write down your goals clearly, including why you are doing this business and what you want your business to look like in a year, two years and five years. Write down how you would like it to operate. Then list all the expenses. The hardest part is to estimate the income you hope to earn. This will make you think about your fees. Also, estimate how much money you will need to begin and to sustain the business until it is turning a profit. Be sure to include the following in your list of expenses:

- *Office rent and utilities* such as phone, water, gas, electric, internet, cable service, merchant services if you decide to accept credit cards, and others.
- *Repairs and cleaning services.*
- *Capital equipment* such as a desk, chairs, lamps, book cases, computers, copiers, fax machines, answering machine, file cabinets and perhaps others.
- *Office supplies* include paper, ink, envelopes, printing, postage and others.
- *Insurance.* You may need office liability insurance and some people may want malpractice insurance as well. These may not be needed, depending on where and how you work.
- *Taxes* might include sales taxes, property taxes, income taxes and employment taxes if you have employees. I suggest you do not start with employees until your business grows.
- *Wages and benefits.* If you hire people, you must also pay Workman's Compensation, plus your part of Medicare, Social Security and unemployment insurance.
- *Licenses.* Some areas require a business or transaction license, especially if you sell products.
- *Promotion and advertising.*
- *Legal and accounting fees.* These can add up, so think of using paralegals, for example, to set up corporations or membership organizations. These are not often needed at first, however.
- *Education, business travel and others.* These might include commissions, refunds, gasoline, car repair, and business meals.

Your office space is important. Think of various scenarios such as working at home, renting an office or sharing space. If you don't know what these cost, research them by calling around, and looking at offices. Your space must be clean, quiet, safe, comfortable and attractive for you as well as for clients. A home office can work well if your home is set up adequately for it. Check for local ordinances that may prohibit home businesses, and perhaps work this out with the neighbors.

Renting an office is more involved. Preferably begin with something simple to keep your costs down. Don't sign a long lease, at first, in case problems develop. Also, keeping overhead low is a secret of effective businesses. Check the space carefully. Ideally, bring a friend along to view it and approve it with you. Note how you both feel in the space, since you will be spending plenty of time there. For example, I prefer having windows that open and being away from noisy and polluted major streets. Once I rented an office just below a print shop. The fumes drifted into the office and made it miserable. Fortunately, I complained and was able to break the lease. If you plan to have employees or to keep a supplement inventory at the office, be sure there is adequate space for these.

Be wary of sharing space or a business with others. Many shared office situations do not work out due to personality conflicts or other problems. If you wish to move in with others, get all agreements in writing and review the agreements carefully before signing anything. For example, if an office associate agrees to refer clients to you and you are depending on this for your business, be sure to put this in writing. Also include a clause that you can leave the situation if the referrals don't materialize. If possible, have a lawyer friend review all leases and other contracts. Try not to sign a lease for more than a year, at first. Also, do not jump the gun and move in before all contracts and other agreements are clear and in writing. In business, it is always wiser to move ahead cautiously and carefully, keeping in mind *Murphy's law* –“whatever can go wrong, will go wrong”. This does not mean to be negative, just careful. If something does not feel right, hold back and review it carefully, perhaps with a very grounded friend. This is much better than getting into a situation that can waste thousands of dollars.

Employees. It is most helpful to begin by doing all the work in your business. If, however, you can find the right person to help answer phones, clip hair samples, sell products and perhaps do the bookkeeping, this can be a great blessing. Be aware of the following:

- *Employees can involve a lot more cost and paperwork* such as keeping track of their hours, figuring out withholding for Medicare, Social Security and Workman's Compensation, and paying the money to the state and federal governments every month.
- *Employees must be supervised.* A huge mistake some practitioners make is to basically turn over aspects of their practice to an employee without continuous supervision. This simply will not work. Plan on supervising your employees closely.

Once you have a business plan and have found a suitable office, the next steps are to:

- *Make sure you have enough money to carry out start-up and for at least a year of operation, or think about obtaining a business loan.*
- *Obtain furniture and other office equipment.* Often liquidators and used office supply companies can save you thousands of dollars.
- *Obtain any licenses or permits you may need.* Many states require a business or sales tax license if you sell products locally, for example.
- *Establish a separate bank account for your business.* Mixing personal and business activities is illegal, and very confusing and sloppy.
- *Set up a simple, clear ledger system to keep track of money.* This can be on a computer or an old-fashioned paper-based system such as Safeguard. Safeguard or a similar system will save a lot of headaches, especially if your business grows larger.
- *Write down your office procedures.* Preferably write up a *Policies And Procedures Sheet* that you will hand out to your clients. This forces you to decide on fees (to be discussed later), office hours, telephone hours, how and when you want to be paid, supplement discounts and more.
- *Set up your office forms.* The basic ones are: 1) *Intake forms:* a General Information sheet, a Symptom Sheet, and your disclaimer, disclosure and perhaps consent form; 2) receipts or super bills, 3) a Retest Information Form, and 4) others such as diet and lifestyle sheets, enema instructions, or short articles on saunas, adrenal burnout syndrome and other common conditions. My website contains examples of forms practitioners can use or modify.

STRUCTURING CONSULTATIONS

The following is a way to organize your consultations that I have used successfully, although other ways are certainly possible. **The initial visit.** (about 30 minutes):

- The client arrives 10 minutes early to fill out the General Information and Symptom Sheets.
- Have the client sign your disclaimer, disclosure and consent form, which is kept in the file.
- Next, cut the hair sample.
- Sit with the client and review the information sheets briefly to be sure they are filled out correctly and you understand the information. Add important details that may not have been clear or were omitted.
- If you wish, set up the next appointment in about two weeks. I prefer to call the client when the test arrives, however.
- I do not charge a separate fee for this first visit. Instead, I include it in the fee for the hair analysis, which is to be paid on the first visit.
- Some doctors mail a hair testing kit to the client and have the client cut the sample, avoiding the need for the first visit. Just be sure the client fills out your information sheets and signs the disclaimer and disclosure statement so you are protected legally. I also like to be paid for the hair analysis before it is sent to the lab to avoid any possible problems with payment. A problem with allowing clients to cut their own hair is they may do it incorrectly, at times.

The second visit. (about 1 hour or more). This is the main consultation. Some practitioners break it into two visits, which is okay if you prefer it:

- *Spend ten minutes on a quick interpretation of the test.* Explain you will not spend much time on the interpretation as it is far more important to discuss the program. Briefly discuss the major facts such as the energy level, toxic metals, adrenal and thyroid activity, the oxidation rate, the Na/K ratio and perhaps the Ca/Mg ratio if abnormal. If a client has a lot of questions, you could suggest another visit, or suggest clients read a book, an article, or visit my website, **www.drlwilson.com** to read more information.

I like to mark up the client's copy of the test, relate the test to the client's symptoms, and if possible, record the visit on a CD for future reference. The clients enjoy this.

- *Spend about ten minutes on the diet.* Focus on the client's diet and changes you want him to make, rather than just talking generally. Some clients already eat well and this section can take less time. Others require more time to explain how to shop and prepare food, proper eating habits and more. Diet is an important aspect of any development program.

Resources: Simple diet handout sheets are at **www.drlwilson.com**. *Joyful Cooking* by Joy Feldman is an excellent cook book that I endorse, designed for development. You can sell it in your office. Analytical Research Labs also offers the Diet Profile #5 for about \$25.00. It will save time and help with compliance. It is not necessary to order this Profile on every hair analysis as there are only two basic plans at this time, one for fast oxidizers and one for slow oxidizers.

- *Spend about ten minutes explaining the supplement program.* Explain the reason for each supplement briefly, why we use these supplements, how and when to take supplements, the cost, how to obtain them, and other hints such as packing them in baggies or using a vitamin chest. You may keep vitamin chests and small baggies in the office to sell to clients.

- *Spend ten minutes on lifestyle.* Especially emphasize the importance of lots of rest and sleep, and going to bed early. This is the most difficult lifestyle aspect for most people. Then discuss gentle exercise such as walking, and other aspects of lifestyle.
- *Spend about ten minutes on the detoxification procedures.* Explain why the sauna is a fabulous adjunctive therapy. This is often a hard sell due to the initial cost. Perhaps have the free sauna plans in your office and the ***Sauna Therapy*** book to sell. Coffee enemas are also superb for most people. If it seems like too much in one visit, you could wait until the next visit to discuss them. Detoxification procedures are found in Chapter 44 and on my website.
- *Discuss the meditation-observation exercise with those over 20 or so.* It is superb for all adults. It can be critical for some who are under stress or are more spiritually minded.
- *Finishing up.* Always briefly discuss the following:
 - *Medications.* Never tell a client to stop medication or to skip medical tests. You could be held liable for any negative consequences. Have the client work with the prescribing physician to reduce medications. If a person wants to reduce medication and the prescribing doctor won't go along, it is up to the individual. Ideally, if a doctor will not discuss reducing medication, the client should find another doctor. Development programs should not interfere with drug therapy. However, as a person's health improves, less medication is often needed.
 - *Other supplements the client takes.* Discontinue these as soon as possible, with very few exceptions. Almost all are not needed and most will negate or even ruin a development program's effects. Other chapters discuss the reasons for this.
 - *Other therapies.* Chiropractic, bodywork, reflexology, acupressure, massage or acupuncture with needles only, are excellent. Most herbs, vitamins and other therapies must be stopped for best results. Homeopathy is fair, and usually not helpful.
 - *Healing reactions.* The concept of retracing or healing reactions is most important to explain or you may lose clients when a healing reaction occurs.
 - *How and when to contact you to keep in touch.* Be sure you are available by phone or email every day. Most calls will be short and simple. Changes can occur rapidly, so keeping in touch is important.
 - *The next check-in.* Ideally, clients should check in within two weeks of beginning the program. This can be a simple phone call or a simple email. If a client forgets to call you, I suggest you contact the client to check in quickly.
 - *Retesting.* Retests should be done every 3-6 months. I like to do the first retest after three to four months. Subsequent retests may be spread out to six months or even a little longer if 1) the client is fairly healthy, 2) his condition is stable, 3) the oxidation rate is slow, and 4) the person is not in a four lows or four highs pattern. If conditions shift or symptoms flare up, a retest sooner may be needed. In rare cases, a client may ask for more frequent retests for closer monitoring, and this is fine.

Learning to apportion consultation time wisely. With some clients, more time is needed to discuss the diet, while in other cases the lifestyle or the supplement parts of the program will require more time. A quick glance at a person's intake sheets will often give you clues as to where the most time will be needed. At times, a hair analysis may also yield clues.

Follow up visits. A short follow up visit every six to eight weeks, halfway between hair mineral analyses, is excellent, though not always needed. It is a good time to answer any questions, assess progress and review the different aspects of the program. A phone call or even an email exchange might suffice, instead, and be more convenient and less cost for the client. Keeping in touch with clients, I believe, is of utmost importance with development.

Retest visits. When it is time for a retest you will need two shorter appointments. The first is probably 5-10 minutes, and I never charge for this time. The procedure is to have the client show up early and fill out the Retest Form. (A sample form is found at my website). When completed, briefly review the Retest Form, cut the new hair sample, and preferably have the client pay you for the retest analysis and for the retest consultation that will occur when the new test results arrive. You could then schedule the retest consultation in about two weeks or so. Alternatively, you could mail the client a retesting kit with a Retest Form, scale, envelope and instructions, to make this visit unnecessary.

The retest consultation. When the retest results arrive, a half-hour visit or a little longer is most helpful to compare the old and the new tests and explain the new program. The retest visit should cover the same topics as the longer initial consultation, except that instead of ten minutes per topic, about half that much time may suffice to review the changes in the test and redo the program. Once again, some flexibility is needed, as every instance will require somewhat different emphasis. Some clients will do well with diet, but not with the supplements. Others will continue to have lifestyle issues, and so on.

On occasion, clients may not tell the whole truth. One client of mine with agoraphobia (fear of crowds) insisted she was following the program, but was making very slow progress. One day she came in and said she was much better. I asked what she was doing differently and she said "I finally decided to follow the diet you suggested a few years ago". Conclude all visits by mentioning healing reactions, how to stay in touch and the time of the next retest or visit. Other consultations are usually not needed, but may be scheduled if a client requests them. Below is a summary of the items to discuss during a full consultation. You may copy this onto a 3x5 card or sheet to have next to you when you do consultations:

The Consultation Checklist

- *A brief interpretation of the hair mineral analysis.*
- *Explain the oxidation type diet, what kind and how much water to drink, and eating habits.*
- *Explain the nutritional supplement program, with the rationale and how to take supplements.*
- *Explain the lifestyle (rest, sleep schedule, exercise, emotional control, etc.)*
- *Offer the extra detoxification protocols with near infrared saunas and coffee enemas.*
- *Discuss the Roy Masters exercise, and perhaps other stress reduction or relaxation ideas.*
- *Review the medical drugs and supplements the client uses.*
- *Discuss healing reactions, follow up calls or visits, and when and why retesting is critical.*

Remembering retests. Many people need a reminder when it is time for a retest hair analysis. The calendar program on a computer could be used to alert you when to call or email clients for a retest. Also, using the 'signature' function in an email program, you can write a generic retest reminder email to send out when it is time for a retest.

An old fashioned way to remind people of retests is to use a 3x5 card box with dividers in 15-day segments for the entire year. Buy blank, stamped postcards at the post office and have a

simple reminder message printed on one side. When clients come in, ask them to self-address one of the postcards, which you place in the card file during the month when a retest is due. When each 15-day period arrives, just pull all the postcards stored in that section and drop them in the mail. Many doctors and dentists use this method very successfully.

BEDSIDE MANNER / COUNSELING SKILLS

To become a wonderful practitioner requires more than just learning about hair testing and development. One must also learn how to listen deeply and how to communicate effectively with your clients. Most of us are conditioned by the media and the school system to focus on facts, but not on deep communication with others. Some people are naturally good at this, but anyone can learn it. Here are some basic suggestions:

Ask questions. The first key is to ask many questions, and allow the client to speak freely and do most of the talking. Try not to interrupt or even to react much with gestures or facial expressions, even if the information seems unusual. If you must interrupt, preferably do it to ask a short question to direct the conversation, rather than offer advice too quickly, unless you are asked a direct question.

Ask for clarification and feedback often if you are not sure what a person means. With practice, you will come to understand certain common personality types. It requires a kind of dual focus, because one is listening to a specific problem or issue, but also always listening to learn more about the person with the issue. I found that after a few years of doing the Roy Masters exercise, I am able to focus my attention much better on another person.

Often people know their problem and just need a little time to articulate and verbalize it. When problems arise on a program, I have found that sometimes just letting the client describe the issue for ten minutes or so, will allow them to figure out a good answer. Most people do not have someone close at hand with whom to discuss deeper issues. They often have friends and family, but the conversation is often superficial. More unusual concepts such as retracing, vitality, intent, awareness and vampirism are rarely discussed around the dinner table.

Hidden feelings and agendas. I realized after a few years of doing development that often clients come for consultation for reasons other than what they state. A hair test can often help identify these reasons. I found that talking about these reasons with the client often helps healing proceed better. In some cases, clients are only slightly aware of the real issue, which might be stress in a job or relationship, for example, or depression due to low energy.

Hair analysis terms. A hair mineral analysis is helpful not only for the amazing insights it reveals, but also because it brings into the conversation a new set of words like *vitality*, *balance*, *stressors*, *toxins* and what I call *movement patterns*. These are phrases such as *feeling stuck*, *going too fast*, *running on empty*, *collapsing*, *sliding down a slope*, *driving with the brakes on*, *feeling out of control* and others. These may sound like pop psychology terms, but they are often far closer to the ways people really feel than fancy words such as bipolar disorder.

Other helpful facts about a client that may come out in conversation may include:

- *A person's level of self-awareness and intellectual understanding of the body and mind.*
- *The level of integrity and whether a lot of hidden agendas are present.*
- *Religious or spiritual convictions, or attitudes around these subjects.*
- *Understanding of and openness toward natural healing concepts and practices.*

Play different roles. As you get to know a person better, you will also realize that people are in need of differing approaches, depending on the situation. You may see that you can play different roles for another, once you assess the situation and decide which approach is best. Possible roles you may take include:

- *The clinician or teacher.* Here you impart clinical and technical information, perhaps about what to eat or when to go to sleep.
- *The friend and confidant.* This is more about listening and empathizing, without judging. You might relate a very short personal story to put another at ease and assist the person to realize that others have the same problems as they do.
- *The parent or a paternal/maternal figure.* Here you will be firm and tough, perhaps warning a person of the negative effects of eating sugar or going to bed late.
- *The psychologist or therapist.* You may explain the ways of the mind and the emotions, how feelings affect the body, and how attitudes need to be looked at and hopefully changed.
- *The spiritual advisor/pastor/chaplain.* Many people, I have found, really appreciate a spiritual viewpoint on their issue or problem. This is often simple, since all of us are here to learn certain lessons, and to bless others. We are here to forgive others rather than hold grudges and resentments, as the latter tend to make us ill and depressed.
- *The cheerleader.* It is good to celebrate with another when they have done well in some way.
- *Other.* On occasion, I have acted as a marriage counselor, job counselor, or even the comedian for those who cannot seem to lighten up.

A few other procedural skills are:

- *Set up phone or office visits in advance, if at all possible.* Make sure you and the client have the time available and are relaxed.
- *Make sure you understand what a person is saying by reflecting it back and asking for feedback and clarification, if needed.* This sounds simple, and works well.
- *Begin phone calls or meetings gently.* Start with simple questions for a few minutes to ‘break the ice’ and relax both parties. This is less needed if you already know the person.
- *End conversations on an upbeat note, if possible.* Laughter is also very good if you can find something genuinely humorous or silly to mention.
- *If more needs to be said but the meeting time is used up, schedule more time rather than extending a conversation too long.* This is mainly to keep things flowing well and to be respectful of everyone’s time.

HAIR ANALYSIS CAN HELP YOUR COMMUNICATION STYLE

Hair analysis patterns offer clues, at times, as to how to communicate most effectively:

- **Four lows pattern – be brief.** These individuals are often quite driven, intense and in a hurry. Their minds and bodies are keyed up and inflamed in most cases, so just present the facts quickly.
- **Elevated or a hidden high copper – be very clear and positive.** These individuals are often somewhat emotional and perhaps spacey. Many are a little depressed and don’t like

bad news. A few are very analytical, however, and may want more extensive explanations. Schedule another appointment if they use up the time in the initial visit.

- **Calcium shell – write down all important information and record the visit for them, if possible.** These people are often highly intuitive and sensitive, but not fully aware. Speak slowly and positively, and write down important details. I learned to record my visits with them on a CD. Otherwise, I would sometimes receive a phone call later that they could not recall what I had said.
- **Extreme fast oxidizers – be brief and fun.** These include the ADD children and many hyperactive adults as well. They are stressed and perhaps unable to concentrate well. Short visits may be best. Their energy may also be disruptive for you and others. Handling such children, and even some adults is not easy, at times. A practitioner must sometimes be polite, but firm, if a child is disruptive and a parent is not controlling the child's behavior well.
- **Very slow oxidizers – be positive and speak slowly and clearly.** These individuals are somewhat the opposite of the fast oxidizers. They are often tired, depressed, spacey and many feel hopeless. They need lots of compassion and hope, without many negatives or too much detail at first. Some slow oxidizers are also quite defensive, as this is a defensive stress pattern. If you sense this, try not to argue and do your best to move on.
- **Sympathetic dominant pattern – another hurried group.** These people are often tense and 'wound up' much of the time. It is best to keep explanations simple and clear. They are often quite worried and depressed underneath, so keep things very positive, if possible.
- **Bowl pattern – offer options.** Those with a bowl pattern may feel very stuck with no options. So let them know there are ways out of their situation.

FEES FOR DEVELOPMENT SERVICES

With development, you may charge for the following products and services:

- *Hair mineral testing.*
- *Consultations.*
- *Nutritional supplements.*
- *Other products.* These may include selling books, educational CDs, vitamin chests, baggies for vitamins, pill crushers, saunas, meditation CDs, coffee enema kits and perhaps other handy items. The more products you have available in your office, the more complete your service and the more satisfied people will often be.
- *Other services.* These may include helping people set up their kitchens, cooking classes or taking clients shopping at the supermarket or health food outlet. Other are offering workshops or seminars on various aspects of development science. This is an excellent service that can be quite lucrative as well. This book alone provides enough material for dozens of seminars and workshops. You may also do trainings for other health professionals, chefs, school or company nurses, nutritionists and many others.

Set up a simple, clear fee structure. Then carefully track all your income and expenses monthly to make sure your fees are sufficient. While many fee arrangements will work, I have been successful with the following:

- *Offer a free, 10-15 minute introductory consultation by phone or in person to anyone interested in the development program. Many people like to meet you to gain confidence before starting a program, so I highly recommend this.*
- *Charge \$10-30.00 above your cost on each laboratory analysis to cover this cost.*
- *Offer a discount of 10-20% on supplements.*
- *Your hourly rate for consultation time that can vary between \$25-150.00 depending on your experience and how busy you are. Start low to build your clientele.*
- *I do not charge for short follow up phone calls or to respond to short emails.*
- *If the telephone or email time exceeds 15-30 minutes, then charge a consultation fee of \$25-150.00 per hour or more if needed.*
- *I offer family discounts of \$20-30 per couple and even more for children. Family members will usually help each other stay on the program. This benefits everyone. I charge less for children because their hair tests often require less time to review, their programs are simpler, and they require little or no instruction on sauna use, meditation, enemas or lifestyle in most cases. Besides, helping children grow up strong and healthy is very rewarding.*
- *Mark up products about 30 to 50%, enough to make it worthwhile to keep them at the office.*
- *Other personal services such as cooking classes can be charged at hourly rates. If they involve several clients, you can charge less and still make them worthwhile financially.*
- *I often view classes, seminars, webcasts and other events as advertising, so I prefer not to charge much in order to bring in more people.*
- *Your fees can be 'a la carte' or you can offer people a package price that might include the hair analysis, the initial consultations and unlimited short follow up calls or emails. You may need to experiment with this to see what feels and works best for you.*

Nutritional supplement options. These include:

- *Stock nutritional supplements in your office.* This is most convenient for the clients and will help a few clients to actually begin the supplement program. However, it involves more work on your part and requires more space and a storage cabinet.
- *You can order products for the clients.* They can be mailed directly to the client's home.
- *Clients may call and order their products directly from Endomet Labs.* You will be credited for the wholesale price. You can direct the laboratory to give a discount to all your clients. I strongly suggest giving a small discount on the products to build loyalty with clients and to reduce the cost of the programs.

Selling supplements. A few practitioners believe that selling nutritional supplements is a conflict of interest. To a degree, they are correct. However, it is also a valid service, for which a small profit is well-deserved as a result. I explain selling supplements to my clients as a way that I know they are taking the correct products, and ones that I know are safe and effective. The relatively small amount that I earn from their sale allows me to spend more time with them on the telephone or communicating via emails, without needing to charge for my time.

The other alternative is to send clients to health food stores. Problems with this abound, including: 1) no metabolic packs, 2) buying the wrong products, 3) buying brands of products that don't work as well, 4) outrageous cost in some cases, and 5) there is no way for the practitioner to monitor which products the client is taking.

Life itself creates many variables that affect the development programs. For the best results, one needs to reduce the variables or unknowns as much as possible. A simple variable to reduce is wondering if the client is taking products that are appropriate. Over the years, we find we obtain the best results, with the fewest number of pills, and generally the lowest cost by using Endomet products, which are Dr. Eck's formulas created for this program. Chapter 4 discusses other reasons for avoiding certain other products.

FINANCIAL INTEGRITY

Understanding capitalism. Trade or business is about helping others while you help yourself as well. Many people are confused about this today. Adam Smith called this phenomenon the “hidden hand of the marketplace”. He meant that as one just conducts business in a way that generates a profit selfishly, others benefit, as does the society as a whole. This is rarely taught today in high schools or colleges, but it works superbly. It is, in fact, a holistic type of behavioral system that is not that easily understood.

Common attitudes about capitalism are completely incorrect. No system of commerce is half as good as capitalism for producing quality goods and services at low prices, offering many wonderful choices to the public, and rewarding those who work and study the hardest. The capitalist or free market economic system also teaches people to be kind and courteous to others, to deal honestly and fairly, and rewards those who build their skills and satisfy people's real needs. The role of the government in a free market system is only to help maintain an equal playing field for everyone, acting as a referee to help settle disputes that arise such as cases of fraud, negligence, misrepresentation and others.

In contrast, in government-run economic systems, also called command and control, fascism, socialism, or communism, things work differently. A central authority makes most business decisions. In every case, they are not as in touch with the real needs of the people, no matter how hard they try to judge the needs. As a result, many mistakes are made that waste resources and anger the people. Also, in socialist other government-run systems, the authorities take away most of the people's money in taxes and then offer ‘benefits’ of various kinds. However, the government really cannot know what each person needs and wants, so the services are usually much worse and cost much more due to bureaucratic costs and terrible corruption that always accompanies a powerful central government. Such systems, common in most of the world, tend to make people dependent, lazy, angry, and they must learn how to game the system to meet their needs.

The following are some basic principles of financial integrity:

- **Charge adequately for your services.** Otherwise you are not likely to be in business for long. You will likely ‘burn out’ from working with no financial reward.
- **Be clear and “up front” about your fees with everyone.** Preferably, write down all your fees on a *Policies And Procedures* sheet for this reason. No one likes financial surprises.
- **Be sure people can afford the program before they begin, by being clear about all costs.** To reduce the cost, clients may take supplements only twice daily, or even once daily to save money, although this will likely slow the healing process.
- **Insist that people pay you.** Do not become lax about collecting your fees or some people will take advantage. This creates embarrassing problems. It is human nature to try to get something for nothing, and too many people have the handout or entitlement mentality today.

If someone does not pay on time, it is fine to say to the person that you cannot work with them until payment is received. At times, the wealthiest people complain the most about money, while they plan a European vacation or a million-dollar home remodeling project.

- **It is fine to help people financially as long as all parties are in agreement and comfortable with it.** For instance, you may assist regular clients by taking a check that is post-dated a week or even two, or perhaps accepting your fees in two or three payments. Giving someone a discount is also okay, providing you do not feel resentful about it. One must make a certain commitment, so giving the program away often does not work well.
- **Financial hardship cases.** If a person calls and cannot afford a hair analysis, here are several options: 1) You can simply say you are sorry, and that perhaps funds will be found in the future. 2) You may also mail, fax or email the article from www.drlwilson.com entitled *The Healing Lifestyle* or perhaps some pages from the beginning of this book. These outline the program, much of which costs almost nothing such as a better diet, better drinking water, more rest, and a few supplements everyone requires.

A third option is to make an effort to assist. It is a blessing to help those less fortunate, providing you stay in business to help everyone. I have always done this and am happy about it. Sometimes it works out and other times it does not. One must stay grounded for it to work. If possible, avoid feeling sorry for anyone. You may offer discounts, offer a trade or perhaps speak with one of your wealthier clients and ask if he or she would be willing to pay for a few extra bottles of supplements this month to help another. You may be surprised at the positive responses. Churches, civic organizations, friends of yours or of the clients may also be willing to help out. This is the way people have assisted each other for centuries in a never-ending cycle of kindness and goodness.

OTHER HINTS FOR A MORE EFFECTIVE PRACTICE

Keeping clients happy. When working with anyone, you are not just in a healer-client relationship, but also in a business relationship. This aspect of your work needs to flow well or the client may go elsewhere. You may need to bend a little, at times, to accommodate clients. This is not all bad, as it can teach you flexibility and humility. Just be sure you do not compromise your principles or your business, or jeopardize yourself legally or in any other way.

It is often far easier to keep a client than it is to try to replace him. This is another business principle and a reason to be flexible and treat clients well. Some people are much harder to deal with than others, but can still make good clients.

Do not work with clients who are rude, who threaten you in any way, who will not pay their bills, or who won't play by your rules. Doing business is a legal contract. You agree to do certain things and the client must also agree to follow your rules. If this is not done, politely ask the person to consult someone else. This is vital to maintain your peace of mind and your business.

Educate your clients. There is so much new, different and perhaps confusing about development that continuing to educate your clients is helpful and even necessary, at times, to maintain and grow your clientele. A few simple ways to do this include:

- *Offer regular talks or workshops for your clients.* Topics may include common health issues such as fatigue or depression, or aspects of the program such as diet, lifestyle, hair analysis or sauna therapy. Encourage clients to attend these sessions, and to bring along family and

friends. This can help with compliance, builds community among your clients and can help attract new clients as well.

- *Send out a monthly email newsletter.* It can be as simple as reprinting an article from my website or the ARL website that would be of general interest. You may wish to have a stack of paper copies available in your office as well.
- *Call clients on the telephone now and then to just check in with them.* They usually love this idea, I have found. Very few doctors or nutritionists take the time to do this. These can be short calls that just let your clients know you are thinking about them. An assistant can even make these calls for you, and let you know who may need more attention.
- *Keep educational materials in your office to be read, or to loan or sell to clients.* These might include books, CDs, the Healthview Newsletter interview with Dr. Eck, and others.
- *If you participate in events such as having a booth at a fair, or giving a public talk, be sure to invite all your clients to these events.*
- *Use the **Introductory Consultation** compact disc program.* After working with thousands of people, I realized I could record a CD with basic information on it for clients that would save me time, money and energy. It contains basic knowledge about diet, supplements, shopping, food preparation, toxic metals and all about hair mineral analysis.

I currently offer this CD program for \$9.00 plus shipping, and less if you buy five or more at once. These can be given or lent to clients on their first visit to provide basic information. It also becomes a sales tool, as they may share it with family members and friends. Alternatively, record your own CD to introduce people to development science.

47.

LEGAL ASPECTS OF A NUTRITIONAL CONSULTING PRACTICE

*Melvin, age 64, had been an inspector at a Ford Motor plant where he was exposed to asbestos and other toxins. He had cervical and lumbar pain, with numbness in the right toes, left fingers and neck area. He also had muscle pain, muscle weakness, sweet cravings, gum disease and ringing in one ear. He did not sleep well, but ate an excellent diet and took many nutritional supplements based on Dr. Williams' newsletter, **Alternatives For The Health Conscious Individual**. This is a good basic health newsletter.*

Melvin's first hair test showed a four lows pattern with normal sodium/potassium and calcium/magnesium ratios. Copper and manganese were somewhat elevated. Phosphorus was very low at 11 mg%, indicating impaired vitality. His toxic metal levels were very high. Lead was 2.77 mg% or about 50 times normal. Cadmium was 0.05 mg%, about five times normal. Aluminum was 1.68 mg% or about ten times normal.

Melvin did very well on a development program. His symptoms began to diminish within a month or so. His second hair test several months later revealed even higher toxic metals. Iron increased to 5.8 mg%, copper increased to 6.4 mg%, manganese doubled to 0.25 mg%, mercury increased seven times to 0.07 mg%, cadmium doubled to 0.10 mg%, aluminum more than tripled to 5.37 mg% and nickel also tripled.

The point of this case is that even a good diet and plenty of quality supplements did not remove Melvin's toxic metals. However, when the diet and supplements were adjusted and balanced so they were exactly what he needed, half a dozen toxic metals were removed in a few months with few side effects, very low cost and excellent safety. Melvin did not even use a sauna, which would likely have caused even more toxic metal elimination in this short time.

Many people hesitate to offer development to others due to legal concerns. This chapter addresses this topic. In my experience, development is extremely safe. However, it is always wise to take legal precautions and to know your rights and responsibilities under the laws of the state and the nation. I faced these issues some years ago and have written a book about them entitled **Legal Guidelines For Unlicensed Practitioners**. This chapter contains a few excerpts from this book.

CHAPTER ORGANIZATION

This chapter discusses:

- Laws that regulate the healing arts.
- The legal structure of your healing practice.

- How your thoughts, words and deeds can protect you from legal problems.
- Record-keeping, and consent, disclosure, disclaimer and other statements.
- What to do if a dispute arises, and legal resources.

LAWS THAT REGULATE THE HEALING ARTS

The types of laws that control the healing arts include the following:

- *The federal Constitution and each state constitution.*
- *The laws of the marketplace.*
- *Basic civil and criminal laws called statutes.*
- *Medical practice acts in each state.* These have been declared legal, according to the doctrine of the *police powers of the state.*

The federal and state constitutions. A *constitution* is a covenant or agreement between the people and their state or federal governments. The United States of America was really the first nation to institutionalize the idea that such an agreement should even exist. Constitutions set down which powers are reserved to the people and which are delegated from the people to the government. The US Constitution has been trampled upon, recently, by people who don't understand it and do not honor it at all levels of government. However, as regards a healing practice, both the federal and state constitutions implicitly or explicitly guarantee:

- *Freedom of speech.* This should mean you can speak freely when you counsel others.
- *Freedom to contract with others.* This means you may enter into agreements with others.
- *Freedom of assembly.* This means you can choose to gather with some people, but not others, if you wish. It also means you will not be arrested for holding a lecture or seminar, for example. It also implies you can hire the people of your choice to work for you.
- *Freedom to work.* This means you don't require government approval to open a business or hold a job. Occupational licenses negate the right or freedom to work.
- *Equal protection under the law.* This means that if a dispute arises or a crime is committed, both parties involved should receive the same treatment under the laws of the state or nation, regardless of a person's color, race, creed, religion or sexual preference.
- *Freedom to fail.* This is not written into the law, but is implied. It is an important part of a capitalist economic system. It means that if your business does not go well, you are allowed to go bankrupt. This concept was also violated recently. The current government recently decided that certain large banks, for example, are too big to fail. So they got special privileges even though they squandered billions of dollars. The federal government also believes that drug-based medical care is too big to fail. So, it, too, receives billions in hidden perks, subsidies, bailouts, grants for research and more.

These rights or freedoms may seem obvious, but they are rare in the world. They are also being violated to an ever greater extent, especially in the area of health care, in part because most people do not appreciate, understand and claim them enough.

The laws of the marketplace. These are the basic laws of economics such as the law of supply and demand. It states that the greater the supply of a good or service, the less will be the

demand for it. This is important to understand so you can know, for example, how much money to charge for your service. Other economic laws become more technical, having to do with why people choose one product or service over another, or decide to do for themselves instead of consulting professionals, for example. These are laws of human behavior. Never forget, however, that your business is subject to the laws of the marketplace, or to people's behavior, even if you don't like it or agree with it.

Basic civil and criminal laws. These are among the oldest and most important statutes or laws passed by federal and state governments. Familiar examples include laws against stealing, negligence, fraud, robbery, murder, misrepresentation and other crimes. These laws complement the constitutional guarantees or rights listed above.

Hate crimes. Unfortunately, newer 'crimes' are not as well thought out and often amount to thought control. Hate crimes imply that it is worse to harm another if you don't like him than if you do like him. This is quite silly in a way, since if one murders another, most likely the person did not like the victim very much. Such laws basically force a jury or judge to read a person's mind at the time of the crime, which is also often impossible, especially since criminals are, by definition, somewhat insane to harm another at all. Yet too many people accept the idea of hate crimes without challenging the concept.

Group rights. This newer legal doctrine negates a basic right of all people to be treated equally under the law. It is part of the *diversity* idea. Group rights give special legal rights to women, blacks, gays or others. Such laws divide the population into legal classifications based upon superficial qualities such as skin color or race. This sets one group against another, and effectively negates a more fundamental concept that each individual must be treated the same regardless of sex, race, skin color, or any other trait. Hate crimes and group rights may seem to be noble. However, they impose a new pecking order that harms the nation, and even hurts the privileged group by not allowing its members to compete fairly with others.

The state medical practice acts. These are specific laws, one in every American state and in other nations as well, that restrict the practice of health care to one small group of healers. The wording of the law is roughly that only licensed allopaths (drug doctors) can "diagnose, prescribe, treat and cure any ailment, physical or mental, real or imaginary. Anyone else who attempts to do this is in violation of the law". This directly negates the right to earn a living, the right to contract freely and other rights as well.

The medical practice acts also directly restrict freedom of speech because they all state that only licensed allopaths may even use the words *diagnose*, *treat*, *prescribe* and *cure* in their work. I hope this sounds insane, because it is. However, it is the law in all states and perhaps in other nations as well.

These laws fall under a newer and very un-American legal doctrine called the *police powers of the state*. This doctrine became popular as part of the progressive movement early in the twentieth century when government power increased at the expense of people's freedom to speak freely, to contract freely and to earn a living. Things have just become worse since then.

The history of medical licensing. A little history is important to understand the licensing laws. They were enacted around 1910-1920 in most states. The legislature was told the reason was to protect the public from quack doctors. However, this was a lie. The laws were just a way for the AMA to eliminate its competition – all of the natural healing arts. There was

never pressure from the public to enact these laws. All pressure was applied by the allopaths or drug doctors and their group, the AMA. This is a historical fact that anyone can check.

In other words, no one was dying due to poor medical care. In fact, America was the healthiest nation in the world at that time. However, the AMA, which represents the drug doctors, wanted to increase the income of its members. The AMA is exactly like a labor union whose sole purpose is to promote the welfare of its members. In their own meeting records, they wrote that in order for their members to make more money, they needed to forbid others from engaging in the healing arts. They worked very hard to have the medical practice acts passed in every state to get rid of their competition. It had nothing at all to do with the quality of care. When the licensing laws were passed, only the allopaths or drug doctors were given licenses to practice healing. The graduates of all the other healing schools were shut out. As a result, literally half the healing schools in America went out of business between 1900 and 1940. Among the schools that shut down were all those that trained women and blacks, as well. The AMA did not want competition from these groups. This is how licensing is used for control.

This history must be clearly understood if America ever wants a sane health care system. Everyone needs to understand that our health care system is a *union-controlled shop* that locks out most competing practitioners, clinics, labs, hospitals, research institutes and more. Like other union-controlled industries, its members do well and the public suffers and that is the underlying plan. Trying to fix it without breaking up the union control is a total waste of time.

Licensing achieves other goals as well, such as protecting the licensed group from too much public scrutiny. Medical boards, for example, are made up of allopathic doctors. This is like putting criminals in charge of the justice system. As a result, modern medicine is now at least the third leading cause of death in America according to the allopaths own statistics. Yet nothing at all is done about it and no one is held accountable as long as doctors follow “accepted practice guidelines” from their licensing boards.

Other goals of licensing. The medical license is also used to:

- Gain employment in hundreds of thousands of medically-related jobs in hospitals, laboratories, research institutes, clinics, health departments, universities and elsewhere.
- Receive literally billions of dollars each year in taxpayer-funded grants, subsidies and other programs.
- Receive reimbursement from government-related health programs such as Medicare, Medicaid, the Veteran’s Administration, the Indian Health Service and almost all private insurance as well. This is extremely unfair because everyone pays into Medicare, for example, but only drug doctors and a few others receive payment from the Medicare fund.

I hope this helps create a clear picture of how the AMA-led medical union, based on licenses, completely controls American health care from top to bottom. This group intentionally destroyed a wonderful health care system that worked well and had given America the best health of any modern nation. Since this is a large subject, a more extensive article about licensing laws is available on my website, www.drlwilson.com.

What about chiropractors, acupuncturists and others? Over the years, a few groups of healers have obtained partial *exemptions* for themselves from the medical practice acts so they are not arrested for practicing medicine without a license. However, the exemption is always

limited. All these healers are forbidden from working in hospitals and remain very much “second-class” in terms of their legal privileges.

Too big to fail. Whenever a cartel or union runs an industry, as is the case with medical care, prices always rise, as this is the secret intent. As this occurs, some start calling for a government bailout, rather than fix the problem, which is union control. The cartel is very happy to go along, no matter what they say publically, because it will entrench them even more firmly. With this sad bit of history clarified, let us discuss how to avoid legal difficulties in a practice.

SETTING UP YOUR PRACTICE LEGALLY

The suggestions here will minimize legal challenges. Such challenges tend to be more likely if you develop a large or very visible practice, if you charge a lot of money, or if you threaten licensed practitioners in your community. If, on the other hand, you remain cordial toward everyone and focus on offering service, you will usually not have problems. Practice options include working:

- *Under another practitioner who is licensed.*
- *Alone or with a group as an unlicensed or licensed practitioner.*
- *Under a specific legal exemption from the medical practice act for nutritional consultants.*
- *Within a private membership organization so you are not working directly with the public.*
- *Under a minister’s or chaplain’s exemption.*

Your choice will depend on your temperament, background and perhaps other factors. Let us discuss the benefits and disadvantages of each of these options.

Option 1. Working with a licensed practitioner. Benefits of this arrangement include:

- *Relative legal safety.* Most of the legal burden is on the licensed practitioner.
- *The perks of licensing.* These can include reimbursement by private insurers and perhaps government programs such as Medicare, Medicaid and others. However, Medicare and Medicaid are paying less and less, and insurance often will not cover development.
- *Professional status.* You can advertise that you work with a licensed doctor. Some people may feel more comfortable with you for this reason.
- *Referrals.* Hopefully the doctor will refer clients to you.

Disadvantages include:

- *Less autonomy.* The licensed person may want to dictate what you can say or do. Also, he or she usually must be present or must sign off or approve all work that you do
- *Less money, perhaps.* In return for allowing you to work under his license, the licensed person may want more of your income.
- *More regulations.* You must follow many rules and regulations that apply only to licensed practitioners such as record-keeping requirements, HIPPA laws and others.
- *More scrutiny in some cases.* Under HIPPA, a blatantly unconstitutional law, there is no health care privacy anymore in America. All records must be shared with some 45 government agencies.

Option 2. Working by yourself. If you are unlicensed then you will work as a consultant or health counselor, perhaps. This option is popular, and is the option I chose. Advantages include:

- *Freedom.* You are free to conduct your practice as you please, provided you do not violate any statutes.
- *More money, perhaps.* You don't have to share your income with another professional who usually has little to do with earning it.
- *Fewer rules and regulations.* You are not under someone else's system of rules for licensed practitioners.
- *Privacy.* Unlicensed practitioners, to my knowledge, are not presently required to share information with the government. Nor are you required to have a National Provider Identification or NPI number, another obnoxious new law for licensed practitioners.

Disadvantages are:

- *Perhaps less prestige.* You will not be working under a licensed doctor, if this matters to you.
- *Possibly more legal risk.* More care may be required in the way you present yourself. You could be accused of practicing medicine if you use words, phrases or practices reserved only for licensed persons. For example, you may not draw blood, give injections and the like. You also must not "diagnose, prescribe, treat or cure" anything.
- *Possibly less insurance coverage.*

Option 3. Operating under a special state exemption for unlicensed practitioners, nutrition consultants or another. California and Minnesota have adopted broad exemptions from their medical practice acts for various unlicensed practitioners. You should check your state law book for such exemptions if you want to operate under this kind of law.

Advantages of this method are you cannot be accused of practicing medicine without a medical license. Possible disadvantages may include rules and regulations as part of the exemption. For example, you may have to register with the state, sign codes of ethics, pay fees, abide by HIPPA laws that effectively negate privacy, keep certain records or other requirements.

Option 4. Forming a private membership organization. With this practice arrangement, anyone who wishes to consult you must first join a private membership organization that you set up. Payments for services are made to the private organization, not to the practitioner. The practitioner works for the group, not for himself, and is paid by the group. If a government agency tries to stop you, they can be sued for interfering with a private contract and violating the First and Fourteenth Amendments.

This option can be wonderful, I am told. The legal rationale for it is that licensing laws are only for those who work with the public. If you are not serving the public, and are working for a private group, you are not as subject to the licensing laws, providing you don't do anything that is blatantly illegal.

Option 5. Invoking or claiming constitutional rights. Some people falsely believe they still have a constitutional right to open a business, earn a living and contract freely with others. However, Americans have allowed these simple guarantees to be destroyed, mostly by the

licensing laws. Therefore, constitutional arguments don't tend to work in court. This is a shame, but it is the truth, so I don't recommend this option.

Option 6. Work as a minister or chaplain. Ministers and chaplains are permitted to offer counseling, teaching and non-invasive natural healing procedures. These include nutrition and lifestyle counseling, patient education, laying on of hands and the use of herbs and natural substances. The validity of ministry status has been upheld all the way to the Supreme Court of the United States. The minister is protected by the First Amendment to the federal Constitution which states:

"Congress shall make no law respecting an establishment of religion or prohibiting the free exercise thereof, or abridging the freedom of speech or of the press, or the right of the people peaceably to assemble and to petition the Government for a redress of grievances."

Most ministry programs are simple ordinations involving signing a few papers and paying a minimal fee. The case that was won at the Supreme Court was a "ministry mill" that just charged a fee and had no other qualifications.

Many such programs are available through churches and other groups. Most are offered by tax-exempt churches. These are churches that have received official tax-exempt status under section 501(c)(3) of the IRS code. This is an interesting trade-off. The church receives a great financial advantage. Donors may give money to the church and receive a tax deduction. In return, the church must file tax forms and report all its income and activities to the government.

Ministers versus chaplains. Some churches also offer a chaplain's program. This is a step beyond and one must be a minister before becoming a chaplain. Chaplain status offers the ability to work freely in prisons and hospitals. One can also set up centers such as the Salvation Army operates around the world, or other types of healing clinics.

Limitations on ministers and chaplains. The main protection ministry status confers is that one cannot be accused of practicing medicine without a license if one's activities are within the scope of a religious functionary.

One may touch another, as in laying on of hands. However, any time a client undresses, a license is usually required, so most massage is not allowed. Ministers and chaplains are also not permitted to perform medical procedures such as drawing blood, puncturing the skin or performing operations. If you are working as a minister, inform clients of your ministerial status. This can be done as part of a disclosure statement. Also, you will still need to be careful with your speech and actions as you are still subject to all civil and criminal laws.

HOW YOUR THOUGHTS, WORDS AND DEEDS CAN PROTECT YOU LEGALLY

Your attitudes can literally protect you from some legal challenges. Also, if a legal problem arises, your intent and perspective can help immensely to resolve it successfully. The following attitudes have served me well.

About life itself. Life is fragile, awesome and mysterious. There is much about it no one understands. All types of practitioners may have some answers, so have respect for all of them. Prudence, caution and deep respect for life are always in order. Cavalier attitudes about life have no place in any type of healing practice. If someone asks a question for which one has no answer, it is best to say "I do not know".

Motives or intent. Helpful motives are to educate, assist and facilitate others' well-being. If money, prestige, power, control, or getting back at the medical establishment is your

motive, legal difficulties are far more likely. Let go of grudges and judgments about other therapies or practitioners. If you don't like a therapy, don't practice it. However, it exists for reasons which we may not understand. When it no longer serves the level of consciousness of patients, it will fade away.

About healers, doctors and therapists. Doctors, therapists, counselors and healers do not heal others. They facilitate, guide, inspire, instruct and offer help along the way. Healing comes from within, often from depths of consciousness of which we know little. A practitioner should feel privileged to be present when healing occurs. The healing power is in the one healed and nowhere else. Humility in this area is most helpful. The opposite attitude, the arrogant idea that somehow one is responsible for another's healing, often leads to disputes and problems.

Healing as a journey. Healing is best seen as a path or journey that everyone is on, no matter what their situation, role, training status or credentials. The path of others is never known fully to us. Therefore, try to withhold judgment and try to love everyone as best as you can. Stick to your own work and do your best to maintain integrity in your sphere of knowledge and action. If you encounter opposition, perhaps there is a lesson to be learned. Try not to wallow in self-pity, fear, anger or resentment when difficulties arise.

To avoid legal difficulties, *really listen* - to one's inner thoughts, to the clients, to legal authorities and to those who would oppose your work. Careful listening not only assists in working with others. It also helps protect you legally.

WORDS TO AVOID. This is critical information. There is no longer freedom of speech in the health care area. The allopaths have written into your state medical practice acts that the words *diagnose*, *treat*, *prescribe* and *cure* may only to be spoken by union members. Amazingly, courts have upheld this crazy and diabolical scheme. They claim that if others were allowed to use them, the public would become confused. The exact opposite is the truth, in my view. This is the worst single aspect in the fraudulent licensing system used to brainwash the American public. It is old-fashioned mind and thought control through manipulation of words. If you are not licensed drug doctor, you *must* use substitutes for these words:

- Instead of *cure*, use the words restore, help, alleviate, improve, correct, balance, heal or normalize.
- Instead of *diagnose*, use the words assess, measure, check, determine or evaluate.
- Instead of *prescribe*, use the words recommend, suggest, advise, propose or offer options.
- Instead of *treat*, use the words handle, work with, relieve, balance, normalize, ameliorate, correct or remedy.
- The word *disease* may also be restricted. Instead, use the words condition, problem, deficiency, excess or imbalance.
- Instead of naming diseases, as is done in the medical paradigm, use simple, descriptive terms. For example, you might say to a client, "I see you have swollen joints", rather than "I see you have arthritis". Arthritis is technically a medical diagnosis.

Other legally protected words. Words like 'naturopath', 'nutritionist', 'counselor', 'chiropractor', 'psychologist' and others also have legal meanings and may only to be used by licensed people in almost all states. Safe words to use to describe yourself and your work if you are not in one of the licensed groups include *health consultant*, *nutrition consultant*, *life coach*, *educator* or *healer*. Using the word 'therapist' is probably safe as well. None of these words are

off limits to the unwashed masses, as far as I know. Of course, you can describe what you offer, such as development, or you can advertise your certification or degree. This might include *naturopathic degree*, for example, or *nutrition certification*. It is all a matter of semantics, but failing to observe the rules will cause trouble.

Other ways to legally use certain words. At times, one can use a restricted word, say on a business card, if one clarifies the meaning. For example, let us say you have a B.S., Ph.D. or even an M.D. degree, but are not licensed. I was advised it would be legal to use the degree after one's name, but place an asterisk afterwards with a note at the bottom of the page or business card stating that one is not licensed in the state.

A friend was recently told by an employer she could not put her degree, Associate of Science, on a company business card. The reason given was that the degree alone does not explain the person's training and could be misleading. She needs to either state what field the degree is in, or leave it off her business card.

An alternative and safe way to describe yourself is to list areas in which you work, such as nutrition, lifestyle coaching, detoxification, meditation or health education. However, you may not use words such as medicine, naturopathy, counseling, chiropractic or psychology unless you are licensed in these professions since these are currently 'legally protected' words.

ACTIONS THAT CAN HELP PREVENT LEGAL PROBLEMS

The following are very important principles to avoid legal problems.

Do not commit fraud. Fraud means deceit, trickery or dishonesty. It includes promising something and not delivering on your promise. In practice, this means *do not make claims for your work* unless you are absolutely 100% sure of what you can do. With development, we never know everything about a person *so never make any claim regarding results*.

Instead, explain to clients that restoring health is an individual matter. It is simple in a few cases and it can take years in others. There are many variables so there can be no guarantees in healing. I tell clients I believe they can be well, but I do not know how much effort it will require. If, after trying development for a while, I see that a person is not improving, I am happy to refer him to others who may offer different approaches.

Too many practitioners are cavalier about this and offhandedly say “I can take care of that problem” or “this is easy to solve”. Avoid all such phrases and instead just say you will do your best. You may also say that others have benefitted with the same problem or that you have seen many benefits from your work. Also, if you tell someone you will call or meet them for an appointment, write it down so you remember to do it. In other words, *always follow through and keep your word about everything*. This will keep you away from most fraud.

Do not misrepresent yourself or your work. This means do not pretend, imagine or say your practice is something it is not. For example, do not make yourself sound like a medical doctor who diagnoses and treats illnesses if you are not a union member. Do not say that you “diagnose”, “treat”, “prescribe for” or “cure” copper toxicity. On a more philosophical level, do not make it sound like you do the healing. The client does the healing and that is all. This is a great secret to staying out of trouble. This concept applies to your thoughts, speech and in all written material such as flyers, stationery, brochures, business cards, handouts, articles, websites, or any books, CDs or other materials you may write or are connected with.

Also, be careful to oversee the speech and actions of secretaries, receptionists, assistants or anyone else who works for you or represents you and your practice. I once received a call from the Arizona Board of Medical Examiners when a friend wrote a promotion for a lecture I gave. He misrepresented me as a licensed medical doctor. I had no idea what the friend had written, but I was still responsible for it. I quickly offered an apology and assured the licensing board that I was unaware of the flyers and they would all be thrown away or changed immediately. That was the end of the problem.

Here again is another rule. ***Never first become defensive concerning a questionable action. First apologize. It costs you absolutely nothing and it takes away the other's anger.*** It opens dialogue and lets them know you are a reasonable person who can be dealt with rationally. That is better than having them send the police after you. Later, you can figure out exactly what happened and how to handle it. Also, I am sure it was helpful that I responded ***immediately*** and made no excuses for the problem. The authorities are less interested in your excuses, as a general rule, and more interested in whether you will take care of the problem.

Do not speak negatively about other practitioners, no matter what they do or fail to do. This can be difficult at times, but is a wise legal idea. Instead, you may say “no comment”, “I do things differently” or something else innocuous. If asked about another practitioner’s advice, avoid judgments like “that sounds crazy”. Instead, say, “If I were in your shoes, I would think carefully about that idea”. You might also say “if it were me, I would not go along with that suggestion”.

Speaking badly of other practitioners often confuses clients and can interfere with the trust a client has for you. In every field, many viewpoints exist. I have more respect for healers and other practitioners who respect the work of others, even when they do not agree with it. Some clients are extremely angry with doctors. They often want to tell me about all the injustices and damage doctors have caused them. They also usually want me to sympathize with them, which I do at one level. However, I usually stop them and remind them that it is fine to feel anger, but then let it go. No one is perfect and most doctors do their best. Getting angry is a choice that can motivate a person to action. However, it is a choice that can waste energy, can destroy the body, and gives away one’s power. The essence of healing is taking back one’s power and taking responsibility for all one’s creations. I have learned that holding anger and spreading it around is rarely helpful for me or for others. It can also cause many legal problems.

Suing doctors. Though I have listened to many medical horror stories, I have never recommended suing another practitioner. I respect everyone’s right to sue, but am not convinced it is a wise idea, in most cases. It uses up a lot of energy, time, and money, often fosters the victim mentality, and may even keep a person sick. After all, if one becomes well it might negatively impact a pending lawsuit.

Also, I do not wish to be sued, so why wish it on another. I recommend an opposite approach. If you think you have been treated poorly, be sure to thank the person whom you believe wronged you and then walk away. Put your energy toward healing yourself, rather than focusing on the faults of others. I know some will say this is an escapist strategy and I just haven’t suffered enough at the hands of doctors. I don’t agree, having watched a close family member die a horrible cancer death in the arms of modern medical care. I think it is just a different perspective about who causes the most harm to us and the importance of forgiveness

deeply felt. This does not mean one should excuse, condone or forget what happened. It means to let go, move on and get your revenge by spreading your own message.

Do not tell clients to stop medication. If you do this, you could be held liable if negative consequences occur. Conventional doctors often become furious with alternative practitioners who tell patients to stop “necessary” medication or that drugs are not needed in a particular situation. At times, the doctors are correct. Suddenly stopping corticosteroids, insulin or even anti-depressants or other drugs can be lethal. Also be careful when considering stopping blood pressure, cardiovascular and anti-seizure medications. Anti-depressants are a tricky area of drug medicine. You may feel they are not needed. However, a very depressed person can easily take his or her own life or commit crimes such as murder.

If you don’t approve of a medication, say, “please read this information about your drug and consider reducing it with your doctor’s approval”. One may also say, “our goal is to reduce your need for medication”. You may explain that medication can be reduced on one's own. However, it must be handled cautiously with full knowledge of all the possible consequences. If you are very concerned about the effects of a medication, call the prescribing physician and politely voice your concern about his patient. Often, physicians are not aware of all of the side effects of all the drugs they prescribe. New side effects are being discovered all the time.

Do not diagnose and do not disparage diagnosis. There are several reasons for this. First, unless you are a licensed allopath you are not permitted to diagnose. Also, development does not involve medical diagnoses, as a rule. Try to stay clear of diagnoses and labeling people. If an insurance company calls and needs a diagnosis from you, use one that a previous doctor gave the client. Otherwise, use something obvious and simple such as fatigue, hypoglycemia or arthritis. Also, be careful with casual speech such as "I think you have cancer," or "I think your child is hyperkinetic." Instead, say, "I think you should rule out a tumor," or "you may wish to have your child tested."

Diagnosis is the realm of the allopathic doctors. For each condition, a valid diagnosis requires a specific test or procedure in most cases. If you suspect a serious health condition and you want a more formal diagnosis, refer the person to someone trained to diagnose it.

Never advise clients to avoid regular medical care. This does not mean that clients should see a medical doctor. However, if a client want to see one, do not discourage it.

Never advise against medical tests. Even if you don’t believe in certain tests and diagnoses, many people feel more comfortable having tests and diagnoses. Once all the information is in, you are in a better position to discuss different methods of correction.

The only possible exception to this rule is if a person wants a dangerous test or procedure. These include angiograms, cardiac catheterization, spinal punctures, liver biopsies, massive amounts of x-rays or some dyes injected into the body such as for intravenous pyelograms and perhaps a few other tests. Cancer biopsies can also aggravate some cancers and spread the disease even more quickly. In all these situations, you may point out the hazards, but I do not suggest making strong statements to discourage a person from having any tests.

As an example, a friend of mine became ill a number of years ago. She consulted an acupuncturist, but she also wanted to go for a blood testing. The acupuncturist, however, talked her out of the blood exam for several months. When my friend finally got a blood test, she was

anemic, and was soon diagnosed with cancer. If my friend had been the litigious type, the acupuncturist would have been in a lot of legal trouble for advising against a simple blood test.

Do not advise development for active cancers. Development is excellent for many conditions, but it is not designed for active cancers. Better programs for this condition are discussed in Chapter 35. Also, more legal problems occur with cancer than with most other conditions.

Be careful about performing medical exams and other procedures usually reserved for licensed doctors. Rules vary in each state for performing various procedures. Drawing blood is not necessary with development, but it usually requires a blood technician's certificate. Instead, if you wish to perform blood tests, you can often set up an account at a local laboratory and refer clients there for tests. Technically, one must be a licensed doctor to do this, but some laboratories are lax about enforcing this insane, AMA-contrived, anti-consumer law.

Having a client undress can definitely cause legal problems unless one is a licensed practitioner. Even then, always have a female nurse or other person present at all times with you if a female client needs to undress. This should not be done with development. Be careful with this, as female undercover police agents can trap natural practitioners by pretending to be clients and insisting they must show you a rash on a private part of the body. It is not necessary to view it and be sure to tell this to the client immediately. Also, some women today are so angry that they will seek out men to sue by claiming sexual harassment of some kind. Sadly, both men and women must become aware of these dangers in a healing practice.

Always deal courteously and promptly with all authorities. You may be contacted by medical boards, the police, the FDA, the IRS, insurers and other authorities. No matter what happens, answer their requests honestly, quickly, and be polite, yet firm and confident. If you accidentally have broken one of their thousands of rules, it is often best to just admit it and say "How shall we fix this?" Give up anger toward them no matter what they do. If unsure how to answer their questions, tell them you will check and be sure to call them back promptly.

This does not mean to become slavish and to bend over backwards to make them happy. Often they are wrong, too. If you believe you are in the right, let them know gently and firmly. If at all possible, call and directly discuss the problem, rather than sit home and fret. Do your homework first, however. Otherwise they may "snow" you with rules and regulations.

The Roy Masters meditation exercise and all his materials about dealing with authority figures is enlightening on this point. Many people view and treat authority figures, at times, the way we viewed our parents when we grew up. We are in fear or anger, and not clear-headed. Try to stay out of this type of thinking. I have watched colleagues get in trouble with the authorities, in large part due to their own anger at their parents and other authority figures.

Often the authorities are just looking to see if you are responsible. If you are, they will leave you alone and bother someone else whom they feel is less responsible. The worst behavior is either 1) to ignore their requests and phone calls or 2) to pick a fight. Either of these means you are projecting your anger and not acting as an adult.

Another rule is not to give out extra information about yourself or your business to bureaucrats and other authorities. Sadly, some are busybodies. They may record your conversation and anything you share can be used against you. The less they know, the better.

Associates and employees often cause the most legal difficulties. For example, guilt by association is very real. If you discover that an associate, office partner, employer or employee is not maintaining high ethical standards, bring it to the person's attention. If the person will not change, it is best to distance yourself from the person or situation, even if it costs you some money and hassles.

Always put partnership and employment agreements in writing. This way if disputes arise, the facts and agreements are clear. Otherwise, whoever is more convincing with a judge might win out in a dispute. Explain to employees and business partners that you want everything written out, not due to fear as much as it is a way to improve communication because you desire a long and successful relationship. Be sure to include a clause in all agreements that either party may end the relationship if one of the parties is found to be conducting business in an unprofessional manner. Contracts should not be in legalese. Simple English is much better.

Employee-employer relationships can occasionally be sources of trouble. Being an employer is like being a parent, especially if you care deeply about your employees. Learning how to work with employees takes practice. Speaking up to employees when needed is hard, at times, but must be done or serious problems tend to occur. All of us make mistakes, and they must be pointed out in a clear, unequivocal fashion without condemnation. Otherwise, mistakes tend to multiply. I have found if one deals with employees fairly, honestly and openly, they will at least respect you and hopefully love you.

If you are secretive and cannot speak openly and honestly, employees will often start to resent you. If that occurs, they can easily ruin your business behind your back. Also, the boss must oversee the employees work. This does not mean to hover over the employee. You can delegate jobs, but you must be there to oversee and check their work. Firing people can be the hardest job. Also, letting them go can easily cause legal difficulties. Be sure to include in an employment contract that either party may give two weeks notice of termination for any reason.

Simple consideration and politeness. A very competent medical colleague has been sued twice because he is insensitive to his patients. Good service, simple kindness, courtesy and consideration will avoid most legal problems with patients.

If a client dies. Several experiences taught me that often legal problems do not come from clients, but may arise from other members of the client's family or friends when, for example, a client dies. This occurred twice in my practice. The clients had come with a terminal illness. I told them I would do my best but couldn't offer much. They were happy with my services, but their loved ones were looking for someone to blame. As soon as I heard from the families, I telephoned them and was able to reassure them the situation had been quite hopeless when I came into the picture, and that I felt very badly that I could not stop the illness.

I mention this because all practitioners should be wary of working with anyone who is very ill. At times, people die suddenly. Those around the patient are upset and vulnerable, and may be advised to look for someone to blame. Development is extremely safe, but no method is perfect, so be careful when working with the elderly or very ill. If possible, get to know their families and make sure the family understands you are doing your best and you care.

Use disclaimers for other services. If you decide to install a sauna, colonic machine or other equipment in your office, I suggest insisting that each person who uses it signs a simple

disclosure and disclaimer statement. It should say that 1) we make no claims for this procedure, 2) it is not intended as prescription, treatment or a cure for any health condition, mental or physical, real or imaginary, 3) while very safe, one uses a sauna or other machine at his own risk, and 4) if you have a medical condition, you may wish to check first with your medical doctor concerning the use of this device or therapy.

Explain all fees and charges clearly and slowly, preferably before starting with a client and in writing. The best idea is to give all clients a sheet with your fees printed clearly right at the start. Also, discuss fees openly and never evade these questions. Also, feel free to discuss fees on the telephone with prospective clients. This is absolutely acceptable. Do not follow the stupid example of many doctors who won't discuss fees over the telephone or email.

Also, keep charges reasonable to avoid legal problems. People can easily check the real cost of tests and other items and are liable to become angry if you are padding the bill. Just because hospitals do it does not make it an acceptable practice. However, it is fine to mark up a hair analysis and other items in a reasonable way.

Beware of fudging when you write up a bill for a client. Sometimes doctors do this to get more insurance coverage, for example. If the person is sharp, he or she could attack you legally for falsifying the bill. An undercover policewoman once came into my office posing as a client. I did everything correctly, except that I referred her to another holistic doctor who fudged her bill because she asked him to do it. She later had him arrested for this.

How much to charge. Sadly, charging too much opens you to legal difficulties. You should be able to charge whatever you wish, but in today's legal climate it becomes another excuse for people to go after you legally. In my experience, charging a lot of money is not necessary to make a good living. Take a cue from Walmart and the other discount stores. They make money because they keep costs low and are efficient, well-run businesses.

Donations instead of fees. A somewhat unusual idea to reduce some liability is to receive compensation by donation or honorarium, rather than charging fees. An honorarium is payment for a service for which custom forbids any price to be set. Healing and related services were often offered on a donation basis in the past.

The concept of the donation is that if a person does not pay your suggested donation or honorarium, you will take no legal action. However, one must be practical about it so you earn enough to stay in business. Also, even if you give away your services for free, you are still responsible for your actions. You can still be taken to court if you harm someone.

Screen your clients. Screening your clients by asking how they heard about you is an excellent idea. Holistic practitioners are more subject to visits by undercover police, medical spies and others who are up to no good. Anyone who asks unusual questions or seems to be fishing for information should be suspect.

In legal terms, visiting a practitioner and going on a healing program involves contract law. Contracts must be entered into voluntarily or it is not a valid contract. If you feel very uncomfortable working with anyone, it is good to just say this and perhaps offer to refer them to someone else. Good reasons you may choose not to work with a person include:

- *Those who even hint or remotely appear to threaten you physically or emotionally.* For example, I have a standing policy that I will not work with anyone who loses his temper with me or with an employee, or otherwise treats me or any employee impolitely or poorly in some other way.
- *Those who do not pay their bill in a timely way.* Owing a little money is okay, but repeated indiscretions or excuses are just irresponsible and not worthy of your time and energy.
- *Anyone who lies about any aspect of the doctor-patient relationship.* This can range from giving a false address or phone number to lying about a health condition.
- *Those who seem like they will sue you or make trouble for you.* For example, once a client proudly told me how she had sued two doctors and how angry she is with health care providers. I decided to refer her to someone else, rather than join her list of people to sue.
- *Perhaps anyone who will not follow the development program.* Some development practitioners tell me they do this because they feel they are wasting their time if a client refuses to follow instructions. This is a case-by-case situation. The only time I have done this is with those who are quite ill. If such individuals are not willing to do what I suggest, the consequences could be catastrophic for them.
- *Anyone who is disruptive in your office.* This might be a very hyperactive child whose mother or father refuses to control the child's behavior. However, it could be someone who is noisy, who bothers other clients or even a client who refuses to bathe or insists on wearing an extremely smelly perfume after being asked not to do so.

Respect the privacy of the doctor-patient relationship. All conversations and information exchanged between practitioner and client is to be kept private unless otherwise agreed upon. Do not give out records or any information about a patient to anyone by any means, without the proper release of records form.

Also, be sure your office is set up properly and kept neat so that private information is not, for example, left sitting on a desk where others can take a peek at it. Computers should also be made secure with passwords and preferably shut down when no one is around, also to protect sensitive client information.

HIPPA. The “privacy act”, also called HIPPA, is the opposite of privacy. It is designed to destroy the privacy of the doctor-patient relationship. If you can avoid HIPPA, I would do so on moral grounds. Unlicensed practitioners need not comply with it, I believe. I am saddened that Americans put up with such disgraceful legislation without much complaint.

RECORD-KEEPING

While records are usually private unless you are part of HIPPA, records may be subpoenaed for a court case if one of your clients, for example, is murdered or is involved in another legal matter. For this and other reasons, have a file for each client that contains::

- *The General Information and Symptoms Sheet, and the signed Disclaimer, Disclosure And Consent Form.*
- *A copy of all hair mineral analyses.*
- *Ideally a copy of all the recommendations you have made.*
- *Client feedback regarding symptom changes and other progress notes.*
- *Other tests the client may have brought in or that the practitioner requested.*

- *Perhaps other information about the client such as payment information or other.*

Other records you will need to maintain include ledgers, checkbooks and other financial information for tax and legal purposes, tax returns and others. Keep all financial and legal records in a secure place in your office or home for at least seven years.

CONSENT, DISCLOSURE, DISCLAIMER AND OTHER STATEMENTS

Certain statements that each client signs and dates are very important legal tools to:

- *Improve communication to produce a better relationship between you and your clients.*
- *Educate clients by clarifying who you are, what you do and other information.*
- *Protect against legal harm from clients and perhaps from authorities as well.*

Some practitioners resist the use of legal forms in their practice. They feel it appears cold and unloving. I would suggest that a short, clear statement is just the opposite. I personally do not like long, legal-sounding forms, although some attorneys suggest these. The attorneys I consulted suggest that in a court of law, simpler statements are likely to hold up better because a client could argue that a long, legal-sounding statement was hard to understand. Let us discuss the major types of statements that will be combined, eventually, into the one you will use.

Consent, or request for services. This can be a simple sentence or two explaining the program. You may want to add more, but I do not think any more is needed. It can prevent anyone from claiming he did not know what service you offer. It might read: “I request that Jane Smith perform a hair mineral analysis and set up a development program for me.”

Disclosure. A disclosure statement tells clients about yourself, such as degrees earned, courses taken and other training or experience. A basic statement is probably best and might read: “I understand that Mike Jones has a degree in psychology from Ohio University and has studied development for five years with Dr. Wilson and his advanced students.” OR “Barbara Smith received her nutrition certification from World College, is certified in development and has over 10 years of experience.”

Disclaimer. This is a simple statement of what you are *not* claiming or *not* intending to do. It lets clients know what and who you are not. It might read: “Development is not intended as diagnosis, prescription, treatment or cure for any disease, mental or physical, real or imaginary.” OR “Robert Smith has a degree in naturopathy but is not licensed in the state of New Jersey.”

These statements can be combined into a single short paragraph by just listing them one after another. The client should sign and date the paper to show they were read and understood. In my office, the paragraph is made part of the General Information sheet to save on paperwork. I consulted several attorneys regarding the value of these statements and was told:

- *They are excellent legal prevention and excellent for patient communication as well.*

- *The simpler and easier they are to understand, the better they will hold up in a court of law.*
- *They also definitely help you appear to authorities be a responsible practitioner.*
- *They do not guarantee avoiding legal difficulties.* Every practitioner is still subject to charges of fraud, negligence, practicing without a license and misrepresentation if you act irresponsibly or if harm is done to someone.

OTHER POSSIBLE LEGAL STATEMENTS

Recommendations disclaimer. This is a disclaimer at the bottom of any sheet on which you write recommendations for clients. I have never used this, and I don't think it is needed. However, some practitioners like it. It does not require a client signature and might read: "These recommendations are for the reduction of stress only. They are not intended as a prescription, treatment or cure for any disease."

Waivers for other office services and procedures such as saunas are discussed above.

Ninth Amendment statement. The Ninth Amendment to the federal Constitution states: "*The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.*" A similar Amendment is also found in all state constitutions. This is the most controversial Amendment to the US federal Constitution. It means that just because a right is not spelled out in the other Amendments or elsewhere, does not mean that it does not exist. It is an affirmation of the doctrine of limited government power and means that all rights not specifically delegated to the federal government are retained by the people. This Amendment was added to the Bill of Rights, which are the first 10 Amendments, at the insistence of the wise founders of America who understood that the government would tend to slowly take away the rights of the people.

You can include a short statement that you endorse and live by the Ninth Amendment, and any effort to stop you from following your conscience in this matter is subject to legal challenge. This is an involved subject that is covered in detail in *Legal Guidelines For Unlicensed Practitioners*. The Ninth Amendment statement is not needed, in my view, so I don't use one, but some practitioners may want one. Also, everyone needs to understand the much-ignored Ninth Amendment to the US Federal Constitution.

ASSET PROTECTION

This is a large area. All healing practitioners are somewhat vulnerable to frivolous lawsuits. If a person has significant assets, it is worth discussing this with a competent lawyer.

IF LEGAL DISPUTES ARISE

Information requests. If you receive a letter or request for information from an attorney or from any governmental authorities, or even insurance companies:

- *Always answer promptly all requests for information.* They may come from the IRS, FDA, insurance companies or licensing boards. For an extra dollar or two you can ask the US Postal Service for *Delivery Confirmation*, *Priority Mail* or even *Certified Mail* to make sure letters arrive in a timely manner.

Ideally, when such a letter arrives, start a file and keep copies of the letter and everything you send them. Also keep the Postal Service slips you receive with delivery confirmation, for example. Make sure everything has a date stamped on it so you cannot be accused of ignoring the request if something is lost in the mail.

- *Licensing boards, in particular, can often overstep their authority.* If a request seems unfair or out of line, you may want to seek legal advice.
- *If you are unsure about the purpose of the letter, or what information is needed, it is fine to call and ask for more details.* But beware that your conversation may be secretly recorded and anything you say can be used against you in court, so do not give out much information about yourself or the issue over the phone.

Handling disputes with patients or employees.

- *Always pay close attention to all legal-sounding letters and phone calls.* Do not ignore them. Try to find out what is going on and the purpose of the letter or phone call. Check your records and do your homework before responding, however. In this way, you can handle many complaints quickly on your own.
- *The exception is a letter from a law firm stating you are being sued.* This will likely require that you consult an attorney or at least a legal professional of some kind.
- *Ignoring a letter or phone call can be taken as meaning you are guilty of whatever you are accused of.* Call people back promptly to let them know you received their complaint. Preferably don't say any more until you have spoken with a legal professional.
- *If the complaint is from a client, before actually discussing a problem do the following:*
 - Check your records carefully so you know all the facts.
 - Read everything in the client's file so you know as much as possible about the person. Some clients who are ill may not think clearly, for instance, and information from the file may help resolve the problem.
 - Visualize the problem from the other person's point of view.
 - Write down for yourself some alternative solutions. For example, in a fee dispute you may be willing to refund money or redo a hair analysis at no charge. These are "bargaining chips" that are far cheaper and better than involving attorneys or a court case.
 - Wait until you are calm and collected to set up a phone call or better, an in-person meeting. Often a quiet, sympathetic phone call or short meeting can clear up a dispute with no further problems and no cost to you. Be sure it is at a time when the other person has the time to talk. If you sense agitation in the other party, you may want to suggest a later time to talk.
- *A superb idea from a legal standpoint is to offer anyone who is very unhappy with your services a refund of all fees paid.* This may sound unfair, and it may be somewhat unfair. However, it is far cheaper than paying lawyers and the hassles of legal problems. Especially when a refund is offered *quickly* when a legal problem arises, it may defuse or stop a possible legal entanglement.
- *A face-to-face meeting can be best if you think you can resolve the problem yourself.* Few people want to hurt another person whom they are with and whom hopefully they like, even if they feel harmed in some way by your actions.
- *I do not recommend letter or email exchanges because they leave a written record, unlike a an in-person meeting.* Letters or emails are okay, but only if you are careful not to further incriminate yourself.

- *If the other person has hired an attorney, try to deal directly with your client or employee.* Attorneys are often very sneaky and may elicit information from you that is damaging. With luck, you can resolve the dispute without involving the attorney.
- *The same types of steps above can help with problems involving the family of a client, employees, employers and perhaps others.*
- *If you feel you cannot handle the problem by yourself, contact an attorney or paralegal.* Paralegals are often superb. They tend to charge much less than attorneys, and many know the law as well or at times even better than attorneys.

IF YOU NEED AN ATTORNEY. The following steps can save you thousands of dollars and much frustration: To help find a competent attorney or paralegal:

- *Be careful.* Attorneys have a bad reputation as a group because many are incompetent and greedy, and can waste your time and money. Try to get a good referral from a trusted friend or colleague.
- *There may be websites that rate attorneys and this could be useful, but is never foolproof.*
- *Attorneys and paralegals usually specialize.* When you call either one, describe your problem generally and ask whether this is a problem the professional handles. If not, ask for several referrals.
- *If the attorney or paralegal will handle the case, the next question is whether it can be attended to quickly.* Some attorneys and paralegals are booked up for months. Your problem may be able to wait, but some problems require fast action. If a legal professional is booked up for a month, decide if you need another referral or if the problem can wait.
- *Legal fees.* You should obtain fees during this initial contact, or they may fax you a copy of all fees. Don't ignore this step. Some attorneys insist on a "retainer", which is just a way to make you pay some money up front. It is okay if required, but not ideal, since if a problem arises with the attorney, you may have to fight with the attorney for a return of your money.
- *If this first phone contact goes well, schedule a consultation to explain your problem fully and obtain a legal opinion.* This will usually involve an hour of time and will often cost a few hundred dollars. This is often very worthwhile, even if you end up not using the person.

Preparing for the initial meeting with a legal professional:

- *Most legal professionals charge by the minute.* So prepare carefully for this meeting so as not to waste time. I suggest sitting quietly and typing out 1) your impression of what happened, in one or two short paragraphs, and 2) a numbered list of well-organized, simple questions for the legal professional.
- *Make copies for the attorney or paralegal of: 1) the complaint letter, 2) all relevant information such as receipts, client notes, etc., 3) any liability or office insurance policies you have and 4) your list of questions.*
- *You may want to bring the patient's file along if you believe that it contains relevant information.* However, do not give this to an attorney yet, as it is privileged information and you may not yet have decided if you will even work with this professional.

At the initial meeting:

- *Begin by handing your brief description of the problem and list of questions to the attorney or paralegal and having him read them.* Also, he or she may need to read the original complaint letter.

- *The attorney or paralegal then should ask for more information and conduct the meeting.*
- *If you feel very nervous talking to an attorney, bring a friend who understands your problem.*
- *Do not omit information that seems damaging to you.* If a court case were to occur, such omissions will often show up and can ruin your case.
- *Never lie to attorneys or paralegals as this could also compromise your case later.*
- *Try not to diagnose the problem.* Allow the professional to make his own judgment.
- *If you tend to talk too much or ramble, bring a friend with instructions to stop you when you ramble.* Another idea is to tell the attorney to stop you if you are rambling and wasting time.

Red flags during this meeting:

- *Don't use any attorney who talks about the need to go to court.* This is very costly to you and could drag a case out for years. A simple exchange of letters between attorneys or paralegals will solve most problems.
- *Beware of any professional – doctor, lawyer, builder or anyone else - who doesn't speak in simple language and whom you have difficulty understanding.* Ask for clarification of words you do not understand. If you feel very confused, this may not be a good match between you and the professional.
- *Be sure to find out how much it will likely cost.* This depends, of course, on the nature of the problem. While some costs can be estimated, others cannot. If the fee seems unreasonable, let the person know and see what he says. Also, if the fee seems too high, consider obtaining a second opinion from another professional.

After the meeting:

- *If you are not happy with the attorney, say thank you and look for another.* It is worth wasting a few hundred dollars initially, rather than wasting a few thousand later, and perhaps having a bad outcome.
- *If the meeting goes well, do exactly as the attorney or paralegal asks.*
- *Follow-up.* Be sure to keep in touch with your legal professional. It is your responsibility to oversee the resolution of your problem. Attorneys may need reminders, at times.

RESOURCES

The Institute For Justice is a group of attorneys that defend citizens in occupational licensing and other public interest cases. They are very good and do not charge any fees. Contact them at www.ij.org or at (703) 682-9320.

The Coalition For Natural Health is a group that lobbies to help protect your right to practice natural healing arts without a license. I suggest joining this group. Contact them at www.naturalhealth.org. or 1-800-586-4264.

ProAdvocate Group offers seminars to help health practitioners set up private membership organizations and does asset protection and tax-related work as well. I have not personally used them, however. Contact them at www.proadvocate.org or (214) 387-0821.

HALT is a consumer group that advises people about attorneys and publishes some excellent books and booklets about using attorneys. Contact them at www.halt.org or 1-888-FOR-HALT. I do not think you should need it, but legal insurance is available. It usually costs less than \$30-50.00 per month.

48. HEALING THE HEALTH CARE SYSTEM

A Canadian gentleman recently emailed a friend with the following message. He began by saying that you should know how health care really work in Canada and went on to say:

- *Health care in Canada is not free. We pay a premium every month of \$96.00 for Shirley and me to be covered. We also pay much more in taxes to keep the system afloat. I am personally in the 55% tax bracket! A large portion of it goes to health care, our #1 expense.*
- *When you see the doctor, time is short because it is more important to move as many patients through as possible, for government reimbursement.*
- *I would not classify what we have as a health care plan. It is more like a sickness diagnosis system. One can get in to see a doctor quick enough so he can tell you that yes, indeed, you are sick or you need an operation. The challenge becomes getting treated or operated on. We have waiting lists, some as much as two years.*
- *Try to avoid requiring emergency treatment as you may wait hours or even a day or two in the emergency room for treatment. The government saves a lot of money, they say, by cutting back on emergency treatment.*
- *Shirley's father cut his hand on a power saw a few weeks ago and it required a splint. To our surprise, we had to pay \$125.00 for a splint because it is not a covered expense, plus we paid \$60.00 each week for the doctor to check it.*
- *Shirley's cousin was diagnosed with a heart blockage. He was placed on a waiting list and died before he could get treatment.*
- *The government allows just so many operations per year. When the quota is reached, no more operations are done, unless perhaps you go to a local newspaper and plead your case. If you embarrass the government enough, then money may suddenly appear.*
- *We give free needles to drug users to try to keep them going. However, people with diabetes, who pay much more to the system, have to pay for their needles because it is not paid for.*
- *A 65-year-old friend needs an operation for a blockage in her leg. However, she is a smoker so they will not do it, although she paid into the system all these years. Now there is talk that perhaps we should not treat obese people, either, because they are a drain on the system.*
- *Let me see now - what we want in Canada is a healthcare system for healthy people only. That should reduce our health care costs.*
- *I ask not for sympathy. I just want to make sure that you hear the truth about health care up here. Step wisely and don't make the same mistakes we have.*

America is considering more government intervention in health care. Common themes

are that we spend too much, costs are rising fast, there are too many uninsured and the problem is free market capitalism. The answer, some say, is “universal care”. Let us examine this in depth.

To solve a problem, it helps to know how the problem developed. Below is a very brief outline of the history of American health care. Books such as *Patient Power* by John Goodman and *What Has Government Done To Health Care* by Terry Wasley describe it in more detail.

A BRIEF HISTORY OF THE AMERICAN HEALTH CARE SYSTEM

- ***PHASE 1. The free market period - 1776 to about 1910.*** For her first 130 years, America had a true free market health care system. This means anyone could offer health care services and the public was free to choose among them. There were few licensing laws because the American founders rejected the ‘guild’ system that existed in England that restricted healing to only one class of men. In that system, one group maintained control through licenses that were usually passed on from father to son.

In America, anyone who wished to offer services did so. Many systems of care, from dietary therapies and herbs, to hydrotherapy and homeopathy, competed for business. The most effective and least costly methods tended to win out over the others. Throughout this entire time period, America ranked first in the world in health care statistics.

- ***PHASE 2. Beginning of the drug medicine cartel – 1910 or so.*** In the early twentieth century, the American Medical Association or AMA, joined by the drug industry and others, lobbied every state legislature in the nation to pass medical licensing laws. The AMA is a trade group or union that represents one group of doctors, the allopaths or drug doctors. They strenuously objected to the fact that in America’s free market health care system their members were unable to make a lot of money.

The intent of their effort to pass licensing laws was to get rid of their competition so their members would earn more money and control the health care system. They succeeded well, riding a wave of increased government power and the promise of “miracle drugs”. As a result, by 1930 or so drug medicine became the only legal method of healing in the United States. Other important players in the cartel are the PMA or Pharmaceutical Manufacturers Association, the AHA or American Hospital Association, and other groups such as the ADA, or American Dental Association.

- Today, the AMA-led drug medical cartel controls most aspects of American medical care via a web of anti-consumer laws, and especially by the use of licenses to control doctors, hospitals, clinics and laboratories. Meanwhile, their propaganda machine controls the public by instilling fear that without all the licenses, medical care would be more dangerous. In reality, the opposite is true. Doctors and hospitals hide behind their licenses daily. They cannot be prosecuted for idiotic, toxic and dangerous methods as long as they follow “accepted practice guidelines”.
- *Even under cartel control, medical care was still reasonable in cost, however.* The cost of a day in the hospital in 1969 was about \$20.00. An emergency room visit was about \$5.00.
- ***PHASE III. Increased cartel control through socialized medical care – 1970 to the present.*** In 1967, Medicare and Medicaid were passed. With these programs, the federal government took over the care of the poor and the elderly. This ended most of what was left of the free market system. Government-run medical systems are called ***socialized, nationalized, single-payer or universal health care.***
- *Note that the drug medical cartel firmly controls Medicare and Medicaid reimbursement.* In

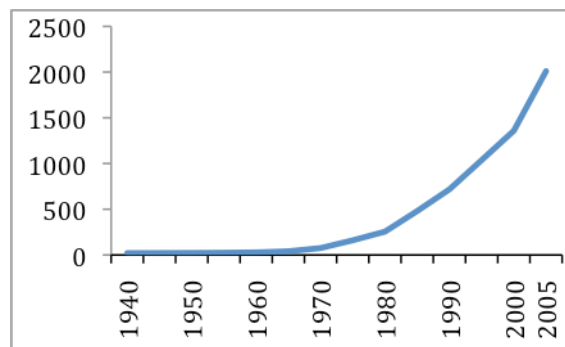
other words, these programs mainly pay for drugs and surgery, and drug doctors are the main group of physicians allowed to receive reimbursement.

How these systems basically work:

- *In a free market system*, each person chooses from a wide variety of medical services. One pays for them with fees negotiated between the service provider and the patient. The government's role is only to act as a referee to see that everyone is honest.
- *A cartel-based system looks like a free market*. However, choices are severely limited. Only practitioners who obtain licenses can offer services, and since the cartel controls medical education, they control what is taught in the medical schools. Also, they limit the number of students, which raises the price of medical care.
- *In socialized systems*, such as universal health care, choices are even more limited. In these systems, used in Europe and Asia, the government confiscates the money for medical care from the people via taxes. Funds flow first to a central bureaucracy, where an army of workers, who don't know you at all, decide which services will be allowed, how much they will cost, and how much of each service each person will receive.

DID THE FREE MARKET FAIL?

Of course, the answer is no. The free market health care system in America worked perfectly until it was destroyed by special interests. If there is any doubt, however, study the graph of total US health care costs below. ***There was no cost crisis until after 1970*** with the passage of Medicare and Medicaid. Today, these are the single most important fiscal problems on the American horizon. The chart below shows clearly that the cause of the cost explosion in medical care was not market failure. **It was the exact opposite.** *It was due to destruction of the free market by government intervention, first with licensing laws in the early 20th century and even more so with the passage of Medicare and Medicaid in the late 1960s.*



Source: Vital statistics of the United States
The vertical axis is in billions of dollars.

WHY DO CARTEL AND SOCIALIZED MEDICAL CARE COST SO MUCH?

Three basic reasons are: 1) improper methods of care, 2) high administrative costs, including lots of waste and fraud, and 3) corruption. Let us examine each of these in more detail:

Cost factor #1. Improper methods of care. Cartel medical care based mainly upon drugs and surgery was perhaps adequate 100 years ago. It is still excellent for surgery and

trauma care. However, it is not very effective for chronic and degenerative diseases. As a result, millions of Americans are developing diabetes, cancer, heart disease, arthritis, autism, ADHD and other serious and costly conditions. The rather simple answers for many of these problems are the subject of this text. Other costs that stem directly from improper methods of care include:

- ***Iatrogenic or doctor-caused problems.*** By their own admission, drug medicine is at least the third or fourth leading cause of death. Drug side effects, botched surgery, hospital infections and the adverse effects of vaccines add billions of dollars to our medical care costs.
- ***Exorbitant legal costs.*** More and more people are angry at the medical system and are fighting back legally. This causes very high malpractice costs that are passed on to patients.
- ***Defensive medicine.*** Doctors and hospitals respond to the malpractice crisis with “defensive medicine”. They perform literally millions of unnecessary tests and procedures, all to avoid lawsuits and satisfy lawyers, rather than for the wellbeing of the patients.

Cost factor #2. High administrative costs.

- ***Administrative nightmares.*** Medicare rules are 133,000 pages. Most doctors, hospitals, laboratories, clinics and others connected with the system must hire specialists just to handle all of the rules and regulations governing these programs, if they want to be reimbursed.
- ***Fraud.*** Medicare fraud is estimated to be at least 7.5 % of the program, and is probably double that number. The temptation for doctors, hospitals and others to abuse the system is enormous because it is hard to police the system from thousands of miles away.
- ***Even more paperwork.*** Medicare and Medicaid administrators are responding to the fraud problem by demanding lots of extra paperwork from doctors and others. This adds billions more to the cost of these programs, both for the government and for the hospitals and doctors who must comply with the new anti-fraud measures.
- ***Medical policing costs.*** More money is spent catching and prosecuting the cheaters.
- ***Perverse incentives.*** Socialized programs, in particular, cause people to change their behavior, wasting much more money. When people do not pay for services directly, they tend to overuse the services. As a result, doctors and hospitals raise their fees because the demand for services increases. This is *the law of supply and demand* that is not taught nearly enough in high schools. Before 1967, the cost of a doctor’s visit made people think twice about using medical services. The low volume of patients made doctors think twice about raising their fees. When medical care became a “right”, meaning it was made essentially “free” (paid for by taxes), the demand for services exploded and the doctors and hospitals began charging more because they were able to do so. Today, many seniors spend their social outings at the doctors’ offices – Monday is for the eye doctor, Tuesday is for the nose doctor, and so on. Why not? – it’s free.

Cost factor #3. Corruption.

- ***Centralized power and control breeds corruption.*** In any system with centralized control, drug companies, device makers and others only need to bribe or threaten a small number of legislators and regulators in order to control the system for their own benefit. This must be clearly understood. For example, a recent news report indicated that over half the employees at the FDA received perks of some type from the drug industry they regulate. Anyone who thinks the FDA should exist for even another week must read ***The History Of A Crime*** by Harvey Wiley, MD, the first director of the FDA. It is a sad tale of complete corruption.

- ***Free markets are far more difficult to corrupt.*** By contrast, it is very difficult for special interests to bribe many thousands of independent practitioners in a decentralized, free market system of health care.
- ***Corruption keeps the cartel in power.*** For example, a recent figure was that drug companies spend over \$11,000.00 per doctor each year for “advertising”, gifts, vacations, retreats and more. The AMA is also one of the largest lobbying groups in the nation. The cartel also regularly funds phony research to denigrate their competition. Chapter 19 describes two such “studies” that were done to discredit hair mineral analysis.

What to do. The founders of America rejected the licensing or ‘guild’ system of medical care that existed in England in 1776. It is time to say no to the medical guild or union system of health care. This would mean breaking up the cartel, so it is a large project that will take some time to accomplish. However, it is the direction to move in, rather than more government intervention that will tend to entrench the cartel even further. The rest of this chapter discusses other important issues regarding medical care.

HOW TO CARE FOR THE POOR

Private welfare. Some readers will say that we must have Medicaid to care for the poor. From the nightly news, one might think that before Medicaid and Medicare, the poor and elderly just languished in the streets. This is absolutely false. In fact, many were much better off than they are today. Before 1969, in America, they were cared for by private charities such as the Catholic and Jewish hospital systems, and many other groups whose ministry and mission was to care for the sick and dying. These groups collected money from their members and from the community, and operated a network of thousands of hospitals and clinics throughout the nation.

Public welfare. Medicaid put most of these out of business and substituted a different method of caring for the poor. Instead of a voluntary, charity-based system, the government forcibly confiscates money for the poor via taxes. Funds are sent to Washington, DC, where they pass through a massive bureaucracy that decides who will receive some tax money, how much each will receive, and for what kinds of services. All those bureaucrats must be paid, plus they all receive generous government benefits such as pensions, and health, dental, and disability insurance. The question becomes, which system is better?

Studies of the best way to care for the poor generally conclude that for the government to do the job, the cost is at least 20% more, and often 1000% more. Some argue that the extra cost is worth it. They say government welfare is fairer and more moral because there is one system for the whole nation. In contrast, private welfare will vary from city to city. However, those in favor of private welfare for the poor answer that there are many other reasons why a private system is much better, besides lower costs. These include:

- *Charity is helpful for both the donor and the recipient.* It builds a spirit of love and cooperation. In contrast, taking money by force through taxes leads to anger and resentment.
- *Care that is provided by people who have dedicated their lives to charity is liable to be superior to when a distant government “mandates” the rules, the salaries and everything else about the system.* Health providers are just 9-to-5 government employees.
- *Local charities are easier to police because the people running them are usually local residents.* If a charity wastes money or even commits fraud, word will spread, donations will

cease and the charity will go out of business. In contrast, inefficient government agencies are difficult to police and do not go out of business if they are found to be corrupt.

- *When any service is viewed as an “entitlement” or “right”, people take advantage of it and lose the incentive to take care of themselves and their health.* They figure, why bother if the government will clean up their messes. With a private welfare system, there is much less entitlement mentality. Thus the poor people receive much more of an incentive to care for themselves better and stay healthy. In economic terms, government welfare tends to cause **perverse incentives**. This means that although we want people to care for themselves, Medicaid and all the other government programs basically gives them the opposite incentive.

IS THERE A ‘RIGHT’ TO HEALTH CARE?

The question of a right to health care needs a lot of clarification. The founders of America were extremely interested in this subject. They offered us many insights about rights. Americans enjoy *three levels of rights* and *two basic types of rights*. Each has certain benefits and drawbacks. Also, one must understand that a right must not infringe on the rights of others. Here is very basic information about rights in America:

The three levels of rights in America:

- *Natural rights.* These are described in the Declaration of Independence. They come from the Creator of life and are described as “unalienable”. This means they may not be taken away by any government. For this reason, these are the best type of rights. They are stated as the rights to “life, liberty and the pursuit of happiness”. In earlier documents, the latter meant the right to own property. Since one’s body is your most intimate and valuable property, one would think this right includes the right to do what you wish with your body. A right to health care goods and services is not among the enumerated natural rights, however.
- *Constitutional rights.* These are guarantees in the national and state Constitutions and their Bills Of Rights such as the right to “a speedy trial by a jury of one’s peers”. They also include the right to speak freely, worship as one pleases, and many others. It is difficult to amend constitutions, so these rights are fairly safe. There is no right to health care services here.
- *Civil rights.* These are just laws passed by legislatures. They can be revoked at any time by a simple majority vote. These are the least desirable type of rights. However, even they do not include an inherent right to health care goods and services.

The two types of rights:

- *Freedoms or negative rights.* These are really prohibitions against government interference with an activity or behavior. Examples of **negative rights** abound in our federal and state constitutions such as the freedom of speech and of worship, the right to bear arms and many others. It is critical to understand how they work. Freedom of speech, for example, means the government may not interfere with your speech. However, it does not entitle one to any goods or services such as a microphone or a podium with which to spread your message. You may own a gun, but no one is required to give you a gun. You may worship as you wish, but no one is required to provide you with a church or even a bible. A **negative right to health care** means the government may not prohibit you from seeking the care of your choice. Sadly, the cartel and government regulations greatly limit American’s choices today.

- *Entitlements or positive rights.* These rights promise some kind of goods or services. For example, the right to a speedy trial *guarantees that the government will provide* a lawyer, jury, judge, bailiff, court reporter and courtroom time to any citizen who desires it. This is the type of right to health care that many people think we should have.

Let us discuss the critical differences between these two types of rights:

- **Cost.** *Freedoms* cost the taxpayer nothing. *Entitlements* are often a bottomless pit of costs. That is why there are very few in our federal and state constitutions. Often entitlements cost whatever the legislatures decide to spend, and it varies from administration to administration. This is very dangerous and has bankrupted dozens of nations. In fact, Medicare and Medicaid are currently bankrupting America. When people get something for free, people tend to overuse and abuse it. It is just human nature.
- **Ease of administration.** *Freedoms* cost little or nothing to administer. It costs little to guarantee people the right to free speech, freedom to worship as they please, or, for that matter, the freedom to choose their health care. *Entitlements*, on the other hand, often require large bureaucracies to administer them, with all of the problems discussed above.
- **Perverse incentives.** *Freedoms* allow and encourage people to care for themselves and solve their own problems with a guarantee that the government will not stop them. For example, health is a very personal matter. Sound public policy would be to create as many incentives as possible that encourage people to care for themselves. *Entitlements* tend to cause *perverse incentives*. For example, a ‘positive right to health care’ gives people no incentive to care for their health because they are ‘entitled’ to government care if they become ill. This works against their health in most cases, and further raises the cost of this type of right.

IS FREE MARKET HEALTH CARE REALLY AN OPTION?

Would a free market health care system work today? Here are some comments:

- *It worked well in the past.* America had a robust and successful free market health care system until it was destroyed, first by the cartel in the early twentieth century, and even more so by the passage of the socialized medicine programs in the 1960s.
- *Even now, some natural healers operate ‘below the radar’ of the cartel on a free market basis, helping thousands to achieve better health.*
- *The only obstacles to a truly free market are special interests and the government.* Restoring a free market system would mean *dismantling the cartel* or medical guild system based on licensing. It would also mean repealing hundreds or perhaps thousands of government prohibitions that stifle free enterprise in the health care arena.

The automobile repair analogy. Since few people seem to understand how free market health care would work, an analogy with present-day automobile care may be helpful. Somehow, auto care works well with minimal government regulation and without hoards of bureaucrats looking over everyone’s shoulders. Here’s how it works:

- *Many choices.* Some people take their cars to fancy, expensive, triple-certified dealerships for repairs. Others choose local uncertified mechanics. Still other use shade-tree mechanics, which might be the equivalent of alternative healers. No one interferes with these choices and most people are very happy with their choices.

- *Excellent access to care at a reasonable cost.* Since anyone can set up a repair shop, access to care is excellent. Lots of competition helps keep everyone honest, and keeps prices down.
- *Caring for the poor.* Most people manage to find ways to have their cars repaired. Some kind-hearted mechanics offer discounts and some make repairs at no cost. Some of the poor trade for repairs, or read books and do the work themselves. In other words, the system is extremely flexible and creative, unlike today's medical care system that is so overburdened with silly government regulations that flexibility is sorely limited.
- *Product safety.* Numerous companies have sprung up that rate products and services related to the auto care industry. Consumers Union, for example, tests vehicles and publishes their repair records. Other groups direct people to different types of repair shops, offer helpful hints for caring for your car yourself, compare costs of repair, and so on. As a result, dangerous cars, crooked mechanics, and products that don't work are generally exposed and removed from the market rapidly. The same would be true in health care if there were more freedom of choice.
- If an auto care rating group becomes corrupt, word may spread and they will often go out of business, unlike the current Food And Drug Administration that just keeps feeding the American people false information because it is bought and paid for by the medical cartel.

For all the billions of miles driven, this loosely organized, free market system works exceedingly well. One may say, but it is only a car and who cares much about a car. I reject this argument. An auto is the second most expensive item in most people's lives next to their home. We depend on our cars for our safety each day. Cars today are complex pieces of machinery. The principles are identical: leave the marketplace alone and the ingenuity and needs of the people will take care of the service. The internet and other modern communications systems just make markets work better. Please consider this model when thinking of how health care could be in America and around the world.

Will the profit motive spoil any free market system? This is the common complaint heard about free market economics. Let us examine it in more detail:

1. Profit is not all bad. It is a way to measure the value of a good or service.
2. Competition in a free market helps control the greed that causes excess profits.
3. The cause of greed is not the marketplace. Greed exists just as much in socialized health care systems. It can be much worse because it is hidden and called "waste, fraud and abuse". In other words, people still cheat the system. In some ways, it is easier to cheat a large bureaucracy by filling out paperwork incorrectly, than it is to cheat individual consumers.

WHAT IS REALLY STOPPING A FREE MARKET SYSTEM?

Having observed our leaders for years, I find their talk of fairness, compassion and caring for everyone is too often a smokescreen. Many are power-hungry and want total control of health care as a way to control the people. Many of them, I think, have a deep disdain for the common people, which is you and I. Actions speak louder than words. Our Congressmen, for example, have a much better health care system than what they are offering the American people. They also have their own retirement system that is far better than Social Security. Until the elites are willing to live by the same laws as they pass for the rest of the people, I cannot trust

any of their promises. Also, I believe that individuals can make far better health care decisions than bureaucrats living thousands of miles away.

49. REVIEW, CONCLUSIONS AND RESOURCES

Three years ago, Gerard, age 32, suffered from severe food allergies to milk, citrus, dairy, and wheat. He also had extreme fatigue, muscle weakness, hypoglycemia, postural hypotension with dizziness upon standing up. Other important symptoms were hair loss, excessive plaque on his teeth, brain fog, irritability, memory loss, insomnia, intestinal gas and impotence. Gerard's first hair analysis revealed a mildly slow oxidation rate with a sodium/potassium ratio of 13.5. This is a severe inflammation tendency. His potassium level was 2 mg%, indicating he tended to push himself hard, wearing himself out physically and emotionally. Mercury was elevated at 0.089 mg%, and arsenic and aluminum were also somewhat high.

Gerard has followed a development program as well as he can because he is very sensitive to anything containing manganese or kelp. These sensitivities have slowly diminished. He has not used an infrared sauna or done the Roy Masters meditation. However, he has made steady progress with all of his symptoms. After about three years on a program, he reports that "my energy levels continue to climb above 85%. I'm also starting to feel more optimistic. I've just recently realized that how happy I am is a function of what is going on with my minerals, and not with my work. I am just very happy and grateful you're helping me and the rest of my family."

A BRIEF REVIEW OF THE TEXT

It is important to view this textbook as a whole system, not as individual chapters. So I am starting this chapter with a brief review of the entire contents of the book.

Section I. The Paradigm Shift. The conventional paradigm or way of thinking in medical care today is based on naming and classifying disease entities. Then the doctor prescribes and treats the entity mainly with drugs and surgery. This approach is costly, toxic and horribly unsafe, as well. It also often does not address the deeper causes of illness.

The new paradigm, which is not really new, but is growing, is based on assessing the body at deeper levels and then renourishing, detoxifying and balancing the body with less toxic and physiological substances. It is very safe, completely preventive, quite inexpensive, and simple in most cases. It requires self-discipline and understanding on the person's part, and it uses newer assessment methods such as hair mineral analysis, which is not yet an accepted medical test. Dr. Paul Eck brilliantly synthesized many aspects of the new paradigm into a simple package that is the subject of this book. The main features of the new paradigm include:

- *An intense focus on real prevention.* This means a focus on lifestyle, excellent nutrition and screening with tests such as hair mineral analysis rather than the use of less safe preventive methods such as vaccines, water fluoridation, preventive drug use and x-ray exams on a regular basis such as mammograms.
- *Real attention to safety.* This means avoiding, as much as possible, all exposure to toxic foods, chemicals, metals, medical drugs and other toxic products.
- *A blending of ancient and modern, Eastern and Western wisdom.*
- *Incorporating the best of all of the Western healing sciences* from standard physiology and biochemistry to less well-known principles used in naturopathy, chiropractic manipulation and homeopathy.
- *The use of engineering concepts as applied to biological systems such as stress theory and general systems theory.* These are unfortunately not even taught to doctors or to the public, yet they are primary in development.
- *Computer science principles such as cybernetics as applied to biological systems.*
- *Physics principles as applied to biological systems such as metabolic typing or yin and yang.*

This is the basis for an exciting new way to heal mankind's physical and mental illnesses.

The basic modalities used in development. These include *lifestyle, diet, drinking water, nutritional supplements, near infrared sauna therapy, coffee enemas, the Roy Master observation exercise and other natural therapies, at times.* The following summarizes the importance of each of these.

Lifestyle. This is the single most important physical element of the new paradigm. If the lifestyle is not healthful, the body will break down no matter how good the remedies, therapies or other healing methods. The main elements of lifestyle include lots of rest and sleep, and healthful habits of eating, working, thinking, behavior, posture and exercise. Balance in the lifestyle is also an important concept.

Diet. The main dietary issues today are 1) how to obtain the most nutrients from an extremely nutrient-depleted food supply and, 2) how to avoid toxic chemical additives and pesticide residues that are in most foods, especially prepared items. Somewhat more esoteric concerns that were not part of Dr. Eck's work, but I find extremely helpful are 1) how to eat a more yang diet to balance the yin quality of most bodies today, and 2) how to obtain more etheric or subtle energy from food. This has to do with its freshness and perhaps how it is prepared. Also, certain types of foods contain more of this energy, a concept that Dr. Eck knew about. It was one reason he did not care for vegetarian diets, for example, which tend to be lower in etheric energy.

Basic dietary principles that work well for most people are to eat mainly cooked vegetables two or three times daily. They supply the most minerals and other nutrients. Cooking them gently makes the minerals much easier to absorb. An exception is that every adult should drink about 10-12 ounces of carrot juice daily for its high bioavailable calcium content and many other nutrients that it contains as well. Children should have some as well, but less based on their weight. Most people also need some concentrated protein foods twice daily such as meat, eggs or high quality and preferably certified raw dairy products.

Beef and wheat are extremely hybridized today, and for this reason not as healthful. Avoid all wheat and spelt products, and most beef. Some are gluten intolerant and need to avoid all rye, barley and oat products as well, for at least a year until their health improves. Excellent

cereal grains include brown rice, blue and yellow organic corn products, quinoa, millet and perhaps a few others. However, some people cannot eat grains without reacting to them. This is temporary and usually goes away as their digestion improves.

All products from pigs can contain parasite cysts and eggs, and are best avoided. Beans, seeds and nuts are generally lower quality proteins, and are best eaten less often. Fruit, fruit juices and all sugars and sweets, such as honey, have very little etheric energy and are very yin in Chinese medical terms and therefore to be avoided. Also avoid all chemicalized and toxic food products, of which there are thousands on the market. This is easy, however, if one chooses only fresh, natural foods grown organically without pesticides on mineralized soils.

Finally, very simple meals of one or two foods only are by far the best way to rest and heal a weak digestive system, which is almost universal. Complex food combinations are far more difficult or impossible to digest well. This may seem boring, but is just a matter of adjustment. It is the way babies and many tribes of human beings have eaten for thousands of years. Fast and slow oxidizer diets is a simple concept, yet most helpful to balance the body in many cases.

Drinking water. The water one drinks is a critical health issue. The main issues are 1) cleanliness and 2) its ability to hydrate the body. Other issues such as alkalinity are very minor in comparison. Tap water and well water are extremely contaminated today, in spite of reassurances from public health authorities. Additives such as chlorine, fluoride and aluminum make it much worse. Carbon filters will not remove these toxins or many other toxins very reliably. Reverse osmosis filtration, which removes most toxins, unfortunately damages the water so it does not hydrate most people well. Therefore, we are left with either steam distilled water or a good quality spring water. This is unfortunate, costly and wasteful of plastic bottles in many cases. However, it is much better than drinking other types of water. Dr. Eck did not discuss drinking water too much, as I recall. Alkaline water machines are very dangerous for long-term use and should be strictly avoided.

Nutritional supplements. These are needed today to help offset a depleted and toxic food supply, improper diets and eating habits, and often weak digestion that impairs nutrient absorption. Also, food supplements can be used to enhance the stress response and balance body chemistry in very specific ways. They can also help remove toxic metals easily, quickly, deeply and without the need for chelating agents and other less safe methods. Food supplements are an absolute necessity today for almost everyone. In development science, all supplements are chosen carefully based mainly upon a properly performed hair analysis that is interpreted according to Dr. Eck's method. This is entirely different from the way most doctors use food supplements.

Infrared sauna therapy and coffee enemas. I have added near infrared sauna therapy and coffee enemas or colon cleansing to Dr. Eck's work. I believe he would approve of them heartily. Clients who do these procedures report that they add an entirely new potency and dimension to Dr. Eck's original brilliant work. Other detoxification methods are either not as safe for extended use, not as potent, or not as balanced in terms of yin and yang. As a result, they are not recommended.

The Roy Masters observation exercise. This is another addition to Dr. Eck's work that I know he would approve of, as he was quite familiar with Mr. Masters. This exercise adds another dimension or element that is balancing, centering, grounding, very yang, relaxing, teaches discipline and will heal the body and mind at even deeper levels if one does it daily for a number of years.

Other healing modalities. Gentle chiropractic, bodywork, counseling, biofeedback, acupressure, foot and hand reflexology and a few other natural therapies blend beautifully with development science. Most other nutritional methods and dietary and herbal programs, and most homeopathy do not follow the same principles and will often negate some or all of the benefits of development.

Section II. The Scientific Basis For Development. Seven chapters introduce two dozen basic principles involved with development science. While not essential for daily practice, they are critical to understand the science at the deepest levels and to know how it differs from other healing methods.

Also included are more advanced principles. Development is a total science of human life. This means it includes all sciences known to mankind, from particle physics and mathematics to fractals and systems theory. It also includes such fields as psychology, chaos theory, and other more esoteric sciences that are rarely discussed in medical circles. Development is thus very broad in its scope. One may learn as much as one desires at whatever level one feels comfortable with. The more advanced principles such as pleomorphism and biological transmutation of the elements are only discussed in passing in this text, and may be expanded upon later.

Section III. Introduction To The Minerals. Minerals are the basis for all life, and much overlooked by so-called modern medical care that is often not modern at all. Dr. Eck called minerals “the stepchildren of nutrition” because they are so overlooked. Most people are deficient in the essential minerals, and this is the main reason for many of their diseases. Minerals not only affect the physical body, but have powerful effects on the mind and the emotions as well. Five short chapters on minerals only scratch the surface of this enormous topic. Chapter 42 discusses psychological aspects of minerals in more detail. Also, the *Mineral Reference Guide* in Appendix II contains more technical information about them.

Section IV. Hair Mineral Analysis. This controversial medical test is the basis for Dr. Paul Eck’s research and for all of development science at this time. He commented to me on several occasions that he could not believe how much information the test provides when interpreted correctly, and how complex the interpretation can become.

Among the doctors who offer hair mineral analysis, most use it only to detect toxic metals or to do replacement therapy. This is almost a complete waste of the test in our view. Understanding this clearly is critical or one will miss the greatest benefit of the test. This is to assess the stress response of the body, the oxidation type, and many other facts that cannot be gleaned from other types of tests that I am aware of. Practitioners will be tempted to slip back into the replacement therapy mentality, or worse, just looking for toxic metals that everyone has.

The text discusses about 35 patterns revealed on hair tests. A few are new, but most are Dr. Eck’s discoveries. More combinations are possible, but the ones discussed are the most important that I have encountered. Retests are also discussed in some detail.

Section V. Physical Health Conditions. Most common health conditions are discussed very briefly in this section of the book. Among the most important chapters are those concerning vitality, adrenal and thyroid glandular activity, carbohydrate tolerance, cancer and development

through the life cycle. This section is kept short, as it could easily fill the entire book. Updated articles at www.drlwilson.com expand upon many conditions.

Section VI. Mental, Emotional, Sexual and Spiritual Aspects of Development. This section could also easily be expanded to fill the entire book. It is one of the most fascinating areas of development research. Almost all the material is Dr. Eck's amazing research on the roles, interactions and effects of individual minerals and mineral patterns on mental and emotional health. I added the concept of classifying mental illness according to the evolutionary levels of brain functioning to make them easier to comprehend. The major levels are a *mechanical or 'computer' level, an 'animal' or emotional level, and a human or 'tuning' level.* Some pathologies also involve combinations of these levels. Such a classification system would simplify mental illness and lead to many more cures for common mental illnesses.

Development also focuses on enhancing mental and spiritual development. This is unique in that it is not about symptom removal at all. However, most people would like to think and remember more clearly, and enhance all their cognitive abilities. Mental development also has to do with developing the subtle human bodies, an area that is esoteric but written about by many authors, particularly in the Oriental nations. Removing toxic metals at the deepest levels with development appears to enhance the overall development of a human being.

Section VII. Therapeutics and practical aspects of development. The weakest area of this volume is in therapeutics. This is done intentionally at this time to preserve Dr. Eck's work in its original form as much as possible, and to keep the book from being twice its present size. Many well-meaning practitioners believe they can improve upon Dr. Eck's work and still call it development. Instead, I would like practitioners to use the supplement programs designed by Dr. Eck himself. These are the most effective, convenient and least costly, in my experience so far.

Retracing is given its own chapter, as it is one of the most important concepts in development science. It is a mental and spiritual concept as well, and retracings occur in these areas also when a person follows a properly designed development program.

Other chapters discuss how to run a development business, and legal aspects. These may seem odd to include in a technical book. However, many excellent practitioners are not well-versed in these areas and many questions arise as to how to promote and conduct a practice in a safe, practical way. Dr. Eck was an excellent businessman with very high integrity, and this factor of success should not be overlooked.

The chapter on health care in America is needed because the ignorance in this area, even among natural health practitioners, is appalling. One rarely hears the real history of government intervention in the area of health care for the past 100 years in America. It destroyed a very safe, inexpensive and effective health care system, substituting a complicated, highly corrupt and ineffective, top-down, bureaucratically-run government welfare system.

SUGGESTIONS FOR LEARNING DEVELOPMENT

Development is a newer healing science that is not easy to learn from scratch. Learning it well took me at least four years. I was working at it full time, with no distractions due to offering other therapies. I also had a background in nutrition and a medical degree. To shorten the time needed to learn it, the following may be helpful:

- **Begin by focusing on the levels and ratios of the macrominerals – calcium, magnesium, sodium and potassium.** Work on recognizing and learning how to calculate the oxidation type and rate, and the meaning of the major ratios involving these minerals.
- **Next focus on the patterns involving the macrominerals, starting with patterns that involve only a single mineral, such as the meaning of a *high sodium* or a *low calcium*.** The other patterns will be much easier to understand once you really understand the single mineral patterns.
- **Next, pay more attention to the trace minerals, particularly *zinc* and *phosphorus*.** You will begin to realize how important these can be. Remember that the zinc and copper levels are not good guides for zinc and copper supplementation.
- **Lastly, pay attention to the toxic metals.** These are important for health, but not as important for test interpretation as the macrominerals, which are more involved in the stress response.
- **Focus first on the physical aspects of the minerals before delving into the psychological aspects of the minerals.** After that, you may wish to explore more of the sexual and spiritual aspects of the minerals and mineral patterns.
- **Review as many hair analyses as possible.** No amount of book learning will replace the experience that is gained by actually reviewing client charts and working with clients.
- **Ask for help.** Learning this science on your own is difficult, if not impossible. I called Dr. Eck on a weekly basis or more often when I was learning. Currently, I offer training for practitioners by telephone or email. If I am too busy, it will be with one of my advanced students, at no charge for those using Analytical Research Laboratories for hair analysis.
- **Learning development is like learning a new language.** It becomes much easier with some practice.
- **Go forward gently.** This book contains enough material for a post-graduate degree. Also, many of the ideas such as systems theory are unfamiliar to most people. The volume of information on one hair mineral analysis is actually overwhelming. So do not become frustrated or discouraged, although this can occur, at times, when learning any new science.

PITFALLS WHEN LEARNING DEVELOPMENT

Common obstacles to learning this science are:

- **Forgetting the principles.** With development, the principles are absolutely central and must not be ignored.
- **Allowing yourself to drift away from the whole systems thinking.** Systems theory and stress theory, for example, are the most important single concepts in this science.
- **Feeling you should be able to learn it in less than several years.**
- **Falling into ideological thinking such as favoring vegetarian diets, particular foods or specific supplement companies.**
- **Not following the step-by-step algorithm in Chapter 23 to interpret the hair analysis.**
- **Drawing conclusions too quickly.** This is normal when starting out, to some degree.
- **Unwillingness to be guided.** Some practitioners don't want to take help for various reasons. This book is designed to make it easier to learn the science. However, many situations arise in which a more experienced person can be of great help, and help is available.
- **Combining therapies.** Adding or substituting other dietary regimens, supplements, herbs,

bio-identical hormones, and most homeopathic remedies usually slows or can even negate the development program. This is unfortunate, but true.

- **Falling back into allopathic medical concepts. Among these are:**

Diagnosing diseases. Hair analysis is best for assessing the stress response. It is not intended as a way to identify diseases, though it can, at times, help greatly with this.

Expecting fast results. Most people have latent or sub-clinical cancers, early heart disease or diabetes, or many other subclinical conditions. A development program will often remove these health conditions before it tackles more superficial symptoms such as fatigue or headaches. This is actually a great benefit of a whole systems approach to healing. However, it slows symptomatic correction at times, and this must be clearly understood.

'Treating' hair mineral levels, ratios or patterns. For example, please do not just 'lower copper'. That is not development science, but rather an allopathic and more symptomatic approach. Instead, always correct the stress response and all the mineral levels, ratios and patterns will tend to improve. The only time one should focus on copper, mercury or any other single mineral, ratio or pattern is if you believe it is causing severe symptoms that must be addressed at once. It is true that Dr. Eck focused on copper, at times, but he generally preferred to focus on the entire chart rather than any single mineral.

Making quick comparisons between hair and other types of tests. These are usually far more difficult than one thinks. The hair analysis measures a completely different body compartment than do blood, urine or saliva tests. As a result, it provides very different types of information. For example, correlating the stress response with allopathic medical tests is quite difficult in most cases.

For assistance in finding a practitioner who offers development, see the link 'How To Find A Practitioner' at www.drlwilson.com. For assistance in learning development, see the 'Training' links at the same website.

RESOURCES FOR DEVELOPMENT PROGRAMS

An equipment list:

- **Electric food steamer or stove-top steamer basket.** Manufacturers of the electric steamers include Oster and perhaps others. This is not really needed if you steam in a saucepan.
- **Air ozonator/ionizer:** These are helpful for everyone to provide more oxygen. Place the unit in the bedroom, turned up about half way and sleep in the ozone, which is very safe despite what some people are saying. Two brands are Breathe Fresh and Atlas 300A (2016), available through Amazon.com.
- **Hydrogen peroxide, 35%, food grade:** www.pureH202forhealth.com or (352) 563-5400.
- **Steam mop.** These are sold at many stores. They clean with just pure steam.

Resources available at www.drlwilson.com:

- *Updates and corrections for this book.*
- *Over 5000 pages of companion material about development science and related topics.* Many topics in this textbook are discussed in more detail.
- *Information about training in development science.*

- *20 or so compact disc programs* on various health-related topics.
- *About 8 audio interviews* with the author on various health-related topics.
- *A directory of practitioners.* These are the only development practitioners I can recommend, as they communicate frequently with me or one of my advanced students.
- *A directory of sauna builders who will sell reddish heat lamp saunas.*
- *Free plans* to build a reddish heat lamps sauna.
- *Companion books to this textbook:*
 1. ***Sauna Therapy.*** Sixteen chapters discuss how infrared saunas improve health, protocols and cautions with saunas, construction and design plans, and several chapters on health conditions such as infections and cancer. Also includes many testimonials, many references, how to use saunas with hair analysis, and much more. 167 pages.
 2. ***Legal Guidelines For Unlicensed Practitioners.*** Fifteen short chapters discuss many legal aspects of operating a development or other healing practice. Though written for unlicensed practitioners, most of the information is excellent for licensed practitioners as well. Contains sample disclosure, disclaimer and consent forms. 136 pages.
 3. ***The Real Self.*** Forty spiritual principles of living are organized into seven sections to help one clear negative thinking and negative emotions from the body and mind. 102 pages.
 4. ***Books by Other Authors about development.***

Resources available from Analytical Research Laboratories include:

- ***The Interpretation Profile #2.*** A 12-15 page report of interpretation material regarding a hair mineral analysis, with paragraphs keyed to the mineral levels, ratios and patterns. Also offers a suggested diet, a suggested supplement program, lifestyle modifications, disease trends and much more. I suggest this for everyone, as it is an excellent companion to the basic hair mineral analysis.
- ***The Healthview Newsletter, #27-29.*** This is 35 years old, but is one of the most readable and interesting interviews ever conducted with Dr. Paul Eck. 70 pages.
- *A number of articles about development are posted on the ARL website, www.arltma.com.*
- *Older seminars on cassette tape with Dr. Eck and this author.* These are somewhat outdated and are educational seminars presented between 1982 and 1995 on various topics related to development science. They focus on different illnesses, and many include reviews of hair analyses. Some also featured other doctors and other interesting material.

OTHER PRODUCT RECOMMENDATIONS

The following products appear to be quite safe, and can enhance a development program and perhaps just enhance one's overall life. This list will be expanded, hopefully, in the future. Its importance is that some seemingly 'all-natural', 'organic', 'green' or 'safe' products are not as good as claimed, and many contain some toxins. As a general principle, the fewer cleaning and body care products one uses, the better.

- **The Fridge Freshener:** This simple device will save money and shopping time by keeping vegetables fresh much longer. It is available from www.naturesalternatives.com or from 1-877-877-0747 or 1-623-873-8080 in Arizona. It is also at www.purpleplates.com.

- **Q-Link.** This is one of many devices sold to reduce the effects of electromagnetic stress. This one definitely helps, perhaps by strengthening one's own electromagnetic field. Available at www.Amazon.com or from www.qlinkproducts.com or 1-800-246-2765.
- **Hydrogen peroxide test strips:** Bigbrandwater.com or (888) 426-9488 or (818) 340-7258.
- **Steam mops.** Several brands of these are available. They clean deeply with no chemicals.
- **Healthful shampoos:** Bentley Organic shampoo – all varieties; Jason (brand) Tee Tree Shampoo and Conditioner, Dandruff Relief Shampoo, and Thin-To-Thick Hair & Scalp Therapy. For babies or anyone, for that matter, very safe products are made by Burts. They include Baby Bee Talc-free Dusting Powder, Buttermilk Bath Soak, Bubble Bath, and Shampoo and Wash.
- **Healthful hair conditioner:** Organic Excellence Chemical-free Mint Conditioner; and Kiss My Face Hold Up Styling Mousse.
- **Non-toxic soaps:** Grandpa's Pine Tar Soap and Black African Soap are excellent.
- **Less toxic toothpaste:** Trader Joe's Antiplaque Toothpaste and others free of sodium lauryl sulfate.
- **Less toxic mouthwash:** Tom's Spearmint or Peppermint Natural Cleansing Mouthwash and others free of sodium lauryl sulfate and free of alcohol, which is quite irritating to the gums.
- **Less toxic body lotions:** Alaffia Body Lotions – many scents.
- **Less toxic cosmetics:** Dr. Hauschka products (but not the Dr. Hauschka shampoo). These are quite costly, however. Others may be okay, but read labels carefully.
- **Healthy bath salts:** Masada Unscented, Lavender, and Rain Forest Scented Bath Crystals or Salts.
- **Citrasolv Natural Cleaner and Degreaser.** Very good, although it contains some chemicals. Citrus extract has a nice effect to freshen and clean. Use it everywhere, even in the laundry. Many so-called "green" products are, in fact, more toxic in some ways.
- **www.waterpoweredcar.com.** Interesting website that teaches how to run your car on water.
- **Natural baby formula:** See *Nourishing Traditions*, by Sally Fallon with Mary Enig, PhD.

CONCLUSIONS TO DRAW FROM THIS TEXT

A book this large may raise more questions than it answers. However, a few conclusions that one may draw from the material presented are:

- **Life and health are precious gifts.** The complexity of the human body and mind are simply astounding. If more people understood this, they would undoubtedly treat the body and mind with more honor and care.
- **The human body, its ailments and its healing, can be extremely complex.** Many people search for the final answer to disease in a therapy, a healer or a special product or technique. There is no such thing, in my view. Development uses a combination of diet, lifestyle, carefully chosen supplements and other procedures to gently balance the body. This is often enough to bring about healing at the deepest levels.
- **Healing is unlimited.** By continually balancing and strengthening body chemistry for a number of years, much can be done with even very serious health conditions.
- **Healing can be done precisely in many cases, but certainly not all.** The proper use of hair analysis and development science can simplify and enlighten us tremendously about the stress response, the oxidation rate and much more. This can facilitate the design of healing

programs that seem quite simple, yet are often very effective. At times, however, other subtle and mysterious influences can overwhelm our best efforts because life is far more complex than any system of healing. Please recall this at all times in order to stay humble and avoid making any false claims and other mistakes.

- **Truth should converge.** This was a key principle of Dr. Eck's. It means that all methods of healing should produce the same end result if they truly heal the body at the deepest levels.
- **Love heals all things.** This theme was mentioned in Chapter 2. To repeat the principle, a great deal of self love is helpful or even required for the most successful healing, especially with a program such as this one that requires plenty of self-discipline to maintain a healthful diet and lifestyle.
- **Young women, even more than young men, are in very poor health today, and since the women will bear the next generation of children, we are all in trouble.** This theme is emphasized throughout this text. This needs to be repeated endlessly until the message reaches all young women, along with their parents, friends, partners, and all health authorities and national leaders as well. The present situation in the health of young mothers-to-be is quite unsustainable. Their nutrition is very poor and their drug use is increasing. Foolish medical authorities are planning even more vaccines for silly things such as to prevent a few cases of cervical cancer that are easy to prevent in safer ways that build up one's health instead of poisoning the body further.

All these factors must be changed. Otherwise, the number of developmentally delayed autistic, ADD and otherwise unhealthy children will just keep increasing until few healthy babies will be born at all. This is the most severe health tragedy of the century, so far. Yet it is one that is easily rectified by paying attention to the causes of the problem, as discussed in these pages.

APPENDIX I.

GLOSSARY OF TERMS AND CONCEPTS

Acetates - These are among the most energy-rich compounds found in foods. They are found mainly in fats and in alcohol, and are needed more by fast oxidizers, according to Dr. Eck's research.

Adaptation - This is the process by which the body constantly alters many parameters such as its temperature, glucose level and mineral levels to maintain itself optimally in response to stress.

Adrenal Burnout - When the body is no longer able to adapt or mobilize its defenses against stress, the condition is called adrenal burnout. It is usually a severe derangement of the adrenal glands. People in burnout are often tired even after many good night's sleep.

Aldosterone - Aldosterone is the major pro-inflammatory hormone produced by the adrenal cortex. It causes sodium retention and elevates sodium on a hair analysis.

Antagonistic Minerals - These are minerals that compete for absorption or utilization in the body. Common antagonisms among minerals include: copper and zinc, calcium and magnesium, and zinc and cadmium.

Anti-Inflammatory Hormones - Cortisol and cortisone are the main anti-inflammatory hormones produced by the adrenal cortex.

Biochemical or Adaptive Energy - Energy is a key concept in healing. Biochemical energy is the energy generated within each body cell in the glycolysis and citric acid cycles. The final stage of energy production results in production of ATP (adenosine triphosphate).

Biological Transmutation of the Elements - This theory states that living organisms can transform one element into another at low temperature and pressure. It is not well-accepted in the scientific community. However, simple experiments performed by Dr. Louis Kervan and others would seem to be irrefutable evidence of its truth.

Biounavailability - This is the condition in which a mineral is present in the body, but cannot be utilized. Causes for biounavailability include deficiency of a binding protein, molecular configuration of the element, valence of the element, or lack of a releasing factor or transport factor. When an element is biounavailable, one may experience symptoms of deficiency of that element as well as symptoms related to toxicity at the same time.

Breakthrough disorders - Mental and emotional disorders in which an imbalance, usually at a lower level of brain functioning, affects or 'breaks through' to a higher level of brain functioning.

Catecholamines - These are a group of powerful stimulatory (sympathetic) neurotransmitters that include epinephrine or adrenalin, norepinephrine or noradrenalin, and dopamine.

Ceruloplasmin - This is one of the main proteins that binds and transports copper in the blood. It is produced in the liver under stimulation from the adrenal glands. Without adequate ceruloplasmin, copper may become bioavailable and toxic. Metallothionein and albumin are other serum proteins that bind copper.

Coffee Enemas - Coffee can be implanted in the rectum and retained for 10 to 15 minutes in order to absorb it into the liver. The technique has been used for over 100 years to assist liver detoxification and cleansing of the large intestine. The man who popularized them was Max Gerson, MD, who wrote *A Cancer Therapy – Results Of Fifty Cases*.

Colonic irrigation – This is an ancient procedure in which water is introduced into the rectum in order to clean the large intestine or colon. It is safe, painless and often helpful for people today. It is administered by a trained colonic therapist using disposable equipment and a special machine that can be adjusted to monitor the water temperature, pressure and, at times, add items to the water to facilitate the cleansing of the colon.

Congenital - This word means present at birth. It generally refers to any condition or nutritional imbalance that develops during pregnancy, but not those that are genetic in origin. For example, cadmium toxicity passed to a baby from its mother through the placenta is an example of a congenital condition.

Cortisol - Cortisol is the major glucocorticoid hormone secreted by the adrenal cortex. It serves to raise the blood sugar level, convert starch and protein to sugar, and is a powerful anti-inflammatory hormone, among other functions.

Cybernetics - This is the science of communication and control in complex, self-regulating systems. It was first elaborated for computer systems and automatic radar-guided weapons systems in World War II. However, we use its terms daily such as ‘feedback loops’ and ‘vicious cycles’. Its principles are central to understanding development science.

Defender - A defender is a mineral whose level remains high, low or normal on a hair analysis because it is defending or maintaining another mineral level or ratio.

Diencephalon – This is the brain stem or ‘old brain’ or ‘animal brain’. It regulates the emotions and many automatic functions in the body.

Displacement - This can have two related meanings. 1) It is a process whereby one element in the body can replace another in enzyme binding sites or in organs. For example, copper can displace zinc and iron in the liver. Cadmium can displace zinc in the walls of the arteries. Lead may displace phosphorus in some sites. 2) It can mean a mineral on a hair mineral test that appears higher than it really is because another mineral has displaced it upwards. For example, a phosphorus level often looks normal, but when lead is eliminated from the body, the phosphorus level drops because lead was displacing the phosphorus.

Detoxification - This is a normal and essential function of all living organisms. In most people, this function is sluggish thanks to improper food, fatigue, and overactivity of the sympathetic nervous system. Enhancing detoxification is a primary goal in development science.

Electrolytes - These are the major minerals in the blood such as calcium, magnesium, sodium and potassium. Chloride, sulfur and phosphorus may also be included in this group of elements. These are similar to the *macrominerals*, a word used because they are the most plentiful minerals in the body.

Energy Pathway - The energy pathway is the series of steps involved in the production of energy from food. They include ingestion, digestion, absorption into the liver and body cells and conversion to ATP in the Krebs and glycolysis energy cycles.

External Stress - This is stress caused by factors outside the body. These may include physical factors (heat, cold, noise), and social, financial, occupational, family-related or other stressors.

Fast Oxidation - An early homeostatic state found mainly in young children in which adrenal and thyroid activity tend to be above the ideal level. It is associated with the alarm stage of stress in the stress theory of disease. Hair analysis indicators are a calcium/potassium ratio less than 4:1 with a sodium/magnesium ratio greater than 4.17:1.

Feedback Loops - These are complex communication links used in complex, self-regulating systems that enable an organism or machine to regulate itself. Development seeks to re-establish the normal feedback systems of the body to promote a return of health.

Fight-or-Flight Reaction - This name is given to the series of physiological changes that occur in the body in response to a threatening situation. Adrenal and thyroid gland secretions increase, resulting in an increase in the pulse, blood pressure, glucose levels and speed of reflexes. Blood is shunted to the muscles and brain, and away from the digestive and eliminative organs. The entire body is placed in a state of hypersensitivity and readiness to fight or run.

Functional Medicine – A method of healing aimed primarily at restoring normal functioning of the body, rather than chasing symptoms or killing germs, for example. Development is very much a functional medicine approach to health.

General Adaptation Syndrome or GAS - The sequence of stages and events that an organism moves through as it responds to stress. Dr. Hans Selye, MD discovered that the stress response is non-specific, meaning that it is similar no matter what the cause of the stress. He described the stages as the alarm, resistance and exhaustion stages of stress or adaptation.

General Systems Theory - A set of principles elaborated early in the twentieth century to help describe and work with complex systems. The human body is one such system. Development science uses these principles to carefully balance and alter body chemistry to restore health, often without needing to address particular symptoms.

Glucose Tolerance Test or GTT - This is the standard blood test used to determine sugar tolerance. The patient drinks a sugary liquid and then a blood sample is taken every hour for 3-5 hours. To be most accurate, the test should be performed for five or six hours, not three hours. Ideally, insulin levels should be measured along with glucose levels. A finger-stick glucose determination is not reliable because sugar levels can fluctuate rapidly.

Glycogen - This is a starchy substance that is the form in which excess glucose is stored in the muscles and liver.

Glycolysis Cycle - The 10-step glycolysis cycle is involved with the breakdown of glucose into simpler compounds, mainly pyruvate or lactate. B-complex and other vitamins and minerals are required in the glycolysis cycle. If these are deficient, the cycle may function poorly and energy output will decrease.

Homeostasis - This word, taken from cybernetics, means a state of equilibrium. Homeostatic states are states of balance or equilibrium that our bodies maintain in order to function and respond to stress from within and without. The oxidation types and the stages of stress are homeostatic states. The goal of development is to move the body from less desirable homeostatic states to more desirable and higher energy homeostatic states.

Hypoglycemia - The medical definition is low glucose in the blood. Chapter 29, however, defines it more broadly as any problem in the energy pathway or oxidation rate that impairs glucose metabolism at a cellular level. This may be due to low sugar in the blood, but has many other causes as well.

Internal Stress - This is stress caused by factors within the body. These factors might include fatigue, infections, nutrient deficiencies, toxic metals and chemicals, or structural problems. Others may be emotions such as fear, worry, anger or grief. Others are attitudes such as hatred or paranoia. Intention can also cause or reduce stress.

Inversion - A term Dr. Eck used to mean a low sodium/potassium ratio (less than 2.5:1).

17-Ketosteroids - These are breakdown products found in the urine used to measure adrenal gland activity. These can be tested in the urine. The correct way is to test for them after giving a loading dose of ACTH (adrenocorticotrophic hormone).

Krebs or Citric Acid Cycle - This is the intra-cellular cycle in which fats and amino acids are converted to ATP or adenosine triphosphate. Eighty percent of one's energy is produced in the Krebs cycle.

Macrominerals - These are the most plentiful minerals in the body. They include calcium, magnesium, sodium, potassium, and perhaps also sulfur and phosphorus.

Meditation – A general word used to describe many types of mental exercises. They might include visualization, imagery, use of chanting, prayer, mantras, affirmations and other methods. Development only recommends a specific type of non-religious mental exercise that is a dual-

focus observation exercise taught by Mr. Roy Masters of the Foundation of Human Understanding. This is available on a CD from www.drlwilson.com or one is at www.fhu.com.

Metabolism - This is the sum total of the chemical reactions that take place in the body. Metabolism is divided into two parts, anabolism (building up of body tissues) and catabolism (breaking down of body tissues).

Metallo-enzymes - These are enzymes that require minerals for their activation, inhibition, regulation or as a facilitator or actual component of the enzyme.

Mitochondria - These small structures within each body cell are the site of energy generation within the cell.

Mixed Oxidation - This is a temporary, transition and unstable state of body chemistry. Mixed oxidation is defined as a hair calcium/ potassium ratio greater than 4:1 and a sodium/magnesium ratio greater than 4.17:1, OR a calcium/potassium ratio less than 4:1 and a sodium/magnesium ratio less than 4.17:1. In mixed oxidation, the hair analysis ratios indicate that the thyroid gland is overactive and the adrenal glands are underactive, or vice versa.

Orthomolecular Nutrition - This term refers to supplementing the body with the exact amount of a nutrient that is required, rather than a set standard such as the RDA or MDR for that nutrient. It was coined by Linus Pauling, PhD. Development is a type of orthomolecular approach, though it is based on correcting the stress response and balancing mineral levels and ratios, rather than on symptom correction.

Oxidation – This means to combine with oxygen, or perhaps to burn.

Oxidation Rate - In this book, the oxidation rate refers to two ratios on a hair analysis in which the hair is not washed at the laboratory. The two ratios that determine the oxidation rate are the calcium/potassium and sodium/magnesium ratios. See Chapters 12 and 13 for more details. Other authors may define the oxidation rate completely differently.

Parasympathetic Nervous System - This is a branch of the autonomic nervous system that is associated with rest, relaxation and regeneration of the body. It may be called the 'nurturing' or 'nourishing' nervous system, as compared with the sympathetic, or fight-or-flight system. It activates the digestive, eliminative and immune responses of the body, among other things.

Pleomorphism - a theory of disease that postulates that cells can move between about 15 stages from normal to degenerated bacterial and fungal forms, depending on the terrain or cellular environment. The theory is better known in European homeopathy and among those that use live cell microscopy. Development supports this theory and may, in fact, help elaborate the biochemistry of some of the stages of cellular degeneration.

Preferred Minerals - These are the ideal minerals for each metallo-enzyme in the body. The concept of preferred minerals is essential to understand how toxic metals cause disease and what

to do about them. Development is aimed at replacing toxic or less-preferred minerals with more-preferred minerals in enzyme binding sites.

Psychological Override - This occurs when a person's stress level, attitudes, emotions or intent override or negate our best efforts to heal the body with development.

Replacement Therapy - The concept of supplementing mineral levels that read low on a hair or other type of test, while avoiding giving or even ingesting minerals that read high on the test. This is the most common way doctors use hair tests and blood tests. Dr. Eck found it works poorly, when it works at all. It does not take into account systems principles and the complex nature of the body's mineral balancing system.

Retracing - This is a process whereby old symptoms or conditions are reactivated and resolved during the process of healing. Retracing are also the temporary flare-up of old conditions or new symptoms that can occur with deep healing of the body. For example, chronic infections may go through an acute stage before they are resolved, causing pain, redness or fever. Emotional retracing also occurs with temporary flare-ups of old feelings or memories before they are released. Other words for this process are *healing reactions*, *healing crises*, *flare-ups*, *aggravations*, *catharses*, *purification reactions* and *the reversal process*.

Sauna therapy - This simple, safe and powerful healing modality is extremely useful to remove toxic metals, toxic chemicals and infections from the body. Near infrared light sauna therapy, in particular, also greatly increases circulation, assists skin detoxification and has dozens of other beneficial effects. This author has written a separate book and several articles about this topic.

Slow oxidation - This is defined in development science as a hair calcium/potassium ratio greater than 4:1 and a hair sodium/magnesium ratio less than 4.17:1. Hair must not be washed at the laboratory for accurate assessment. Other researchers may mean something different by the term. Slow oxidation is associated with sluggish adrenal and thyroid glandular activity at a cellular level, and a tendency for an overall parasympathetic state of body chemistry due to exhaustion of the sympathetic system. It is also associated with the exhaustion stage of stress or perhaps a resistance stage of stress in mild cases.

Stages of Stress - Hans Selye, MD discovered that living organisms pass through several stages as they respond to stress from within and from outside. These stages he called the alarm, resistance and exhaustion stages of stress. This is a part of the stress theory of disease.

Stress - Stress is the response of the body to stimuli. Agents that cause stress are called *stressors*. Stress is often assumed to be harmful, but this is not always true. Exercise stresses the bones and muscles, and keeps them strong. Nutrient therapy can cause positive stress on the body. Self-discipline causes a positive stress that builds health and character. See Chapter 11 for more details.

Sympathetic Nervous System - This branch of the autonomic nervous system is involved with and causes a fight-or-flight response. It stimulates the adrenal and thyroid glands, and shunts

more blood to the muscles and brain. It also overrides the parasympathetic system and shunts blood away from the digestive and eliminative organs such as the intestines, liver and pancreas.

Synergistic or Synergetic Minerals - These are minerals that cooperate together or whose levels tend to move together on a hair test. Examples of minerals that may interact synergistically include calcium and copper, or calcium and magnesium. NOTE: under different conditions, the same minerals may act as synergists or antagonists.

System - A system is a group of items, each of which affects all the others. The body is a particular type of system called a complex, self-regulating, closed system. The laws governing systems have been elaborated in general systems theory. These are discussed in Chapter 8.

Systems Theory - see General Systems Theory

Toxic Minerals - These are minerals that have no known function in the body, and are usually very harmful to the body. They include lead, mercury, cadmium, aluminum, beryllium, nickel, arsenic and a dozen or so others.

Trace Minerals - These are essential minerals that are needed in small quantities in the body. They include zinc, copper, iron, manganese, chromium, selenium, silicon, iodine, cobalt, lithium, molybdenum and others.

Tuning disorders - These are mental and emotional disorders that appear to arise because the mind or brain can 'tune' itself to various dimensions and frequencies. This may result in hallucinations, delusions, schizophrenia, narcissism or psychopathic tendencies.

Vicious cycles - These are feedback loops in which a change in one direction feeds back and results in even more change in the same direction. Vicious cycles destabilize the body and lead to death unless they are interrupted. They are also called positive feedback loops in cybernetic theory. Ending vicious cycles and restoring normal feedback loops in the body is a prime objective of development science.

Yin and Yang - In Taoist and Chinese philosophy, these are the complementary opposites that create all else in the physical world. The idea is also in the Hebrew bible in Genesis, Chapter 1, when it states that God created the heavens and the earth, the land and the sea, light and dark, male and female. From this came all else.

Yin and yang refer to basic tendencies and states of matter such as expanded and contracted, centrifugal and centripetal, hot and cold, or male and female. The concept of yin and yang can be applied to our food, our lifestyles, rest and activity, fast and slow oxidation, and many other aspects of life. It is one of the most vital concepts used in development. However, Dr. Eck did not speak of it much, except in regards to the oxidation rate.

APPENDIX II. THE MINERAL REFERENCE GUIDE

THE MACROMINERALS

CALCIUM

GENERAL

Divalent cation, extremely alkaline-forming, main structural element in the body, extracellular element, found with magnesium that helps keep it in solution.

SOURCES OF CALCIUM

Seafood - sardines, caviar, smelt

Animal products - egg yolks, bone soup

Nuts/seeds - almonds, sesame seeds, filberts

Vegetables - carrots, carrot juice, kale, collards, mustard greens, turnip greens

Dairy - raw, certified cheeses, milk, yogurt, kefirs (pasteurized or homogenized is not nearly as good)

Miscellaneous - molasses, kelp, brewer's yeast, torula yeast. Hard water contains more calcium, but this does not raise hair levels, as a rule.

ROLES IN THE BODY

- *Bones and teeth* - 99% of our calcium is found here.
- *Cell Membrane Regulation* - affecting cell permeability, muscle contraction and nerve impulse conduction.
- *Body Fluid Regulation* - affecting blood clotting, acidity and alkalinity.
- *Regulation of cell division*
- *Regulation of hormone secretion* - insulin

FUNCTIONS OF CALCIUM

Circulatory - excites the heart, constricts small blood vessels

Excretory - inhibits water loss

Digestive - in excess, is constipating

Nervous - slows nerve impulse transmission

Reproductive - required for normal cell division

Endocrine - inhibits release of thyroid-releasing and other pituitary hormones

Blood - stimulates blood formation and is required for blood clotting

Muscular - reduces muscular irritability and contractibility

Skeletal - main component of bone

Metabolic - required for phosphorus metabolism and energy production in the Krebs cycle.

Detoxification - inhibits uptake of lead, antagonizes cadmium.

Cellular - decreases permeability of cells to sodium and potassium ions.

METALLOENZYMES

- Troponin - muscle contraction
- Adenyl cyclase - inhibition of cyclic AMP

- Kinases - phosphate metabolism
- Choline esterase - destruction of acetylcholine
- Prothrombin - blood clotting
- Lipase - fat digestion
- Succinic dehydrogenase - Krebs cycle
- ATPase - energy release

CALCIUM DEFICIENCY SYMPTOMS

fast oxidation	fight-or-flight reaction
muscle cramps and spasms	insomnia
tooth decay	bruising
irritability	high blood pressure
nervousness	osteoporosis
anxiety	increased tendency to absorb
hyperkinetic behavior	lead and cadmium

SYMPTOMS ASSOCIATED WITH A CALCIUM EXCESS

slow oxidation	kidney stones
fatigue	gall stones
apathy	arthritis
depression, mental	hardening of the arteries
withdrawal, social	constipation

SYNERGISTIC NUTRIENTS

Absorption - vitamin A and D, stomach acidity, protein in the diet
Utilization - magnesium, copper, vitamin C

ANTAGONISTIC NUTRIENTS

Absorption - fluoride, low stomach acidity, low protein in diet, phosphorus in excess
Utilization - lead, cadmium, sodium, potassium, high protein diet does not necessarily increase calcium loss in urine.

HAIR ANALYSIS NOTES

High hair tissue calcium:

- Associated with a slow oxidation rate, fatigue, depression and an exhaustion stage of stress.
- Often indicates that calcium is leaving the blood and accumulating in the soft tissues of the body. This is called biounavailable calcium.
- An indicator of *hidden copper toxicity*.
- High calcium on a retest often means the body is eliminating excess biounavailable or “metastatic” calcium.
- Often reflects low thyroid and adrenal glandular activity.
- A level above about 170 mg%, especially on a first test, indicates a *calcium shell pattern* on a hair analysis. Hair must not be washed at the lab for accurate calcium readings.

Low hair tissue calcium:

- Associated with a fast oxidation rate and an alarm stage of stress.
- Associated with excessive thyroid and adrenal glandular activity, anxiety and irritability.
- Often indicates calcium is being lost in the urine.
- Associated with copper deficiency.

REASONS FOR CALCIUM SUPPLEMENTATION

- To slow the oxidation rate.
- To help remove lead, cadmium and other toxic metals and toxic chemicals.
- To balance key mineral ratios.
- To replace calcium being lost either into the tissues or through the urine.
- Symptomatic - for muscle cramps, irritability, insomnia, anxiety, or osteoporosis.
- Well-absorbed forms include chelates, citrate, lactate and perhaps others. Carrots and raw, certified dairy are excellent as well. Carbonates are very alkaline and not considered as good.

MAGNESIUM

GENERAL

Divalent cation, extremely alkaline-forming mineral, a major enzyme activator of the body, intracellular, paired with calcium and with potassium, deficient in most diets.

SOURCES OF MAGNESIUM

Nuts - almonds, brazil nuts, cashews

Vegetables - soybeans, parsnips

Grains - buckwheat, wheat bran, wheat germ, other grains

Misc. - chocolate, cocoa, molasses, brewer's yeast, kelp

ROLES IN THE BODY

- *Skeleton* - sixty percent of tissue magnesium is located in the skeleton.
- *Intracellular mineral* - Most of the rest is within the cells.
- *Enzyme Activation within the cells* - magnesium is essential for energy production, and protein synthesis. Magnesium is required for the activation or structure of more enzymes than any other mineral. Many magnesium-dependent enzymes cannot use any other mineral as a replacement for magnesium.
- *Regulation of Cell Membranes* - permeability, muscle contraction, nerve impulse conduction and antagonism to calcium.

FUNCTIONS OF MAGNESIUM

Excretory - prevention of kidney stones

Digestive - laxative

Nervous - maintains nerve conduction

Muscular - prevents tissue calcification, needed for muscle contraction

Skeletal - required for bone formation

Metabolic - required for energy production, for glucose and fat metabolism, and for protein synthesis

Detoxification - required for liver activity

METALLOENZYMES

- Phosphokinases, carboxylase and pyruvate oxidase - glucose metabolism
- Thiokinases, glucokinase and myokinase - fatty acid degradation
- Phosphatases, alkaline phosphatase, pyrophosphatase - phosphate metabolism
- Enolase, isocitric dehydrogenase - glucose metabolism
- Peptidases - split peptides

MAGNESIUM DEFICIENCY SYMPTOMS

fast oxidation rate	fast heart rate
kidney stones	irregular heart beat
irritability	high blood pressure
anxiety	muscle cramps, especially
hyperkinetic behavior	after exercising
tissue calcification	muscle spasms
seizures	

MAGNESIUM EXCESS SYMPTOMS

slow oxidation rate	diarrhea
fatigue	low blood pressure
lethargy	muscle weakness
confusion	depression, mental

SYNERGISTIC NUTRIENTS

- Vitamin D, lactic acid, lactose, high protein diet.
- Potassium may be synergistic or antagonistic depending on the situation.

ANTAGONISTIC NUTRIENTS

Absorption - phytates found in grains, fluoride, phosphorus, low-protein diet.

Utilization - calcium. Drinking alcohol lowers magnesium levels. Junk food diets are often low in magnesium.

HAIR ANALYSIS NOTES

High hair tissue magnesium:

- Often associated with a slow oxidation rate, fatigue and depression.
- A high magnesium level often indicates that magnesium is being lost through the hair, resulting in deficiency symptoms such as anxiety and irritability.
- An increase on a hair analysis retest may indicate an elimination of toxic or bioavailable forms of magnesium from the body through the hair due to a development program.

Low hair tissue magnesium:

- Often associated with a fast oxidation rate, anxiety, irritability, belligerence and high-strung personality. Hair must not be washed at the lab for accurate magnesium readings.

REASONS FOR MAGNESIUM SUPPLEMENTATION

- To prevent calcium build-up in body tissues.

- To enhance energy production & raise low sodium levels.
- To offset dietary deficiency.
- To enhance many magnesium-dependent enzyme systems.
- Symptomatic - for energy, muscle tightness or cramps, laxative, or irritability.
- Well-absorbed forms include chelates, citrate, glycinate and perhaps others. Oxide is considered less well absorbed.

POTASSIUM

GENERAL

Monovalent cation, solvent mineral, alkaline-forming mineral, intracellular regulator, heart regulator with magnesium. **Toxic potassium** is picked up from superphosphate fertilizers by fruits and is one reason I don't recommend any fruit. Children are all born with toxic potassium from their mothers' bodies. As it is eliminated, children mature.

SOURCES OF POTASSIUM

Seafood - halibut, herring, ling cod, sardines

Nuts/seeds - pecans, sesame, sunflower, walnuts, almonds, brazil nuts, cashews, chestnuts, filberts, peanuts

Fruits - avocados, dates, figs, prunes, raisins

Vegetables - watercress, garlic, horseradish, lentils, parsley, potatoes, spinach, artichokes, lima beans, beet greens, Swiss chard, collards.

Grains - buckwheat, rye, wheat bran

Miscellaneous - chocolate, molasses, mushrooms, kelp, yeast, salt substitutes. Some water softeners contain potassium and this rarely will elevate hair levels.

ROLES IN THE BODY

- Intracellular fluid balance
- Cell membrane effects such as muscle contraction, nerve impulse conduction, and cell permeability.

FUNCTIONS OF POTASSIUM

Circulatory - lowers heart rate, dilates arteries, can reduce blood pressure

Excretory - maintains acid-base balance

Digestive - increases digestive tract activity

Endocrine - helps raise aldosterone and other hormones. Dr. Eck stated that it helps sensitize the tissues to thyroid hormone.

Metabolic - involved in carbohydrate metabolism

METALLOENZYMES

- Na-K-ATPase - sodium pump mechanism
- Glycolytic enzymes - anaerobic metabolism
- Oxidative phosphorylation enzymes - cell respiration

POTASSIUM DEFICIENCY SYMPTOMS

fatigue and slow oxidation
skin problems

irregular heart beat
constipation

water retention
low blood sugar

allergies, low blood sugar
muscle weakness

POTASSIUM EXCESS SYMPTOMS

high blood sugar (diabetes)
fast oxidation
weakness, muscle

depression, mental
muscle spasms

SYNERGISTIC NUTRIENTS

magnesium, zinc

ANTAGONISTIC NUTRIENTS

Calcium, processed food diets are low in potassium
Magnesium may be synergistic and antagonistic at times.

HAIR ANALYSIS NOTES

Hair must not be washed at the laboratory to obtain accurate potassium readings.

High hair tissue potassium:

- Associated with a fast oxidation rate.
- May indicate trend for high sugar and glucocorticoid levels.
- Very high potassium may be a potassium loss due to excessive tissue breakdown.
- Use of a water softener can raise the hair potassium.
- A temporary rise in the hair potassium during a development program can be due to the elimination of *toxic potassium*. For more information, go to www.drlwilson.com.

Low hair tissue potassium:

- Indicates adrenal gland exhaustion
- Very low potassium is associated with allergies, fatigue, low blood sugar, sweet cravings, and low blood pressure.
- Potassium levels of 1 to 4 mg% indicate a *sympathetic dominant pattern* on a hair analysis.

REASONS FOR POTASSIUM SUPPLEMENTATION

- Supplements not needed if the diet is high in potassium foods such as unrefined grains and vegetables.
- Can use for irregular heart beat and other cardiac distress associated with low potassium.
- Doctors give it when one takes diuretic drugs that deplete potassium.
- Potassium aspartate, along with magnesium aspartate, may help arrhythmias and other heart problems.

PHOSPHORUS

GENERAL

Energetic, fiery, acid-forming mineral. It is unstable in its elemental form, so it is always found in the body in the form of phosphates and other compounds. Phosphorus is present in all proteins, paired with nitrogen and, at times, with sulfur.

SOURCES OF PHOSPHORUS

Seafood - tuna, mackerel, pike, red snapper, salmon, sardines, whitefish, scallops, shad, smelt, anchovies, bass, bluefish, carp, caviar, eel, halibut, herring, trout.

Meats - liver (beef, chicken, hog, lamb), rabbit, sweetbreads, turkey, beef brains, chicken, eggs, lamb heart, kidney.

Nuts/seeds - pinon, pistachios, pumpkin, sesame, sunflower, walnuts, almonds, brazils, cashews, filberts, hickory, peanuts, pecans.

Vegetables - chickpeas, garlic, lentils, popcorn, soybeans

Dairy - cheeses

Grains - wheat bran and germ, wild rice, buckwheat, millet, oats, oatmeal, brown rice, rice bran, rye, wheat

Miscellaneous - chocolate, kelp, yeast, bone meal

ROLES IN THE BODY

- *Bone structure* - 80-85% of phosphorus in the body is located in the bones and teeth.
- *Energy production* - (ATP - adenosine triphosphate and ADP - adenosine diphosphate)
- *Cell membranes* - (as phospholipids)
- *Genetic reactions* - in DNA - deoxyribonucleic acid and RNA - ribonucleic acid.
- *Buffering agent, to maintain osmotic pressure*

FUNCTIONS OF PHOSPHORUS

Digestive - regulates absorption of calcium and a variety of trace elements. Phosphorus in excess has a laxative action

Nervous - source of adenosine triphosphate (ATP), component of the myelin sheath

Endocrine - interacts with vitamin D

Blood - red blood cell (RBC) metabolism

Muscular - adenosine triphosphate (ATP) needed for muscle contraction

Skeletal - component of bone and teeth

Immune - adenosine triphosphate (ATP) for leukocytes

Metabolic - energy production via phosphorylation reactions

Detoxification - in liver - via adenosine triphosphate (ATP)

METALLOENZYMES

- Pyruvate carboxylase - glucose metabolism
- Dehydrogenases - oxidative phosphorylation (energy metabolism)
- Microsomal mixed function oxidases - detoxification
- Cytochrome C reductase, L-amino oxidase, flavoprotein enzymes - oxidation-reduction
- Transferases, pyruvate dehydrogenase - carbohydrate metabolism
- Thiokinases, thiolases - fatty acid metabolism
- ATP-ases, phosphorylases, polymerases, synthetases - protein and nucleic acid synthesis
- Lecithin synthetases - lecithin synthesis
- Transmethylases, reductases, mutases, dehydrases - nucleic acid metabolism

PHOSPHORUS DEFICIENCY SYMPTOMS

arthritis

fragile bones

fatigue

stunted growth

reproductive problems
weakness, muscle

tooth decay
rickets, osteomalacia

PHOSPHORUS EXCESS SYMPTOMS

anemia (iron deficiency)
arthritis
zinc deficiency
diarrhea
parathyroid dysfunction

hyperexcitability
tremors
irritability
calcium and magnesium
deficiency

SYNERGETIC NUTRIENTS

- *Absorption* - sodium, potassium, low calcium diet, vitamin D, parathyroid hormone, high fat diet
- *Metabolic* - calcium, magnesium, B-complex vitamins (in energy production)

ANTAGONISTIC NUTRIENTS

- *Absorption* - calcium, aluminum, iron, magnesium, vegetarian diets, vitamin D deficiency

HAIR ANALYSIS NOTES

High hair tissue phosphorus

- Frequently indicates mildly excessive tissue breakdown. As proteins break down, phosphorus is released.
- May occur during development programs and may be a karmic release pattern.
- May increase temporarily as toxic metals are being eliminated and poor quality tissue breaks down in the course of a nutrition program.
- Pubic hair samples often reveal elevated and erratic phosphorus readings.

Low hair phosphorus

- Associated with a catabolic state of body chemistry. This means impaired protein synthesis in which the breakdown or catabolic body functions exceed the synthesizing or anabolic aspects. This may be due to a low protein in the diet, improper types of proteins such as vegetarian sources, for example, impaired protein digestion, impaired absorption of amino acids and peptides and/or impaired protein synthesis in the liver and elsewhere.
- Vegetarians often have low phosphorus readings, perhaps due to low protein diets or lower quality proteins in the diet or intestinal infections such as candida albicans associated with copper imbalance.
- Zinc is important for protein synthesis. A low phosphorus level is associated with a zinc deficiency and low hair zinc. When these imbalances are corrected, the phosphorus level often improves.
- May be due to digestive enzyme deficiency, low hydrochloric acid level, or other reasons.
- A phosphorus level less than about 12 mg% often indicates *lowered vitality*.

SODIUM

GENERAL

Monovalent cation, highly water-soluble and alkaline-forming mineral, *the body's main solvent element*.

SOURCES OF SODIUM

Seafood - tuna, clams, caviar, lobster, sardines, scallops, shrimp

Meats - brains, eggs, beef kidneys, beef liver

Vegetables - beet greens, celery, Swiss chard, olives, peas

Dairy - butter, buttermilk, cheeses

Miscellaneous - pickles, table salt, soy sauce, steak sauce, kelp, brewer's yeast, drinking water from water softeners. Processed and fast foods are often very high in salt. Eating salt, however, often does not elevate hair sodium readings

ROLES IN THE BODY

- Extracellular element involved in fluid balance
- Regulation of blood pressure
- Regulation of cell membrane permeability.

FUNCTIONS OF SODIUM

Circulatory - maintenance of blood pressure, increases heart rate.

Excretory - helps maintain acid-base balance.

Digestive - required to produce hydrochloric acid in the stomach.

Endocrine - reduces aldosterone secretion.

Detoxification - keeps toxic substances in solution.

SODIUM DEFICIENCY SYMPTOMS

fatigue	depression, mental
weakness	apathy
low blood pressure	poor protein digestion
slow oxidation rate	bloating, abdominal
low hydrochloric acid level	allergies
anorexia	dizziness

SODIUM EXCESS SYMPTOMS

high blood pressure	nervousness
water retention	lowers calcium and magnesium
irritability	fast oxidation rate
headache	

SYNERGISTIC NUTRIENTS

Absorption - glucose, absorption not a problem in almost everyone

Metabolic - manganese, chromium, vitamin C, E, and B-complex, adequate adrenal and thyroid activity

ANTAGONISTIC NUTRIENTS

Absorption - calcium

Metabolic - zinc, choline, inositol, low adrenal activity

HAIR ANALYSIS NOTES

Sodium is an adrenal-related mineral. Dr. Eck called it the volatility mineral because it is associated with aldosterone activity

High hair tissue sodium:

- Indicative of excessive adrenal gland activity.
- Often indicates excitability and fast oxidation.
- Sodium levels can be elevated by toxic metals, especially cadmium, lead, arsenic and by the three amigos or friends – manganese, iron and aluminum. These may be hidden on hair tests, especially in most slow oxidizers.

Low hair tissue sodium:

- Excellent indicator of impaired adrenal and thyroid glandular activity.
- Very low sodium is indicative of adrenal exhaustion.
- Indicates sodium loss through the kidneys due to low aldosterone and perhaps due to low rennin-angiotensin.
- Hair must not be washed at the laboratory for accurate sodium readings.

SUPPLEMENTING SODIUM

Slow oxidizers with low sodium levels and low blood pressure often feel better when they use natural sea salt in cooking. Salt consumption can be harmful if excessive, or if blood pressure is elevated.

SULFUR

GENERAL

Fiery element, acid-forming, structural and “cleansing” mineral, connective tissue component, very abundant in the body.

SOURCES OF SULFUR

Meat/fish/fowl - lean beef, clams

Dairy - egg yolk, milk

Vegetables - cabbage, Brussels sprouts, kale, cauliflower, watercress, horseradish and other radish family vegetables

Grains/beans - wheat germ, dried beans

FUNCTIONS OF SULFUR

- Protein structures - cysteine, methionine, glutathione and taurine contain sulfur. Disulfide bonds form tertiary protein structures.
- Collagen synthesis.
- Energy production.
- Oxidation-reduction reactions.
- Bile secretion and detoxification through the liver.
- Keratin production - hair, skin and nails.
- Insulin production.
- Heparin production.
- Co-factor with thiamine, pantothenic acid, biotin and lipoic acid.

DEFICIENCY SYMPTOMS

Possible symptoms of organic sulfur deficiency include joint pain, fibromyalgia and irritability. Skin, hair and nail conditions may be related to inadequate organic sulfur intake.

TOXICITY SYMPTOMS

Rare from food-based sulfur. Inorganic sulfur and mineral sulfur are toxic. They may cause anemia, impaired digestion, skin rashes and destruction of body proteins.

SYNERGISTS

Molybdenum, B-complex vitamins, combines with many elements.

ANTAGONISTS

Copper

REASONS FOR SUPPLEMENTATION

- Radishes and the cabbage family of foods, and other sulfur-bearing herbs or amino acids helpful to reduce all toxic metals and especially for copper toxicity
- Symptomatic - methylsulfonylmethane (MSM) used for joint problems to assist rebuilding of cartilage
- Chelating agents are sulfur compounds such as EDTA, DMPS, DMSA and others. I do not recommend these often as they are somewhat toxic and not needed in most cases

HAIR ANALYSIS NOTES

Hair, skin and nails have the highest sulfur content of any body tissues. Hair sulfur level is not that important in my experience

THE TRACE MINERALS***BORON*****GENERAL**

An important element in plants, and less important in human beings.

SOURCES OF BORON

Leafy vegetables, fruits, nuts, legumes, wine, cider, beer and bone extracts.

FUNCTIONS IN THE BODY

- Increases production of estrogen and testosterone
- Helps prevent osteoporosis and post-menopausal symptoms such as hot flashes in some cases
- May be necessary for growth (animal experiments)

DEFICIENCY SYMPTOMS

Osteoporosis, hot flashes and vaginal dryness in post-menopausal women

TOXICITY SYMPTOMS

Low toxicity. In animals, excessive intake affects calcium metabolism and may cause osteoporosis and increased urinary excretion of riboflavin.

HAIR ANALYSIS NOTES

- Correlation between hair levels and total body load is not confirmed
- Hair analysis may not be helpful to assess boron

CHROMIUM**GENERAL**

Blood sugar regulating mineral, alkaline-forming element, deficiency is almost universal today, and appears to become worse with age.

SOURCES OF CHROMIUM

Seafood - oysters

Meats - calves' liver, egg yolk

Nuts/seeds - peanuts

Fruit - grape juice

Dairy - American cheese

Grains - wheat and wheat germ

Miscellaneous - brewer's yeast, black pepper, molasses

ROLES IN THE BODY

- *Glucose tolerance factor* - chromium required for blood sugar levels and energy levels.
- *Cholesterol regulation*
- *Other possible roles involved in the synthesis of DNA*

FUNCTIONS OF CHROMIUM

Circulatory - serum cholesterol regulation

Digestive - sugar and carbohydrate utilization (via insulin)

Nervous - maintenance of nervous system by regulation of blood sugar

Eyes - corneal clarity

Muscular - supplies energy for muscular contraction

Skeletal - essential component of bones and hair

Protective - immune system (via insulin)

Metabolic - fat, protein, and carbohydrate metabolism regulation

METALLOENZYMES

Phosphoglucomutase - glucose metabolism

CHROMIUM DEFICIENCY SYMPTOMS

atherosclerosis

fatigue, diabetes

depressed growth

elevated serum cholesterol

hypoglycemia

diabetes

CHROMIUM EXCESS SYMPTOMS

asthma	kidney damage
allergies	sinusitis
calcium deficiency	ulcers
causes an iron deficiency	nausea, vomiting

SYNERGETIC NUTRIENTS

insulin, glucose, magnesium, vitamin B6, zinc, manganese, oxalates, salicylates

ANTAGONISTIC NUTRIENTS

Absorption - iron, manganese, zinc, vanadium, phytates

Metabolic - glucagon

HAIR ANALYSIS NOTES

High hair tissue chromium:

- Usually bioavailable, unless due to frank toxicity, which is rare.
- Occasionally rises on a retest due to its release from tissue storage sites. This is likely the release of a bioavailable form of chromium, perhaps an oxide or other toxic form. This usually occurs along with a release of bioavailable manganese, iron and perhaps aluminum, as these elements often move together in the body. All may take toxic and unavailable forms in the body, perhaps to stimulate or irritate the adrenals when the body is in a resistance or exhaustion stage of stress.

Low hair tissue chromium:

- Often due to chromium deficiency, which is common in modern diets. It becomes worse if one eats refined flour and sugar that tend to deplete chromium.
- Excessive iron intake is a possible cause for low chromium levels.

REASONS FOR CHROMIUM SUPPLEMENTATION

- To raise sodium.
- Superb for glucose intolerance, diabetes, hypoglycemia, fatigue, or elevated cholesterol.
- All common forms of chromium such as chelates, yeast-based GTF chromium, picolinate and hexaniacinate appear to be well-absorbed.

COBALT

GENERAL

Alkaline-forming element, minor trace mineral for development, but important for B12 synthesis.

SOURCES OF COBALT

Seafood - sardines, salmon, herring

Meat/Organs - liver, kidney

Nuts/seeds - peanuts

Vegetables - peas, okra

Dairy - butter

Grains - buckwheat, wheat bran, wheat germ

Miscellaneous - molasses, raw sugar, cornstarch, cornmeal

FUNCTIONS OF COBALT (and vitamin B12)

Circulatory - increases cardiac glycogen

Excretory - stimulates erythropoietin in kidney

Respiratory - maintains red blood cell production

Digestive - maintains gastrointestinal mucosa

Nervous - maintains myelin sheath

Special Sensory - maintains vision and coordination

Reproductive - prevents congenital abnormalities and gametogenesis

Endocrine - release of glucagon, erythropoietin and T4, inhibition of insulin

Muscular - muscle homeostasis and control

Skeletal - maintains bone marrow and skin

Metabolic - nucleic acid, protein and lipid synthesis

Detoxification - methylation and sulfhydryl reactions

METALLOENZYMES

- Glycylglycine dipeptidase - hydrolyzes dipeptides
- Catalase (in bacteria) - breaks down hydrogen peroxide
- Pyrophosphatase (in bacteria) - converts pyro- to orth-PO₄

DEFICIENCY SYMPTOMS

pernicious anemia, a megaloblastic anemia

central nervous system damage

glossitis, sprue

TOXICITY SYMPTOMS

congestive heart failure

polycythemia

neurological abnormalities

insulin inhibition

pericardial effusion

thyroid dysfunction

SYNERGISTS

copper, zinc, iodine, molybdenum, iron deficiency, vitamin C, folic acid

ANTAGONISTS

iron, manganese, protein in diet

SUPPLEMENTATION

Because of toxicity, supplementation should be avoided in favor of supplementation with the much safer chelated form -vitamin B12.

HAIR ANALYSIS NOTES

Significance of hair cobalt levels unknown.

COPPER

GENERAL

Valence +2 or +3, emotional mineral, alkaline-forming mineral, more recent 'female' element as it is needed for fertility and associated with estrogen levels.

SOURCES OF COPPER

Seafood - oysters, crabs, bluefish, perch, lobster

Meats - calf, duck, lamb, pork, beef liver and kidneys

Nuts/seeds - almonds, pecans, walnuts, filberts, brazils, sesame, sunflower, pistachio

Vegetables - soybeans

Grains - wheat germ and bran

Miscellaneous - yeast, gelatin, bone meal, corn oil, margarine, mushrooms, chocolate

Other sources - copper water pipes, copper sulfate added to drinking water, copper compounds used in swimming pools, mineral supplements (especially pre-natal vitamins), copper cookware and tea kettles, birth control pills and patches, use of estrogen and other hormone supplements, copper intrauterine devices, vegetarian diets, stress, exhaustion of the adrenal glands.

Many children are born today with excessive copper passed to them from their mothers in utero.

ROLES IN THE BODY

- *Energy production*
- *Female reproductive system*
- *Blood formation*
- *Connective tissues*

FUNCTIONS OF COPPER

Circulatory - structure of blood vessels, aorta and heart muscle

Blood - formation of hemoglobin

Nervous - maintenance of the myelin sheath on nerves

Reproductive - essential for fertility, menstrual cycle

Endocrine - synthesis of stimulatory neurotransmitters

Muscular/skeletal/skin – bone, connective tissue, skin, hair, nails

Immune system - necessary for the immune system

Energy - energy production (the electron transport system)

METALLOENZYMES

- Cytochrome C oxidase - myelin and catecholamine synthesis
- Superoxide dismutase - superoxide degradation
- Ceruloplasmin (ferroxidase) - iron oxidation and mobilization
- Tyrosinase - melanin formation
- Uricase - allantoin formation
- Dopamine B-hydroxylase - norepinephrine synthesis
- Lysyl oxidase - elastin and collagen crosslinking
- Diamine oxidase - oxidative deamination

COPPER DEFICIENCY SYMPTOMS

anemia	hair loss
atherosclerosis	impaired collagen formation
fatigue	aneurysms
demyelination of nerves	low female hormone production
diarrhea	loss of hair color
edema	osteoporosis

COPPER EXCESS SYMPTOMS

acne	hypertension
adrenal insufficiency	hyperthyroidism
allergies	hypochlorhydria
alopecia	hypoglycemia
anemia	infections
anorexia	inflammation
anxiety	insomnia
arthritis	mind racing
autism	mood swings
cholesterol, elevated	multiple sclerosis
cancer	myocardial infarction
cystic fibrosis	nausea
depression, mental	pancreatic dysfunction
diabetes	premenstrual tension
estrogen (imbalance)	schizophrenia
fatigue	sexual inadequacy
fears	spaciness
fractures, bone	strokes
headaches (migraine)	tooth decay
hemorrhages	urinary tract infections
heart disease	vitamin deficiencies
hyperactivity	

SYNERGETIC NUTRIENTS

Absorption - protein in the diet.

Metabolic - copper and calcium levels often rise and fall together. Estrogen and copper levels may correlate in many instances. Zinc in some instances.

ANTAGONISTIC NUTRIENTS

Absorption - zinc, manganese, iron, calcium, molybdenum, sulfur, mercury, cadmium, vitamin C

Metabolic - zinc, vitamin C, vitamin B6, sulfur, molybdenum, manganese, iron

HAIR ANALYSIS NOTES

- *A normal or low hair copper level is an inaccurate indicator of copper metabolism. Too many factors can influence it.*

- *Fast Oxidation:* Fast oxidizers are often deficient in copper. All fast oxidizers, in Dr. Eck's research, require additional copper.
- *Low sodium/potassium ratio.* Those with a low sodium/potassium ratio require extra bioavailable copper, as theirs is usually high but not available.
- *Slow oxidizers* have either high copper or bioavailable copper. Bioavailable causes a combination of symptoms of copper toxicity and deficiency.
- *Biounavailable copper indicators.* These may include a slow oxidation rate, four lows pattern, a low sodium/potassium ratio and often whenever the copper level is greater than 2.5mg% or less than 1 mg%.
- *Hidden Copper Toxicity:* Copper is often normal on hair tests, but may actually be locked in other body tissues. Copper accumulates in the brain, liver and female organs first and causes a variety of symptoms. Hair analysis indicators of a hidden copper imbalance are:

calcium greater than 70 mg%	four lows pattern
potassium level less than 4 mg%	zinc less than 12 mg%
sodium/potassium ratio less than 2.5:1	copper less than 1 mg% in slow oxidizers
mercury greater than 0.03 mg%	usually, phosphorus less than 12 mg%

High hair tissue copper:

- Usually indicates toxicity and/or bioavailability.
- On a hair analysis retest, it often indicates an elimination through the hair.

Low hair tissue copper:

- Less than 1.0 mg% in a slow oxidizer indicates hidden copper toxicity or bioavailability.
- Often indicates deficiency in a fast oxidizer.

REASONS FOR SUPPLEMENTATION WITH COPPER

- To raise a low sodium/potassium ratio.
- To enhance retention of calcium in tissues and to raise the hair calcium level.
- To help reduce a fast oxidation rate.
- To raise the sodium/potassium ratio.
- Symptomatic - for gout, threatened miscarriage, some cases of PMS and perhaps some infections.

IRON

GENERAL

Valence +2 or +3, strength and hardness mineral, a 'male' and an acid-forming element.

SOURCES OF IRON

Seafood - clams, oysters

Meats - liver and kidneys, beef, reindeer meat

Nuts/seeds - pistachio, pinon nuts, black walnuts, sesame, sunflower, pumpkin seeds

Vegetables - irish moss, chives, parsley, soybeans

Grains - wheat germ and bran, rice bran

Miscellaneous - red wine, black strap molasses, sorghum syrup, bone meal, yeast.
 Vitamins with iron, white flour products and iron cookware may cause elevated iron in the body.

ROLES IN THE BODY

- *Oxygen Transport* - iron is part of the hemoglobin molecule that carries oxygen in the blood
- *Cellular Energy Production* - iron is required in the final steps of the electron transport system to produce ATP.
- *Removal of Harmful Free Radicals* - the catalase enzyme system requires iron.

METALLOENZYMES

- Cytochrome (C) oxidase - heme formation
- Catalase, glutathione peroxidase, peroxidase (hepatic) - detoxification
- Succinic dehydrogenase, NAD dehydrogenase - electron transport
- Xanthine oxidase - electron transport

METALLO-PROTEINS

Hemoglobin, myoglobin, ferritin, hemosiderin, transferrin

DEFICIENCY SYMPTOMS

Fatigue	slow oxidation
hydrochloric acid deficiency	pallor
weakness	low blood pressure
brittle or ridged nails	anemia
decreased resistance	dizziness

IRON EXCESS SYMPTOMS

liver disease	schizophrenia
cancer	emotional problems
iron deposits in organs	high blood pressure
diabetes	myasthenia gravis
arthritis	hemochromatosis
cirrhosis of the liver	hemosiderosis

SYNERGETIC NUTRIENTS

Absorption - acid foods, animal foods, vitamin C, alcohol, glucose and other sugars
Utilization - copper, vitamin B12

ANTAGONISTIC NUTRIENTS

Absorption – phytates in poorly cooked grains, phosphate, egg protein, manganese, zinc, nickel, chromium, copper, calcium, magnesium, cadmium, vegetarian diets, taurine.

HAIR ANALYSIS NOTES

Iron is a masculine mineral, but not as advanced as zinc. Hair iron levels are not helpful when normal or low. Excess, usually biounavailable iron is often present, especially in slow

oxidizers. However, it is often not high on the hair analysis. Look to an elevated manganese or aluminum as indicators of excess, usually biounavailable iron in the body.

High hair tissue iron:

- Often associated with feelings of anger and hostility.
- More often revealed on fast oxidizer hair analyses and almost always present, but hidden in slow oxidizers.
- Associated with aluminum greater than .1 mg% or manganese greater than 0.04 mg%. These minerals, along with iron, are called the 'amigos' or 'friends'.
- Iron toxicity is usually worsened by eating flour products enriched with iron, too much red meat, iron tablets or more rarely continual use of iron cookware or excessive iron in drinking water.
- High tissue iron supports the sodium reading and adrenal activity, perhaps by irritating the adrenals or the nervous system. Iron toxicity is far more common than is diagnosed by medical doctors. Medical diagnosis is difficult and may require an invasive liver biopsy.

Low hair tissue iron:

- Most often associated with a slow oxidation rate.
- The tissue iron is often high, but hidden and biounavailable.
- Low hair iron does not necessarily indicate anemia.
- Iron tablets will often not raise hair iron levels.

REASONS FOR IRON SUPPLEMENTATION

- To correct deficiencies that may occur during pregnancy, in women with heavy periods, in strict vegetarians, or in a few malnourished children and even adults.
- Deficiency rarely arises due to hidden intestinal bleeding, injury, accidents, surgeries or other causes of blood loss.
- Many people take iron who should not take it, causing iron toxicity. Iron is easily obtained from meats, eggs and green vegetables. The body retains iron very well.

LITHIUM

GENERAL

Brain protective nutrient, very alkaline-forming element.

SOURCES OF LITHIUM

- Deficient in refined foods.
- Some is found in a wide variety of foods.

FUNCTIONS OF LITHIUM

- Decreases manic symptoms in manic-depressive patients
- May modulate the conversion of essential fatty acids into prostaglandins
- May stabilize serotonin transmission
- Anti-aggressive action
- Protective of the brain and central nervous system against a variety of toxic agents and may be helpful with neurological disorders

ROLES IN THE BODY

Research by Frazier found that those patients who were helped by lithium experienced increased uptake of sodium through their cell membranes. According to Sheard, lithium can replace sodium in the cells, and its structure resembles calcium and magnesium. It appears to have the same stabilizing effect on nerve cells as calcium and magnesium.

DEFICIENCY SYMPTOMS

excessive aggressiveness
depression, manic states

TOXICITY SYMPTOMS

disturbed mineral transport	tremors
excessive urination	thirst
fluid balance	confusion
thyroid swelling	disorientation
nausea	delirium
weight gain	skin eruptions
vomiting	possible kidney damage
drowsiness	seizures, coma and death.

ANTAGONISTS

Absorption – most other trace elements
Metabolic – most toxic metals and oxidant nutrients

SYNERGISTS

Metabolic – most of the trace elements plus the major macrominerals

HAIR ANALYSIS NOTES

- Hair lithium levels will elevate in those on medical lithium therapy.
- Hair lithium may or may not reflect the total body load of lithium.
- Lithium is a more experimental element in development at this time. It may be helpful for those with anxiety and irritability, or anyone taking a psycho-active drug such as an anti-depressant, to protect the delicate brain structures.
- Lithium appears to balance the sodium level. This would correlate with the research by A. Frazier. The significance of hair lithium levels is a topic of research.

INDICATIONS FOR SUPPLEMENTATION

- Aggressive behavior, manic-depression and some cases of depression.
- Lithium may help reduce elevated blood sugar and help protect the brain in cases of Alzheimer's disease, other dementias and others.

MANGANESE

GENERAL

Valence +2, +3 and other toxic forms such as +4 or +6, alkaline-forming, a 'female' element.

SOURCES OF MANGANESE

Meats - snails, egg yolk

Nuts/seeds - sunflower, coconuts, peanuts, pecans, walnuts, chestnuts, hazelnuts, almonds, brazils

Fruits - blueberries, olives, avocados

Vegetables - corn, corn germ, parsley, legumes

Grains - wheat, wheat germ and bran, rice, barley, oats, buckwheat, rye

Miscellaneous - kelp, cloves, tea. Gasoline fumes contain manganese, as can some water supplies, especially in the Northeast USA.

ROLES IN THE BODY

- Essential for energy production
- Involved in glucose tolerance
- Helps maintain the integrity of tendons and ligaments
- Essential for bone development and arterial integrity

FUNCTIONS OF MANGANESE

Nervous system - synthesis of neurotransmitters

Reproductive system - fertility

Endocrine system - required for normal adrenal and thyroid gland activity

Skeletal - tendons, ligaments, connective tissue

Metabolic - energy production, glucose tolerance, utilization of fats and carbohydrates

Detoxification - involved in superoxide dismutase

METALLOENZYMES

- Pyruvate carboxylase - carbohydrate metabolism
- Superoxide dismutase - destruction of free radicals
- Glycosyl transferase - glucose utilization
- Various hydrolases, kinases, transferases, peptidases, arginase, phosphatases, and DNA polymerase - degradative and biosynthetic enzymes

DEFICIENCY SYMPTOMS

Allergies	ringing in the ears
hypoglycemia	fatigue
diabetes	weakness, muscular
myasthenia gravis	fractures or osteoporosis
dizziness	weak ligaments and tendons

TOXICITY SYMPTOMS

Anorexia	criminal behavior
neurological symptoms	iron deficiency
ataxia	Parkinson's-like symptoms
schizophrenia	

SYNERGETIC NUTRIENTS

zinc, choline, vitamin K

ANTAGONISTIC NUTRIENTS

Absorption - calcium, phosphorus, iron, soy protein, iron, many other minerals

Metabolic - copper, magnesium, iron, vanadium

HAIR ANALYSIS NOTES

- Normal or low hair manganese is not a reliable indicator of manganese status.
- Most slow oxidizers have excessive and usually biounavailable manganese. To assess this, look to elevated aluminum or iron.
- Manganese-deficient animals show reduced maternal caring for their young.

High hair tissue manganese:

- Manganese toxicity is common. A possible source is contaminated drinking water. The EPA is not required to report manganese levels in drinking water.
- Usually a biounavailable form of manganese, perhaps an oxide. Often high along with the other 'amigos' or 'friends', namely iron, aluminum and rarely chromium and selenium. This may support adrenal activity.
- Sauna therapy often needed to remove toxic manganese from the body.

Low hair tissue manganese:

- Not a reliable indicator of manganese status. It is often hidden and biounavailable.

REASONS FOR MANGANESE SUPPLEMENTATION

- To raise low sodium levels.
- To lower excessive iron, copper or other toxic metal levels.
- To help correct a low sodium/potassium ratio,
- To assist thyroid and adrenal gland activity.

MOLYBDENUM

GENERAL

Alkaline-forming element, less important mineral for development, but an important copper antagonist and key trace mineral in some enzymatic reactions.

SOURCES OF MOLYBDENUM

- *Meats/organs* - pork, lamb, beef liver
- *Nuts/seeds* - sunflower seeds
- *Vegetables* - soybeans, lima beans, lentils, peas
- *Grains* - buckwheat, oats, barley, wheat germ, sorghum

FUNCTIONS OF MOLYBDENUM

Excretory - purine metabolism

Metabolic - fat, aldehyde, uric acid metabolism, copper, iron and sulfur homeostasis

Detoxification - of copper, sulfite, sulfate, aldehydes

Skeletal - gout and cancer preventive?, high molybdenum in dental enamel

Molecular - electron transfer agent reacts with flavins

METALLOENZYMES

- Xanthine oxidase - purine metabolism
- Aldehyde oxidase - oxidation of aldehydes
- Sulfite oxidase - oxidation of sulfite

DEFICIENCY SYMPTOMS

Few symptoms in humans, possible dental caries. In animals, depressed growth and increased mortality.

TOXICITY SYMPTOMS

Acute - diarrhea.

Chronic - gout, copper deficiency symptoms such as hair loss, anemia, loss of hair color, osteoporosis, weight loss and growth retardation.

SYNERGISTS

iron, sulfur in enzyme reactions, fluoride in teeth

ANTAGONISTS

Absorption – methionine, protein, sulfur, zinc, copper in the diet.

Metabolic - Molybdenum is a powerful copper antagonist.

HAIR ANALYSIS NOTES

- Hair molybdenum levels are not that useful in the author's experience.
- Raises sodium in the mineral system of the body.

REASONS FOR MOLYBDENUM SUPPLEMENTATION

- To lower elevated copper levels. Excess supplementation can lower copper excessively.
- Somewhat toxic so do not use unless other methods are not sufficient to correct a high copper.

SELENIUM**GENERAL**

Spiritual mineral because it helps develop brain centers, highly alkaline-forming element, needed by everyone today and low in most diets.

SOURCES OF SELENIUM

Seafood - oysters, tuna, mackerel, herring, lobsters, scallops, shrimp, pike, trout, carp, cod, flounder, salmon

Meats - liver, kidney, heart, beef, lamb, egg, pork

Nuts/seeds - brazil nuts, cashews, peanuts, walnuts

Grains - blue corn, wheat germ and bran, brown rice, barley

Vegetables - garlic, onions

Miscellaneous - brewer's yeast

ROLES IN THE BODY

- sulfhydryl agent

- anti-oxidant in glutathione peroxidase
- protection of cell membranes
- electron transfer agent
- important for the circulatory system, digestive organs, and reproductive system
- heavy metal detoxification.

FUNCTIONS OF SELENIUM

Circulatory - needed for the heart muscle

Excretory - protection from toxic metals

Respiratory - involved in oxygen transport

Digestive - intestinal homeostasis

Nervous - protection from mercury and cadmium. Needed to develop certain higher brain functions.

Reproductive - protection against birth defects

Endocrine - synergistic with the sex hormones

Blood - stabilizes the red blood cell membranes

Integumentary - helps maintain hair, skin and nails

Immune - enhances immune system in animals

Metabolic - lipid and sulfhydryl metabolism; may prevent liver necrosis

Detoxification - helps remove mercury, cadmium, silver, arsenic and peroxides

METALLOENZYMES

- Glutathione peroxidase - destruction of peroxides
- Aryl sulfatase - phenol-sulfate metabolism
- B-glucuronidase - glucuronide metabolism
- Lactic dehydrogenase - destruction of lactic acid
- Glutamic-oxalic transaminase - interconversion of amino acids

SELENIUM DEFICIENCY SYMPTOMS

neonatal jaundice

acanthocytosis

oxidant damage

cancer

alcoholic liver failure

toxic metal poisoning

SYMPTOMS OF SELENIUM TOXICITY

mottled teeth

selenosis

malignancy

liver damage

nervousness

depression

dermatitis, pallor

gastrointestinal distress

SYNERGISTIC NUTRIENTS

Metabolic - vitamin C, vitamin E, glutathione

Absorption - amino acids, peptides, proteins

ANTAGONISTIC NUTRIENTS

Metabolic - silver, arsenic, mercury, cadmium, titanium

Absorption - copper, mercury, silver, sulfate, other trace elements compete for absorption to some degree

HAIR ANALYSIS NOTES

High hair tissue selenium:

- May be due to the use of Selsun Blue shampoo or rarely contaminated water or another source of toxicity. This is not a usable form of selenium. However, shampoo usually does not cause frank poisoning.
- Rarely selenium is one of the “friends” or “amigos” with manganese, iron, aluminum and possibly chromium. This is a bioavailable form of selenium that must be removed from the body.

Low hair tissue selenium:

- This is very common, usually due to refined food diets or natural foods that are selenium-deficient.

REASONS FOR SELENIUM SUPPLEMENTATION

- Helpful for liver detoxification of all the heavy metals and toxic chemical agents as well.
- As an anti-oxidant to help prevent free radical damage.
- As a cancer preventive. Note that excessive selenium supplementation may be toxic.
- Can assist brain development in some people.
- Raises sodium in the mineral system.

ZINC

GENERAL

Sedative, anti-inflammatory, recent ‘male’ mineral, gentle strength, spiritual mineral associated with peace and harmony in the body, highly alkaline-forming, needed by everyone today.

SOURCES OF ZINC

Seafood - oysters, herring

Meats - beef, lamb, beef and pork liver

Nuts/seeds - sunflower, pumpkin

Dairy - cheese

Grains - wheat germ

Miscellaneous - brewer's yeast, maple syrup, bone meal, gluten, tea

ROLES IN THE BODY

- Activator of many key enzymes
- Growth and development
- Male reproductive system
- Insulin production and secretion
- Prevention of cadmium and copper toxicity

FUNCTIONS OF ZINC:

Circulatory - maintenance of artery walls

Respiratory - removal of carbon dioxide and maintenance of acid-base balance
Digestive - production of digestive enzymes, and normal liver function
Nervous - essential for brain development and neurotransmitters
Special senses - appetite regulation, smell and taste
Reproductive - testes, ovaries, prostate, male fertility, semen high in zinc
Endocrine - insulin and pituitary gonadotropin secretion
Blood - red blood cells and blood proteins
Skeletal - bone integrity, prevention of osteoporosis
Skin - required for normal integrity of hair, nails, and skin
Protective - required for wound healing and integrity of the immune system
Metabolic - normal carbohydrate and protein metabolism
Detoxification - assists in removing toxic accumulation of cadmium and copper
Psychological - mood stabilizer and "sedative" mineral

METALLOENZYMES

- Carboxypeptidase A & B, renal dipeptidase - digestion of protein
- Carbonic anhydrase - carbon dioxide transfer
- Glutamate dehydrogenase - deamination
- Malate dehydrogenase - citric acid cycle
- Alkaline phosphatase - phosphate metabolism
- Alcohol dehydrogenase - metabolism of alcohol
- Glyceraldehyde-3-phosphate dehydrogenase - glucose metabolism
- Leucine amino peptidase/dipeptidase - hydrolysis of peptides
- AMP aminohydrolase - conversion of AMP to IMP
- D-Aminolevulinic acid dehydrogenase - porphyrin synthesis
- DNA polymerase - DNA synthesis
- Cofactor for various peptidases, enolase, arginase, deaminase, lecithinase, aldolase and decarboxylase - degradative enzymes

ZINC DEFICIENCY SYMPTOMS

alcoholic cirrhosis	fatigue
arteriosclerosis	hypoglycemia
cadmium toxicity	hypothyroidism
carbohydrate tolerance	impotence
birth defects	lack of taste and smell
copper toxicity	low appetite
diabetes	nervousness
emotional problems	poor wound healing
failure to thrive	prostate problems

ZINC EXCESS SYMPTOMS (rare)

iron deficiency anemia
 nausea, vomiting, diarrhea
 mental depression

SYNERGETIC NUTRIENTS

Magnesium, vitamin A, D, E, B6, high-protein diet, many other trace minerals depending on the enzyme system.

ANTAGONISTIC NUTRIENTS

Absorption - copper, cadmium, iron, chromium, manganese, selenium, phytic acid, vegetarian diets, soy, cereals, fiber in diet

Metabolic - copper, iron, cadmium

HAIR ANALYSIS NOTES

- Hair levels are not a reliable way to supplement zinc.
- Most of the population is zinc deficient, so everyone needs extra today.
- Zinc is called a 'masculine mineral' as it is important for male reproduction. It is called the 'gentle strength mineral' because of its stabilizing effects upon the emotions.

High hair tissue zinc:

- May be high to compensate for copper toxicity or other toxic metals.
- Often indicates *hidden copper toxicity*.
- Use of Head and Shoulders shampoo may result in a high zinc reading. This is not usually harmful, but it is best to reduce use of this product to once or twice weekly.
- Cadmium or other toxicity may displace zinc and cause a zinc reading to appear high.
- High zinc may act as a natural chelator or anti-oxidant to protect against metal or chemical toxicity.
- True elevated zinc and toxicity are rare, except for occupational exposure.

Low hair tissue zinc:

- May be a compensation to defend against a sodium/potassium ratio less than 2.5:1.
- Levels of 13-16 mg% are normal in fast oxidizers.
- Associated with emotional instability, and with problems of growth and development in children.

REASONS FOR ZINC SUPPLEMENTATION

- To lower sodium, copper and cadmium
- To raise potassium and phosphorus
- Symptomatic - for skin conditions and colds and flu.
- Everyone receives some zinc in development programs.

THE TOXIC METALS***ALUMINUM*****SOURCES OF ALUMINUM TOXICITY**

- beverages from aluminum cans (soda pop, beer, juices) unless the can is coated on the inside
- food cooked in aluminum cookware or foil
- use of aluminum-containing antacids

- use of anti-perspirants
- drinking water (aluminum is frequently added to municipal water supplies)
- baking powders used in many baked goods
- table salt – aluminum usually added as an anti-caking additive
- processed cheese
- bleached flour
- fluoridated water increases leaching of aluminum from aluminum pots and pans.
- all prepared foods made with tap water or salt usually contain aluminum. This includes all baked goods, sauces, almost all beverages such as sodas, some juices and thousands of other products.
- children are often born with elevated aluminum that is passed from mother to fetus through the placenta.

DETECTION OF ALUMINUM TOXICITY

Blood – may have value, however serum levels definitely do not indicate total body load of aluminum.

Hair - levels appear to correlate well with bone levels of aluminum. Several hair tests may be needed before aluminum is revealed on the test, as it may be sequestered within body tissues.

HOW ALUMINUM AFFECTS HEALTH

Nervous system - In animal studies, aluminum blocks the action potential or electrical discharge of nerve cells, reducing nervous system activity. Aluminum also inhibits enzymes in the brain (Na-K-ATPase and hexokinase). It may also inhibit uptake of important chemicals by nerve cells (dopamine, norepinephrine, and 5-hydroxytryptamine).

Behavioral effects - Dementia resulting from kidney dialysis related to aluminum toxicity causes memory loss, loss of coordination, confusion and disorientation.

Digestive system - Aluminum reduces intestinal activity. It is used in many antacids. An excess may cause colic.

SYMPTOMS OF ALUMINUM TOXICITY

Early symptoms: flatulence, headaches, colic, dryness of skin and mucous membranes, tendency for colds, burning pain in the head relieved by food, heartburn and an aversion to meat.

Later symptoms: paralytic muscular conditions, loss of memory and confusion. Other symptoms may include:

Alzheimer's disease
amyotrophic lateral
sclerosis
anemia
hemolysis
leukocytosis
porphyria
colitis

dental cavities
hypoparathyroidism
kidney dysfunction
liver dysfunction
neuromuscular disorders
osteomalacia
Parkinson's disease
ulcers

ANTAGONISTS AND CHELATORS

calcium, magnesium, zinc, fluoride, vitamin C, deferoxamine

HAIR ANALYSIS NOTES

- The ideal hair aluminum should probably be below 0.1 mg%. This is lower than most labs report.
- Most hair tests indicate elevated hair tissue aluminum. This is not surprising as it is high in clay soils, in many foods and in the environment.
- Hair levels may rise on retest hair mineral analyses during a development program as more aluminum is mobilized from tissue storage sites.
- Aluminum may be hidden. Hidden aluminum indicators include a hair manganese above 0.04 mg%, hair iron above 2 mg%, and perhaps elevated chromium or selenium. These elements collectively are called the 'amigos' or 'friends' as they are often found together.

ARSENIC

SOURCES OF ARSENIC

Some arsenic is found naturally in foods. Other sources include pesticides, beer, table salt, drinking water, paints, pigments, cosmetics, rat poison, glass and mirror manufacture, fungicides and wood preservatives.

POSSIBLE FUNCTIONS OF ARSENIC

Some researchers believe that arsenic is an essential element in small quantities. Its functions are not clear, but may have to do with growth and blood formation.

DEFICIENCY SYMPTOMS

In some studies, laboratory rats deprived of arsenic show slower growth, iron-laden spleens, and rough hair. Their offspring have fragile red blood cells. Deficiency in humans is not known.

TOXICITY SYMPTOMS

enzyme inhibitor	goiter
anorexia	vitiligo
weakness	fluid loss
diarrhea	headache
edema	vertigo
keratosis	muscle spasm
impaired healing	stupor
dermatitis	fever
stomatitis	pallor
liver dysfunction	jaundice
hair loss	abdominal pain
sore throat	herpes
kidney damage	abnormal ECG
vasodilation	interferes with uptake of folic acid
peripheral neuritis	inhibition of sulfhydryl enzymes

ANTAGONISTS

iodine, selenium, vitamin C

HAIR ANALYSIS NOTES

- The ideal hair arsenic level is probably about 0.007 to 0.009 mg%. This is lower than some laboratories suggest, but with development we can reduce it to these levels eventually.
- Arsenic, as with all the toxic metals, will not be revealed on early hair tests in most cases. It is revealed later as it is eliminated from the body through the skin and hair.
- Most people have arsenic overload due to water and food contamination.

CADMIUM

SOURCES OF CADMIUM TOXICITY

- All shellfish are the main source today.
- Food grown on cadmium-contaminated soil. Sewage sludge, fertilizers or irrigation water may contaminate soil.
- Large ocean fish - tuna, cod, haddock.
- Refined and processed foods.
- Contaminated drinking water.
- Processed meats, cola drinks and instant coffee.
- Cigarette and perhaps marijuana smoke.
- Occupational exposure - battery manufacture, semiconductors, welding, dental materials.
- Solder used in food cans.
- Brake linings, motor oil and exhaust fumes from cars.
- Artists paints.
- Air pollution - incineration of rubber tires, plastics and paints.
- Children today are commonly born with cadmium toxicity passed from mother to child via the placenta.

DETECTION OF CADMIUM TOXICITY

- "...Cadmium data from blood have little diagnostic value" (Cranston & Passwater, 1983). This is because cadmium is rapidly removed from the blood soon after it is ingested.
- Often, several months or even years of development therapy are required before cadmium may be revealed in the hair.

HOW CADMIUM AFFECTS HEALTH

Cancer – cadmium is a very toxic metal and usually associated with the development of cancers.

Energy - cadmium causes strong inhibition of essential enzymes in the Krebs energy cycle.

Nervous system - cadmium inhibits release of acetylcholine and activates cholinesterase. This results in a tendency for hyperactivity of the nervous system. Cadmium also directly damages nerve cells.

Bones and joints - cadmium alters calcium and phosphorus metabolism, thus contributing to arthritis, osteoporosis, and neuromuscular diseases.

Cardiovascular system - cadmium replaces zinc in the arteries, contributing to brittle, inflexible arteries.

Digestive system - cadmium interferes with production of digestive enzymes that require zinc.

Male reproductive system - prostate problems, impotence and testicular cancer can result from cadmium-induced zinc deficiency.

Endocrine system - zinc is required for growth and insulin release. Cadmium can contribute to failure to thrive, delayed growth development, and diabetes.

Excretory system - cadmium accumulates in the kidneys, resulting in high blood pressure and kidney disease.

Dental - cadmium toxicity can alter calcium and vitamin D activity, resulting in cavities and tooth deformities.

Psychological - cadmium toxicity is associated with learning disorders and hyperactivity, perhaps due to zinc deficiency or to inhibition of acetylcholine release in the brain.

Cadmium is a lower “male” element associated with aggressiveness and “macho” behavior. It is also found commonly in criminals and psychopaths.

SYMPTOMS OF CADMIUM TOXICITY

alopecia, anemia	fertility, decreased
atherosclerosis	hyperlipidemia
arteriosclerosis	hyperactivity in children
arthritis, osteo	hypertension
arthritis, rheumatoid	hypoglycemia
bone repair, inhibited	inflammation
cancer	lung disease
cardiovascular disease	migraine headaches
cerebral hemorrhage	osteoporosis
cholesterol, elevated	renal disease
cirrhosis of the liver	schizophrenia
diabetes, emphysema	sex drive, reduced
enlarged heart	strokes
failure-to-thrive syndrome	vascular disease

ANTAGONISTS

zinc, calcium, vitamin D, copper, iron, manganese, vitamin C, protein (particularly egg white). EDTA is used to reduce cadmium by some doctors, but not in development.

HAIR ANALYSIS NOTES

- The ideal hair cadmium level is probably about 0.005 mg%, lower than most labs suggest. We can reduce it this low eventually with development programs.
- Cadmium has an aldosterone-like action and can elevate the hair sodium level. When cadmium is eliminated, often the sodium level declines.
- Cadmium is considered one of the most toxic of the heavy metals. It is located just below zinc in the periodic table of the elements. It replaces zinc in vital enzyme binding sites.

- Cadmium is often not revealed on early hair tests. The metal is usually deeply buried and requires time to uncover and dislodge from storage sites in the body.

LEAD

SOURCES OF LEAD TOXICITY

- Leaded gasoline, 'Grecian Formula' or 'Youth Hair' hair dyes, manufacture of batteries, smelting industries, lead-based paints, cigarette smoke, colored inks, food cans soldered with lead, ceramic glazes, drinking water contaminated, pesticide residues, food contaminated with lead from the soil or from pesticide use, and contaminated water that has passed through lead-soldered water pipes.
- All American and European children are likely born with elevated lead, passed through the placenta from their mothers. This is not revealed on every hair test, however, as lead can be deeply buried in the bones and elsewhere.
- Diets deficient in calcium, magnesium, or iron increase lead absorption.
- Fast oxidizers are very prone to accumulate lead, as it replaces calcium that is usually in great demand in fast oxidizers. All babies and almost all young children are fast oxidizers.

DETECTION OF LEAD TOXICITY

Blood serum – excellent for acute lead toxicity. It is not as accurate for chronic lead poisoning because most lead is removed from the blood within 30 days of exposure and stored in the tissues such as the hair.

Urine challenge tests(usually with EDTA) – definitely better than serum tests, but still misses lead that is not easily chelated.

Hair – US Environmental Protection Agency review in 1979 showed hair to be an excellent method of testing for chronic lead poisoning. Several hair tests may be necessary before elevated lead levels are revealed.

HOW LEAD AFFECTS THE BODY

Blood - inhibits enzymes associated with hemoglobin synthesis, and increases the rate of destruction of red blood cells. End result is fatigue.

Bones - lead is incorporated into bone in preference to calcium.

Brain - can inhibit copper-dependent enzymes needed for neurotransmitters (dopamine, epinephrine, norepinephrine). End result is hyperactivity, mental dullness and lowered IQ, violence and anti-social behavior.

Energy - inhibits copper and iron-dependent enzymes in the Krebs cycle required for energy production. End result is fatigue.

Kidneys - lead can raise uric acid levels and impair kidney function. End result is gout.

Minerals - lead displaces and can cause deficiency or bio-unavailability of calcium, zinc, manganese, copper, and iron.

Thyroid gland - lead interferes with iodine uptake by the thyroid, and can inactivate thyroxin.

SYMPTOMS OF LEAD TOXICITY

Musculo-skeletal system

arthritis, osteo

arthritis, rheumatoid
back pain, low
rickets
gout

Hematological
anemia

Nervous system
brain function, abnormal
blindness
convulsions
deafness
dyslexia
encephalitis
encephalopathy
epilepsy
fatigue
insomnia
multiple sclerosis
muscular dystrophy
Parkinson's disease
vertigo

Cardiovascular system
arteriosclerosis

Digestive system
abdominal pain
colic
constipation
liver dysfunction
weight loss

Reproductive system
abortions, spontaneous
impotency
infertility
libido, diminished
menstrual difficulties
sterility
stillbirths

Glandular system
adrenal insufficiency
hypopituitarism
hypothyroidism

Excretory system
nephritis, other

Dental
pyorrhea, tooth decay

Psychological
anxiety
concentration, poor
depression, mental
hallucinations
hyperkinesis
memory impairment
mental retardation
mood swings
nightmares
psychotic behavior
schizophrenia

ANTAGONISTS AND CHELATORS

phosphorus, calcium, chromium, copper, selenium, magnesium, iron, zinc, dietary protein, vitamins C and E

HAIR ANALYSIS NOTES

- The ideal hair lead level is probably less than 0.06 mg%. This is lower than most labs suggest.
- As with other toxic metals, months or even years of development may be needed before lead is revealed as it is eliminated through the hair.
- Hair dyes containing lead occasionally cause very high hair readings. Lead is easily absorbed into the scalp when these products are applied.

MERCURY

SOURCES OF MERCURY TOXICITY

- *All* fish, seafood and sea vegetables, especially larger ocean fish such as tuna, swordfish, shark and others.
- Vaccines preserved with thimerosal. This even includes some flu shots.
- Dental amalgams (silver amalgam fillings).
- Contaminated drinking water.
- Air pollution from burning coal.
- Seeds and vegetables treated with mercurial fungicides.
- Medications - diuretics, preparation H, contact lens solution and perhaps others.
- Occupational exposure - felt, algicides, floor waxes, adhesives, fabric softeners, manufacture of paper, production of chlorine, old paints.
- Chemistry sets, old thermometers and other older uses for mercury.
- All children are born with some mercury toxicity that is passed through the placenta from their mothers. Mercury can also be passed to children in breast milk.

DETECTION OF MERCURY TOXICITY

Serum: not used much because mercury is cleared rapidly from the blood, making it difficult to detect chronic exposure.

Urine challenge test with DMPS or DMSA. Used commonly by holistic physicians, this can detect some mercury, but misses a lot as well.

Hair: Hair better for chronic exposure, though it will show acute exposure if severe enough. Levels of mercury in hair are about 300 times higher than blood levels. May require several tests to be revealed, as with all the toxic metals.

HOW MERCURY AFFECTS HEALTH

Genetic – birth defects, delayed development syndromes, autism and many others.

Energy - mercury compounds inhibit the enzyme ATPase, which impairs energy production in all body cells.

Nervous system - degeneration of nerve fibers occurs, particularly the peripheral sensory nerve fibers. In addition to sensory nerve damage, motor conduction speed was reduced in persons with high hair mercury levels. The most common sensory effects are paresthesia, pain in limbs, and visual and auditory disturbances. Motor nerve disturbances results in changes in gait, weakness, falling, slurred speech, and tremor. Other symptoms are headaches rashes and other neurological disorders.

Endocrine system - mercury has been shown to concentrate in the thyroid and pituitary glands, interfering with their function. Impairment of adrenal gland activity also occurs.

Kidneys - mercury can accumulate in the kidneys, where it may cause kidney damage.

Psychological – associated with the “mad hatters”, mercury causes severe emotional difficulties in susceptible individuals including ADD, ADHD, autism, confusion, timidity, “craziness” and possibly some schizoid behaviors. It is associated with copper toxicity. Mercury is a primitive “female” element.

SYMPTOMS OF MERCURY TOXICITY

adrenal gland dysfunction

kidney congestion

alopecia (hair loss)	kidney damage
anorexia	loss of self-control
ataxia	memory loss
birth defects	migraine headaches
blushing	mood swings
brain damage	nervousness
depression	numbness and tingling in arms and legs
dermatitis	pain in limbs
discouragement	dizziness
fatigue	salivation, excessive
hearing loss	schizophrenia
hyperactivity	thyroid dysfunction
immune system dysfunction	tremors, timidity
insomnia	vision loss - peripheral
	weakness, muscle

ANTAGONISTS AND CHELATORS

selenium, zinc, magnesium, vitamin C, calcium and other vital minerals help remove mercury

HAIR ANALYSIS NOTES

- The ideal hair mercury level is below 0.02 mg%, lower than most labs suggest.
- Mercury present in excess in everyone today thanks to fish consumption, water contamination, air pollution, silver amalgam dental fillings and congenital mercury toxicity.
- Months or years are needed to remove most mercury from tissue storage sites. It may not be revealed on hair tests until it begins to come out of the body.
- Mercury toxicity is an indicator of copper imbalance. This may not be apparent on the first few hair mineral analyses.
- Chelating agents can powerfully reduce mercury, but have side effects that are dangerous in some people. These are not needed with development.

NICKEL

SOURCES OF NICKEL

rooibos tea or red tea	oysters
hydrogenated vegetable oils	tea
contaminated alcoholic beverages	herring
margarines and imitation whip cream	nickel plating on metallic objects
commercial peanut butter	cigarette smoking
vegetable shortening	manufacture of steel
nickel-plated jewelry	batteries, machine parts, wire,
unrefined grains and cereals	electrical parts

HOW NICKEL AFFECTS THE BODY

Kidneys - nickel has a tendency to accumulate in the kidneys.

Hormone, lipid and membrane metabolism -it is believed that nickel has some physiological role related to these functions.

Cancer – nickel associated with development of lung cancer, specifically, in those exposed to nickel vapors.

SYMPTOMS OF NICKEL TOXICITY

kidney dysfunction
heart attack
cancer, oral, intestinal and lung
skin problems
nausea, vomiting
hemorrhages
malaise
low blood pressure
muscle tremors, tetany and paralysis

ANTAGONISTS AND CHELATORS

vitamin C, other vital nutrients

HAIR ANALYSIS NOTES

- The ideal hair nickel level is probably below 0.05 mg%, lower than most labs suggest.
- Nickel toxicity is very common, but is usually not reflected on early hair tests.

Sauna therapy is helpful or even mandatory to reduce toxic metal levels to the lowest possible levels.

APPENDIX III. MOVEMENT PATTERNS ON A HAIR MINERAL ANALYSIS

Movement patterns are an advanced way to view a hair mineral analysis. Life is more than raising a family, or having a nice home. At a deeper level, life is about movement toward fulfilling certain goals and obligations that one has set out for this lifetime. This is an old metaphysical teaching. Hair analysis can help us to move people along their way by showing us how or where they are blocked or stuck. Here are some examples of this idea:

Controlled and uncontrolled. Controlled movement is more predictable. It is found more in *slow oxidizers*. Uncontrolled movement is more common in *fast oxidizers* whose glands are too active. They tend to be more impulsive, intense and volatile in their movement patterns.

Effective and ineffective movement patterns. Effective movement usually requires more energy. Ineffective movement occurs with *lower levels of sodium and potassium*, a *lower sodium/potassium ratio*, perhaps with a *high level of calcium* or perhaps *high toxic metals*.

Moving forward with the brakes on. This is associated with a *calcium shell pattern*.

Fast forward movement. This is indicated by a *faster oxidation rate*, in general. In contrast, slow oxidizers are moving slower.

Inflammation. This is like doing a wheelie with a car. One might call it spinning one's wheels in place with little forward motion. It may accompany a *three or four highs pattern*.

Stalled movement. Associated with a transition from fast to slow oxidation due to a need to adjust. Patterns include *fast oxidation with a low sodium/potassium ratio*, *sympathetic dominance*, *four highs* and, to a degree, *four lows pattern*.

Floating. This is an unusual quality in which a person is stuck, not because of exhaustion, but rather due to an inability to find one's way forward. It is seen with a *four highs pattern*, in some cases, or perhaps with *stalled transition patterns*, especially *sympathetic dominance*, in which a person needs more grounding.

Stopped movement. This is indicated by a *very high calcium level* or a *calcium shell pattern*.

Reversed movement. This is a movement away from health and toward illness. It is indicated by a *low sodium/potassium ratio*. The tendency is worse with a *double low ratio pattern*.

Trapped. Here a person is not sure in what direction to go. It occurs with a *bowl pattern*, in particular, but can occur with others, such as any of the *stalled transition patterns*.

Open to possibilities. This is associated with a *hill*. It indicates that a person has perhaps overcome a blockage of some sort, so that one is free to move on and open up to new horizons. degree of uncoordination or disconnect, temporarily, in the mineral patterns of the body.

Very temporary unstable movement. This is associated with *mixed oxidation*.

Stressed and unstable. This is associated with a *three highs* or *four highs patterns*, which may be a slow, mixed or fast oxidizer.

Determined or digging in one's heels. This is associated with *double ratio patterns*, and even more so a *step down* or a *step up pattern*. These may be called *extreme effort patterns*.

Collapsed, and perhaps random or shattered. This is seen with *four lows* and perhaps with *three lows*, at times. These can also be end-of-life patterns that may indicate a person is somewhat directionless and drifting toward the end of one's lifetime.

Conflicted. Examples are *passive-aggressive pattern* and perhaps others such as a *bowl pattern*.

Vampirism. This interesting situation is one in which movement is mixed with the energy of another. One is moving forward, many times, but in a sideways direction because one is not using one's own power, so to speak, but taking some of it from another person.

APPENDIX IV.

DETERMINATION OF OXIDATION TYPE BY MEANS OF TISSUE ELECTROLYTE RATIOS

by Lawrence Wilson, MD

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Abstract. A method of determining oxidation types by means of hair tissue mineral ratios was evaluated by reviewing 55 patient files. Correlations were assessed between tissue calcium/potassium, sodium/magnesium, and sodium/potassium ratios, and nine signs and symptoms of oxidation type. Hair mineral ratios were found to be good predictors of signs and symptoms of oxidation type.

INTRODUCTION

In 1972, Dr. George Watson, PhD proposed that different individuals metabolize their food at different rates, and that deviations in the rate of oxidation can produce physical and mental illness.

He typed people, using various tests, into 'fast', 'slow', and 'sub' oxidizers (1,2). Watson further claimed that fast and slow oxidizers require different kinds of foods and supplementary nutrients, in order to balance their chemistry. By assessing the chemistry, and then giving the appropriate foods and nutrients for each 'type', positive changes were observed in behavior and general health (1,2).

Watson used determinations of serum dissolved CO₂ and serum pH, odor tests, or a food preference questionnaire to determine fast and slow metabolic types. Research has been underway for the past decade to find simple, reliable methods to confirm Watson's work, and to improve upon his tests to precisely assess oxidation rate. This study is an evaluation of a method developed by Dr. Paul C. Eck of Phoenix, Arizona, to determine oxidation types utilizing mineral ratios in a sample of hair analyzed by atomic absorption spectroscopy.

METHOD

A) Criteria for inclusion in the study. To be included in the study, each case had to meet 3 sets of criteria: 1) proper hair sampling, 2) proper laboratory technique, and 3) adequate information about the signs and symptoms of oxidation types. The criteria were the following:

1. HAIR SAMPLING: a) normal shampooing was allowed on the day of sampling. b) patients had to wash their hair four times after receiving a chemical permanent, before submitting a sample for analysis. c) hair creams, setting lotions, sprays, conditioners, etc. were allowed to be on the hair. d) hair was clipped from at least three sites from the back of the head and nape of the neck. The sample was cut as close as possible to the scalp, and any hair over 1 and one-half inches long was cut off the sample and discarded. e) clippings were combined until a half-gram sample was obtained.

2. LABORATORY TECHNIQUE: a) all tests were performed at a laboratory that does NOT wash the hair prior to analysis. b) preparation of hair for analysis was by digestion of a 300 mg sample in 2.0 ml of a 3:1 solution of nitric/perchloric acid, heated to 300 °C overnight, and rehydrated with 6.0 ml of 0.9% HCl solution. 0.8 ml of this solution is then diluted to 4.0 ml with a 0.2% cesium chloride solution. c) analysis was performed on an atomic absorption instrument.

d) calibration of the instrument was by Fisher A. A. Standards. e) quality control consisted of testing each batch of samples against:

- a check sample from the Fisher A.A. Standards
- an in-house control hair sample
- a National Bureau of Standards Control
- a blank solution of the acids used in digestion

3) ADEQUATE PATIENT INFORMATION: At least four signs or symptoms of fast or slow oxidation had to be listed in the patient file, obtained at the time the sample was taken.

B) Method of determination of oxidation type from tissue mineral analysis. Two ratios are involved in Dr. Eck's determination of oxidation type (3): calcium/potassium and sodium/magnesium.

Fast oxidation is defined by Dr. Eck as a calcium/potassium ratio less than 4:1 and a sodium/magnesium ratio greater than 4.17:1. For this study, two varieties of fast oxidizers were determined and analyzed - fast with a normal or elevated sodium/potassium ratio, and fast with a low sodium/potassium ratio.

Dr. Eck found that the fast oxidizer with a low sodium/potassium ratio ($\text{Na/K} < 2.5:1$) behaves more like a slow oxidizer than a fast oxidizer, at times. It was decided to test this concept as part of the study.

Slow oxidation is defined as a calcium/potassium ratio greater than or equal to 4:1 and a sodium/magnesium ratio less than or equal to 4.17:1.

Mixed oxidation is a transition or unstable state which is defined as either a calcium/potassium ratio greater than 4:1 and a sodium/magnesium ratio greater than or equal to 4.17:1, OR a calcium/potassium ratio less than or equal to 4:1 and a sodium/magnesium ratio less than 4.17:1. These definitions are summarized in table 1.

TABLE 1. MINERAL RATIOS FOR FAST, SLOW AND MIXED OXIDATION

FAST OXIDATION WITH NORMAL OR ELEVATED NA/K RATIO:

calcium/potassium ratio LESS THAN 4:1,
sodium/magnesium ratio GREATER THAN 4.17:1,
sodium/potassium ratio GREATER THAN OR EQUAL TO 2.5:1.

FAST OXIDATION WITH LOW NA/K RATIO:

Calcium/potassium ratio LESS THAN 4:1,
sodium/magnesium ratio GREATER THAN 4.17:1,
sodium/potassium ratio LESS THAN 2.5:1.

SLOW OXIDATION:

Calcium/potassium ratio GREATER THAN OR EQUAL TO 4:1, and
sodium/magnesium ratio LESS THAN OR EQUAL TO 4.17:1.

MIXED OXIDATION:

Calcium/potassium ratio GREATER THAN OR EQUAL TO 4:1, and sodium/magnesium ratio GREATER THAN 4.17:1.

OR

Calcium/potassium ratio LESS THAN 4:1, and sodium/magnesium ratio LESS THAN OR EQUAL TO 4.17:1.

C) Sign and Symptom Criteria for Determining Oxidation Type.

George Watson found that certain food preferences, signs and symptoms are associated with each oxidation type. Since the blood and odor tests Watson used were not performed on the patients in this study, it was decided to use food preferences, signs and symptoms as a basis of comparison with the results of the tissue mineral analyses.

The 52-question oxidation test which Watson published (1) had not been given to these patients, but patients had been questioned about food habits, cravings, food preferences, and a variety of physical and emotional symptoms. Utilizing Watson's and Eck's research about oxidation types, nine indicators of oxidation type were chosen for this study:

- frequency of bowel movements
- oily or dry skin
- warmth of extremities
- food cravings
- blood pressure
- sweating
- typical moods
- energy level
- animal protein preference

Following is the rationale for each of the above indicators:

1. Frequency of Bowel Movements. Increased metabolic activity is associated with increased peristaltic activity and hence more frequent bowel movements in the fast oxidizer. More than one bowel movement per day was considered an indicator of fast oxidation. One or fewer movements per day indicated slow oxidation.

2. Dry or Oily Skin and Hair. Increased metabolic activity is associated with increased activity of the sebaceous glands of the skin and scalp, which in turn is associated with oily skin and hair in the fast oxidizer. Patients were asked to subjectively rate themselves as having a tendency to oily or dry hair and skin.

3. Blood circulation. Increased rate of metabolism in the fast oxidizer is associated with enhanced blood circulation, and correlates with a tendency to warmer hands and feet, even in cold weather. Patients were asked if they experienced cold extremities.

4. Food cravings. Food cravings can express the body's desire to balance chemistry. Fast oxidizers tend to crave fats, butter and red meat, foods which slow the metabolic rate. The slow oxidizer often craves sweets to combat hypoglycemia, and salt to replace salt lost through underactive adrenal gland activity (low aldosterone).

5. Blood Pressure. Fast oxidation is associated with increased vascular (sympathetic) tone, and sodium retention due to elevated aldosterone levels. These frequently result in a blood pressure over 120/80. Slow oxidizers tend to have blood pressures of 120/80 or lower. This is due to weaker vascular tone, and/or low sodium levels which causes a reduced blood volume and blood pressure.

6. Sweating. Enhanced metabolic activity increases generation of heat in body tissues. This is associated with increased sweating in the fast oxidizer. Slow oxidizers generally sweat

less. Patients were asked to rate themselves subjectively as to whether they sweat heavily or lightly.

7. Mood. In fast oxidation, all metabolic processes speed up, including mental functioning. This can result in a tendency to anxiety, nervousness, or jitteriness. Slower mental activity in the slow oxidizer, on the other hand, causes a tendency for sluggishness, lethargy, apathy, and depression.

8. Energy level. A fast oxidation rate, within certain limits, is associated with higher energy levels, than a slow oxidation rate. Fatigue and lethargy can be experienced by both types, but is more common in the slow oxidizer. Patients were asked to subjectively rate their energy level as high or low.

9. Animal Protein Preference. Fast oxidizers require more fat, and tend to prefer red meats to other meats, as they contain a higher percentage of fat. Slow oxidizers tend to prefer chicken, fish, or vegetarian proteins because these low-fat sources of protein speed up and normalize the slow oxidizers' metabolic rate.

PROCEDURE

Ninety-seven patient charts were reviewed. A 'signs and symptoms' worksheet was filled out for each patient. The totals for the slow and fast symptoms categories were added up and expressed as a ratio of fast characteristics to slow characteristics. A ratio greater than 1/1 indicates fast metabolism. Less than 1/1 indicates slow metabolism. Forty-two charts were discarded from the study because fewer than 4 signs or symptoms of oxidation type were listed for the patient.

Ratios of calcium/potassium, sodium/magnesium, and sodium/potassium were calculated for each hair analysis to determine fast, fast with low sodium/potassium ratio, slow, and mixed oxidation as defined in Table 1. The results of the hair analyses and the ratios of fast and slow symptoms for the 55 cases are listed in Table 2.

Correlation was then made to determine how much agreement existed between tissue mineral ratio indicators and sign and symptom indicators of fast and slow oxidation. Results are summarized in Table 3.

TABLE 2. DATA FROM 55 PATIENTS

The following abbreviations are used:

F = fast oxidizer

FI = fast oxidizer with a low sodium/potassium ratio

M = mixed oxidizer

S = slow oxidizer

SIGNS AND SYMPTOMS DATA EXPRESSED AS A RATIO OF FAST/SLOW SYMPTOMS

F 2/2	S 0/4	S 1/3
S 2/3	S 0/4	S 1/3
M 2/4	FI 2/3	FI 3/2
F 2/2	S 0/5	M 3/1
FI 3/2	S 0/4	S 1/3
S 0/5	S 2/2	S 1/4
FI 1/5	M 2/4	FI 1/3
S 1/3	S 2/4	S 1/5

S 2/7 S 1/4 S 0/4
 S 2/3 S 1/3 S 1/3
 S 1/4 M 4/1 S 1/3
 S 2/5 M 0/4 S 2/3
 S 1/6 FI 0/5 S 1/5
 S 1/4 S 1/3 S 1/3
 S 0/4 S 1/4 S 1/5
 S 2/4 M 0/5 S 2/2
 S 1/5 S 1/3 FI 1/5
 F 3/2 S 2/3 M 3/3
 S 3/2

TOTALS:	SIGNS & SYMPTOMS	ANALYSIS
FAST OXIDIZER	6	3
FAST WITH LOW NA/K RATIO	0	7
SLOW OXIDIZER	44	38
MIXED OXIDIZER	5	7
	-----	-----
TOTALS	55	55

Analysis of the data by percentages:

1) OF THOSE WITH FAST OXIDIZER TISSUE ANALYSES:

- * 1 out of 3, or 33.3% demonstrated FAST OXIDIZER symptoms.
- * 2 out of 3, or 66.6% demonstrated AN EVEN MIXTURE OF SLOW AND FAST symptoms.
- * NONE demonstrated SLOW OXIDIZER symptoms.

2) OF THOSE WITH FAST OXIDIZER ANALYSES WITH LOW NA/K RATIOS:

- * 2 out of 7, or 28.6% demonstrated FAST OXIDIZER symptoms.
- * NONE demonstrated AN EVEN MIXTURE OF SYMPTOMS.
- * 5 out of 7, or 71.4% demonstrated SLOW OXIDIZER SYMPTOMS.

3) OF THOSE WITH SLOW OXIDIZER TISSUE ANALYSES:

- * 1 out of 38, or 2.6% demonstrated FAST OXIDIZER symptoms.
- * 2 out of 38, or 5.3% demonstrated AN EVEN MIXTURE OF FAST AND SLOW symptoms.
- * 35 out of 38, or 92.1% demonstrated SLOW OXIDIZER symptoms.

4) OF THOSE WITH MIXED OXIDIZER TISSUE ANALYSES:

- * 2 out of 7, or 28.6% demonstrated FAST OXIDIZER symptoms.
- * 1 out of 7, or 14.3% demonstrated AN EVEN MIXTURE OF FAST AND SLOW OXIDIZER SYMPTOMS.
- * 4 out of 7, or 57.1% demonstrated SLOW OXIDIZER symptoms.

TABLE 3. SUMMARY OF PERCENTAGE CORRELATIONS.

HAIR ANALYSIS	CORRELATION WITH SIGNS AND SYMPTOMS			
	fast	mixed	slow	total
fast oxidizer	33.3%	66.7%	0	100%
fast with low Na/K	28.6%	0	71.4%	100%
slow oxidizer	2.6%	5.3%	92.1%	100%
mixed oxidizer	28.6%	14.3%	57.1%	100%

DISCUSSION

Slow oxidizer tissue mineral ratios were an excellent predictor of slow oxidizer signs and symptoms. Fast oxidizer mineral ratios with low sodium-to-potassium ratios were also a good predictor of slow oxidizer signs and symptoms. Fast oxidizer mineral ratios correlated best with fast or a mixture of fast and slow signs and symptoms. Possibly, this mixed correlation is due to the presence in the study of individuals called 'temporary fast oxidizers' or 'slow under stress'.

These people have fast oxidizer mineral ratios but don't manifest signs and symptoms typical of fast metabolism. The physiological basis for temporary fast oxidation has been elaborated (4). Patients in this category, on retesting their tissue mineral levels after several months of corrective therapy, change to mixed or slow oxidation. Mixed oxidizer mineral ratios correlated best with slow oxidizer signs and symptoms. Most mixed oxidizer hair analyses resolve within 3 months of corrective therapy to slow or fast oxidation.

The percentages of correlation between mixed oxidizer tests, and slow and fast oxidizer symptoms (57% and 28%), approximately matches the ratio of slow to fast oxidizers in the general population (3-4:1). The correlation of the unstable mixed oxidizer tests with slow and fast oxidizer symptoms probably reflects the direction in which the mixed oxidizer tissue tests will resolve.

CONCLUSION

Results of this study support the concept that oxidation type may be determined by calculation of calcium/potassium, sodium/magnesium, and sodium/potassium ratios in an unwashed hair sample analyzed by atomic absorption spectroscopy. Future studies will evaluate the efficacy of nutritional therapy using hair mineral ratios as a basis for diet and supplement regimens.

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APPENDIX V.

EFFECT OF WASHING ON THE TRACE ELEMENT CONTENT OF HUMAN HAIR

by Dr. Raymond F. LeRoy, MSc.

(first published in the Journal of Orthomolecular Medicine, Vol., 1, #2, 1986)

ABSTRACT. Three individual studies were undertaken to determine the effects of washing a human head hair sample in water, before analyzing for 15 minerals by atomic absorption. Calcium, magnesium, sodium, and potassium levels were most affected by washing. Longer washing time produced more mineral loss. Sectioning the hair before washing produced slightly lower average mineral loss. Percentage of washout for each mineral was erratic in both cut and uncut samples. Samples from females lost more mineral than samples from males.

METHODS AND MATERIALS

Study A. A single sample of about 8.0 grams of human hair was divided into three equal portions. Portion 1 was left unwashed. Portion 2 was washed in distilled water for 10 minutes. Portion 3 was washed in distilled water for 30 minutes. Portions 2 and 3 were shaken, for the times indicated, on a variable speed mechanical shaker at 30 strokes per minute.

After washing, the two washed samples were decanted and rinsed twice in 500 ml of distilled water in a Gooch Type, glazed porcelain crucible with perforated bottoms, rinsed twice again in flowing deionized water for one minute and placed in a drying oven for 3 hours at 110 degrees C. The washed samples were removed from the oven, lightly covered and allowed to equilibrate overnight. The following day all three samples were cut into 1.0mm lengths or less, using surgical dissection scissors.

Study B. Ten randomly-selected samples which had previously been analyzed in the unwashed condition were chosen for study B. Each sample was divided into two equal portions and cut into 1 mm or less lengths, BEFORE WASHING. The samples were then washed for 10 minutes in flowing deionized water, drained and dried for three hours at 110 degrees C. The samples were removed from the oven and lightly covered and allowed to equilibrate overnight.

Study C. Ten randomly-selected, uncut samples which had previously been analyzed in the unwashed condition were used. Each sample was washed and dried exactly as in study B, but the samples were NOT CUT. Following the washing and drying procedures, the samples were cut into 1.0 mm lengths, or less, and then analyzed.

ANALYSIS PROCEDURE

A. Weighing Out:

Study A. Two 300 mg portions were weighed out of the unwashed sample. Five 300 mg portions were weighed from the 10-minute wash sample. Five 300 mg portions were weighed from the 30- minute wash sample.

Study B and C. One 300 mg portion was weighed out from each sample in Study B and Study C.

B. Digestion:

All of the digestion tubes are acid washed in 10% HCl before use. To each tube in the study was added 2.0 ml of a 3:1 solution of nitric acid/perchloric acid (Baker Instra-analyzed) and tubes were placed under a hood for 30 minutes. The tubes were successively heated at 95 degrees C. for thirty minutes and 210 degrees C. overnight.

C. Trace Element Sample:

Following digestion, the tubes were re-hydrated with 6.0 ml of 0.9% HCl solution and vortexed. This is the trace element sample (Cu, Fe, Mn, Ni, Pb, P, Cd, Al).

D. Macro-element Sample:

0.8 ml of the trace element sample was diluted to 4.0 ml with a 0.2% cesium chloride solution. Cesium chloride is added to reduce the ionization effect of a nitrous oxide flame.

E. Phosphorus Determination:

0.4 ml of the trace element solution was added to 1.0 ml of a vanadomolybdophosphoric acid reagent and read in a Gilford 300N Spectrophotometer, equipped with a flow-through cuvette, at 400 nm.

F. Mercury Determination:

10.0 mg of hair was dissolved in 0.3 ml of nitric acid in a 16 x 125 tube (Baker Instra-analyzed) and diluted to 10.0 ml with 0.9% HCl solution. The cold vapor method using sodium borohydride (Aldrich) at 253.6 nm. was employed.

INSTRUMENTATION AND EQUIPMENT

All determinations except phosphorus were made on a Perkin-Elmer 5000 Atomic Absorption unit equipped with an AS 50 Auto Sampler, a Data System 10 computer, a PR-100 printer, and a MHS 10 borohydride generation system. Phosphorus determination was performed on a Gilford 300N Spectrophotometer (see above).

CALIBRATION AND QUALITY CONTROL

Calibration of the instrument was achieved using Fisher Atomic Absorption Standards. Quality control encompasses four separate preparations:

- A check sample is prepared from the Fisher A.A. Standards at a concentration about equal to the average patient results.
- An in-house hair control is prepared in the laboratory and is repeatedly analyzed until enough data is accumulated to extract a mean and one standard deviation.
- A National Bureau of Standards bovine liver preparation is used as a control.
- A blank solution of the acids used in digestion.

All of the above preparations are analyzed for every mineral, every time a batch is run. This data is collected and available. All mechanical pipetting equipment is checked monthly for accuracy, as is the electronic balance used in weighing the samples.

DATA

Study A. In table 1, data from the samples - 2 unwashed, 5 washed for 10 minutes, and 5 washed for 30 minutes - are averaged for each category. Individual variation was less than 5% for all elements. Therefore, I believe this to be a valid method of reporting.

TABLE 1. STUDY A

element	unwashed	10 min. wash	30 min. wash
Cu	1.1	1.1	1.1
Fe	3.4	3.3	2.2
Mn	.09	.09	.05
Ni	0.1	0.2	0.1
Pb	2.2	2.1	2.0
Cd	.06	.06	.05
Ca	62	43	43
Mg	9	7	8
Na	38	7	2
K	17	2	2
Zn	11	12	12
Al	4.2	4.2	4.1
Hg	.06	.05	.05
P	9.8	9.7	9.7
Cr	.12	.14	.12

All results are in mg%.

Study B. Results of Study B are reported in Table 2. Only Calcium, sodium, and potassium are reported in study B and study C, these being the only elements which appear to be affected by the one-minute washing. The percent variation of the other elements (Cu, Fe, Mn, Pb, Ni, Cd, Mg, Cr, Al, P, Zn, Hg) was 3 % or less and is considered instrumental. Copies of the full reports are available.

Three samples from study B have been deleted. They were found to be two horses and a dog. As they did not fit our criteria they were dropped.

TABLE 2. RESULTS OF STUDY B. SAMPLES CUT TO 1 MM BEFORE WASHING**CALCIUM:**

SAMPLE #	UNWASHED	WASHED	% CHANGE	SEX/AGE
1	23	15	35	F/43
2	118	94	20	M/34
3	82	70	15	F/25
4	82	70	15	F/34
5	91	80	12	M/39
6	30	27	10	M/53
7	11	10	unchanged	M/51

SODIUM:

SAMPLE #	UNWASHED	WASHED	% CHANGE	SEX/AGE
1	10	5	50	F/43
2	7	4	43	M/34

3	5	3	40	M/39
4	7	5	29	F/25
5	11	7	27	F/34
6	28	21	25	M/51
7	26	20	19	M/53

POTASSIUM:

SAMPLE #	UNWASHED	WASHED	% CHANGE	SEX/AGE
1	4	1	75	F/43
2	4	1	75	M/39
3	26	22	8	M/53
4	8	8	unchanged	M/51
5	8	7	unchanged	F/34
6	2	3	unchanged	F/25
7	2	3	unchanged	M/34

TABLE 3. RESULTS OF STUDY C. SAMPLES LEFT UNCUT BEFORE WASHING.

CALCIUM:

SAMPLE #	UNWASHED	WASHED	% CHANGE	SEX/AGE
1	282	95	66	F/27
2	195	69	66	F/50
3	97	64	34	F/29
4	242	164	32	F/ -
5	269	196	27	M/56
6	39	29	26	M/67
7	80	64	20	M/29
8	37	31	16	M/38
9	88	83	6	M/9
10	15	16	unchanged	M/41

SODIUM:

SAMPLE	UNWASHED	WASHED	% CHANGE	SEX/AGE
1	45	18	60	M/56
2	25	13	48	F/29
3	6	4	33	F/50
4	11	8	27	M/9
5	34	30	13	M/38
6	23	20	13	M/67
7	26	24	8	F/ -
8	18	19	unchanged	M/41
9	4	4	unchanged	F/27
10	3	3	unchanged	M/29

POTASSIUM:

SAMPLE	UNWASHED	WASHED	% LOSS	SEX/AGE
1	4	1	75	F/27
2	7	2	71	F/29
3	31	18	42	M/56
4	7	5	29	M/9
5	48	39	19	M/67
6	48	40	17	M/38
7	16	14	12	M/41
8	4	4	unchanged	F/ -
9	3	3	unchanged	M/29
10	2	1	unchanged	F/50

RESULTS

In Study A, significant change occurred in potassium, sodium, calcium, and magnesium, and to a lesser extent iron, manganese, and nickel levels. Extended washing time resulted in more mineral loss.

In Studies B and C, there was variable loss of calcium, sodium, and potassium from sample to sample, with no constant pattern. Overall, there was more loss in the samples which were not sectioned before washing (Study C). For each mineral studied in both Study B and C, hair samples from women lost more minerals due to washing than samples from men. This may be due to the fact that women's hair is more porous. The results are summarized in tables 4 and 5.

TABLE 4. RANGE OF MINERAL LOSS IN STUDY B AND STUDY C.

Mineral	STUDY B(cut) Range of loss	STUDY C (uncut) Range of loss
CALCIUM	0 - 35%	0 - 66%
SODIUM	29 - 50%	0 - 66%
POTASSIUM	0 - 75%	0 - 75%

TABLE 5. AVERAGE LOSS FROM MALE AND FEMALE SAMPLES

Mineral	Loss in females	Loss in males
<u>STUDY B.</u>		
CALCIUM	21.6%	10.5%
SODIUM	35.3%	31.75%
POTASSIUM	25%	20.75%
<u>STUDY C.</u>		
CALCIUM	49.5%	15.83%
SODIUM	22.25%	18.83%
POTASSIUM	36.5%	19.83%

DISCUSSION

Contamination Versus Endogenous Minerals. Contamination of a laboratory sample is a constant worry for all laboratory workers, particularly when the sample is exposed to the environment as is human head hair. The most often-quoted reference for washing is that

reported by G. S. Kennington in Science Magazine (3) on his study of the effects of soaking antelope hair in a solution of radioactive ^{22}Na (1 $\mu\text{C}/\text{ml}$) for ten days.

While Dr. Kennington shows with this study that hair can be contaminated with ^{22}Na and cleaned with repeated washings of distilled water, and that ^{24}Na is removed under the same conditions, he does not characterize nor differentiate a sodium contamination from the endogenous sodium. The industry has assumed the contamination, which this study does not support.

His comment at the end of the paper, referring to ionic radius and charge, are undoubtedly correct as the residual elements following an eighty-minute wash in distilled water would be the insoluble ones. However, as the body requires soluble inorganic forms, these forms should invariably be present in the tissues formed by that body. Hair is no exception, and Study A would appear to support this observation.

Percentage of Loss and Chemical Solubility. Based on the cation solubilities of their compounds, five major solubility groups can be defined, from the least soluble to the most soluble:

- 1) Lead - (least soluble)
- 2) Copper, cadmium, mercury
- 3) Aluminum, chromium, iron, zinc, nickel, and manganese
- 4) Calcium and magnesium
- 5) Sodium and potassium - (most soluble)

By comparing the 30-minute wash results of Study A with the five solubility groups, a definite correlation between washout and solubility group can be seen. Likewise, Study B and Study C show the same pattern for calcium, sodium, and potassium in varying degrees. In short, degree of washout correlates well with chemical solubility. We can speculate that washout probably has less to do with physiology or external contamination of the hair, and more to do with chemical solubility of the elements involved.

Cutting The Hair Before Analysis. Studies B and C were undertaken to compare the effect of sectioning the hair before and after washing. One minute was chosen as the shortest practical time unit for washing, without making the wash procedure too labor intensive. The data presented in table 2 and 3 show erratic results. While these results may be due to incomplete washing, they may also indicate the individual biochemistry of the samples used. Overall, no consistent percentage of loss was apparent for any of the three minerals during washing in either study. Sectioned samples showed overall slightly lower average percentage of mineral loss during washing. In Study B, the calcium results for samples 3 and 4 are the exceptions.

Variation in Male and Female Hair Mineral Loss. Study B and C both showed that samples from women lost more minerals during washing than samples from men. This finding supports studies which indicate that female hair is more porous than male hair. The increased porosity could account for a more rapid loss of mineral from hair cut from women. While more studies are necessary, Study B and C indicate that sex may be another important variable that must be taken into account if hair is washed.

CONCLUSIONS

There is no doubt that washing a sample removes quantities of certain minerals, specifically calcium, sodium, and potassium. Studies A, B and C indicate that the pattern of mineral removal most closely correlates with the chemical solubility of the elements tested.

Some have judged that these losses constitute "contamination". I believe, as Robbins (5) has stated, that we are dealing with highly soluble compounds of calcium, sodium, and potassium, which are required by our body chemistry, and that these losses come from an integral part of the hair fiber.

These studies also indicate that the more washing that is done, the more minerals are removed. Also, the percentage of mineral loss is erratic and variable from sample to sample. In addition, samples from women lose more minerals than samples from men, overall.

Based on the studies presented, I believe that washing of the hair before analysis should be discontinued as a common practice, until we can positively state where mineral contamination stops and where endogenous minerals begin.

ACKNOWLEDGMENTS

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APPENDIX VI.

OTHER HEALING TECHNIQUES

Warning and disclaimer: No claims are made for any procedures described here. Nor are these procedures intended as treatments or prescriptions for any disease or condition. The following are presented for educational purposes only.

USES FOR A SINGLE REDDISH INFRARED ‘HEAT LAMP’

A single reddish, 250-watt ‘heat bulb’ is an extremely helpful device to have around the home for anyone who is following a development program. The cost of the bulb is about \$12.00 at a hardware store. *Caution:* Be careful not to burn yourself and be sure to use a socket that can handle 250 watts. Just a few of the many uses for this lamp include:

- Shining it on the head area as close as you can comfortably tolerate it for **nasal polyps, sinus congestion or infection, headaches, ear aches**, possibly **eye problems**, possibly **toothaches, scalp eruptions, and neck tension**. **WARNING:** *Do not look at the lamp at close range. Always close your eyes if you must shine it at your head area. Always limit the time shining the lamp at your head to five minutes or less per session. You may repeat the treatment up to once every hour for a few days for an acute condition.*
- Clients have reported relief from severe **low back pain**, and even pain due to cancer.
- A client cleared up **toenail fungus** on all of his toes after all other remedies had failed. He simply moved his toes as close as he could to a red heat lamp that was placed near his feet each day while he did his daily sauna. It took six months, but the toenails are now clear.
- Even babies can benefit who cannot use a sauna. One can shine the lamp on the abdomen for about ten minutes, preferably while the baby is lying comfortably in your lap or on a table. It can help **colic, constipation, anxiety, irritability** and other problems. ***Do not shine the light near a baby’s eyes or at a baby’s head at all.***
- **Skin rashes, blemishes, acne** and other skin conditions may or may not respond. Teenage or adult acne often responds beautifully, often in a few days to even one or two treatments for 5-15 minutes per day. It may come back, of course, if other causes are not addressed. Other conditions such as rosacea or some skin cancers may become irritated by the light.
- It can also be tried on pain in the elbows, knees, hands, or anywhere else during a program.

BATHS, GENERAL INFORMATION

Some baths cause problems during development programs because 1) they are very yin, and 2) one absorbs plenty of toxic metals and toxic chemicals from most bath water. For this reason, do not use baths more than once or at most twice weekly, ever.

PARTIAL BATHS

During development program, toxins will be released and infections cleared from all parts of the body. This can cause temporary symptoms such as aches, swelling, redness,

tightness or others. A very useful technique to move the toxins and infections out faster is the use of a partial bath just on the affected part of the body, such as a hand, a knee or a shoulder. Two basic types of partial baths are:

1) Cold water only. This is best for severe inflammation, with heat, pain, redness and swelling in most cases. One simply places the body part in a bucket of cold water for half an hour or so. If one cannot place it in the water, then one runs a cold shower on a shoulder, for example, or the back of the neck. Try not to get the water anywhere else so you do not become chilled. This partial bath can be repeated several times daily and is very safe for most people.

2) Alternating hot and cold water. This is even more powerful and is part of the old 'water-cure' system of healing. One alternately dips the body part in the hottest water one can stand comfortably for about 1-2 minutes. Then one dips it into the coldest water one can tolerate for about 3-4 minutes, usually. Repeat the process for 30-60 minutes or even longer. This is all there is to it. One can run the water in the bathtub or use two buckets, one with ice cubes in it if needed, while the other must be heated up periodically with more hot water in order to stay hot. This partial bath may also be repeated several times daily to relieve any type of inflammation, pain, itching, swelling or other healing reaction on a part of the body.

HYDROGEN PEROXIDE BATHS AND OTHER USES FOR 35% FOOD GRADE PEROXIDE

Hydrogen peroxide is one of the simplest, most powerful and safest disinfectants available. Its cost is also low and it is quite easy to use, although the 35% food grade peroxide will cause a slight burn if it spills full strength on the skin. Also, keep it away from the eyes or other sensitive areas of the body. Peroxide is used in some cities to purify drinking water and is widely used in industry to purify chemicals and many other items. Uses for it include:

- **Baths** – place about 1/2 of a cup of peroxide in a warm bath and sit in the bath for half an hour. Submerge as much of the body as possible in it. This can kill off some superficial infections. It is also an oxygenating bath and has other unusual properties that are health-promoting for most people.
- **Teeth** – Brushing with a few drops of 35% peroxide or dipping the toothbrush in peroxide and then brushing helps whiten the teeth, reduces bad breath and is an excellent disinfectant as well. The taste is not too good, however.
- **Cuts and bruises** – Peroxide from the drugstore (3% solution) is excellent for all cuts and bruises. It stings for a moment but will disinfect wounds of all kinds with no toxic effects and complete safety.
- **Hot tubs and pools** – To purify a hot tub, instead of chlorine, bromine and other poisons, add about a cup or so of 35% peroxide to the water about once a week. To check the peroxide level, buy dip sticks for peroxide, which are available on the internet. The safe level is about 200-250 ppm of peroxide. You may also need to add a pH balancing product to the spa water. The water may not look as clean and clear using peroxide, but it will be safer for bathing than any chlorine, silver or bromine treatment. Pools will require a lot more peroxide, and instructions are on the internet.

EPSOM SALT BATH

This bath is very relaxing for aching or tight muscles, muscle spasms or nervous tension.

Epsom salts contain a combination of magnesium and sulfur. Magnesium is often deficient in modern diets and one can absorb a significant amount in a bath. The procedure is as follows:

- Purchase 4 pounds of Epsom salts at the drugstore.
- As you fill a bathtub, stir in 3 to 4 pounds of Epsom salts. They should dissolve easily.
- The bath water may be warm or hot, but not uncomfortably so, as the intent is to relax.
- Submerge as much of the body as possible in the bath.
- Stay in the water for 20 to 30 minutes. There is no need to shower off after the bath, though it is okay if desired.

SALT AND SODA BATH

This is primarily an alkalizing and mineralizing bath. It is soothing to the skin, as well, in most cases. It can help balance the body's energy meridians, as well. While usually comfortable, the salt can sting the skin a little in some individuals. This bath will remove certain toxins and even help with infections, in some cases. It may help if one is experiencing a toxic metal elimination on a development program. The procedure is as follows:

- At the supermarket or drug store, purchase about two pounds of baking soda. Also purchase four pounds of sea salt. Any type of sea salt will do.
- As you fill your bathtub, add about 2 pounds of baking soda and 3 or 4 pounds of sea salt. The bath water should be fairly hot for best results.
- Stay in the water for 20 to 30 minutes. A shower may be helpful if you feel itchy or sticky from the salt. However, it is not necessary to take a shower afterwards.

HOT BATHS

A hot bath is a simple and often effective aid for fighting colds and other infections. Heating the core of the body with a bath that is as hot as one can comfortably tolerate is a form of fever therapy that enhances the immune response and weakens or even kills some microorganisms. The procedure can also help release toxins by inducing sweating. If the idea is to sweat, one can combine the hot bath with a cup of very hot tea, especially a warming tea such as ginger or regular tea, but not a sweetened tea.

THE GENITAL BATH

This hydrotherapy procedure is often effective for alleviating vaginal, prostate, bladder, uterine and other pelvic organ difficulties. Bladder and vaginal infections in women often respond very well to this procedure. Men can use it as well for urinary and penile difficulties. The genital bath is probably effective because the cold water causes a reaction that greatly enhances the blood flow to the lower abdominal and genital area. The procedure is as follows:

- Sit on the side of a bathtub tub facing into the tub. Alternatively, sit on a stool placed in the bathtub. One can wear a shirt, as the water will be directed only at the genital area.
- Splash cold water on the genital area only, using a wash rag or a flexible shower attachment.
- Continue the procedure for 10 minutes, and repeat it three or more times per day.

The genital bath can be repeated for as long as necessary with no ill effects.

LIVER-GALL BLADDER FLUSH

The liver-gall bladder flush is a way to force the gall bladder to empty and thus remove gallstones without surgery. It may also accelerate healing of the liver and gallbladder by reducing the amount of stones in the gall bladder. It is not, however, a substitute for a complete development program to restore the normal activity of the liver and gall bladder.

A liver flush or two may help at the beginning of a nutritional program or if one is having gall bladder problems. I am not aware of complications or damage from this procedure, although occasionally someone remains nauseated for several days afterwards. The procedure is:

- For 6 days, eat well, take your nutritional supplements and take 30 drops of phosphoric acid in a glass of water three times daily. Briefly brush your teeth afterwards to remove any acid residue. The drops can be purchased inexpensively via the internet at www.tuberose.com or 877-988-2376 or 352-797-8000 or perhaps elsewhere under the name “Phos-drops”. Instead of the drops, some procedures recommend drinking as much apple juice as possible. However, this is very sugary and will upset blood sugar badly in some people, so I would not recommend this method.
- Also take about 200 mg of magnesium (chelate, citrate or other quality product) three times a day, one tablet with each meal. The phosphoric acid and magnesium help soften stones and help dilate the bile ducts.
- At noon on the sixth day, eat a normal lunch, with the phosphoric acid drops and magnesium. Two hours after lunch, do a 1-quart coffee enema using 2 tablespoons of coffee, along with 2 tablespoons or 1/4 cup of Epsom salts in the enema. Retain this enema for 15 minutes.
- At suppertime, have a normal dinner with supplements, and be sure to have fat with the dinner, such as 2 tablespoons of butter on vegetables or some real whipped cream. At bedtime, take **one** of the following:
 - a) 1/3 cup of olive oil followed by some lemon or other juice if the taste is objectionable.
 - b) 1/3 cup of olive oil blended with 1/3 cup of orange, grapefruit or diluted lemon juice.
 - c) 4 tablespoons of olive oil followed by 1 tablespoon of fruit juice every 15 minutes until one has take 1/3 cup of olive oil. The olive oil will cause the gall bladder to contract strongly, expelling gall stones.
- Immediately upon finishing the oil, lie down on the right side with the right knee drawn up toward the chin for half an hour. This is to assist emptying of the oil out of the stomach.
- If ill during the night, one may take another strong coffee enema with Epsom salts.
- In the morning, if nauseous try to remain in bed until it passes. Upon arising, take another coffee enema with Epsom salts. If nausea continues after the procedure, eat lightly and skip your supplements for a day or two.
- Do not repeat liver flushes more than once or twice a month. They are not that helpful.

Notes and warnings: You may see some small gall stones in the stool. You will often also see softer cholesterol stones and possibly other debris that was stored in the gall bladder, including even worms and other parasites. Those with gall bladder pain may not experience relief. This may lead you to believe the procedure did not work. This is not true. Most likely, the pain is due to other gall bladder problems, such as parasitic infection, inflammation, imbalance in the gall bladder meridian or other causes. The same problem occurs with gall bladder surgery that does not truly address the cause of the liver-gallbladder pain. Following a development program will usually cause the pain to subside eventually.

For nausea. The release of bile causes nausea in a few cases. If nausea occurs during this procedure, it indicates stimulation of the gall bladder. Finish the procedure. If vomiting occurs, just continue and do not add more than the planned amount of olive oil.

OTHER DETOXIFICATION METHODS

Salt water gargle and sinus flush. This is a very effective way to stop some infections of the nasal passages, throat and sinuses that is very safe and simple to do. The procedure is:

- Mix one-half teaspoon of sea salt (Hain is a good brand) in six ounces of distilled water.
- For throat and bronchial conditions, gargle with this mixture four or five times daily.
- For nasal or sinus-related conditions, sniff or snort the mixture into each nostril at least three to six times daily.
- Continue for several days or as needed. The procedure is very safe.

Castor oils packs. These are helpful for liver detoxification, and are soothing. They were recommended by Edgar Cayce and others. You will need a bottle of castor oil. It is sold in drug stores. Some people prefer organic castor oil, but any type should work. Pour some castor oil onto a piece of 12" by 12" flannel or other thicker cloth. The cloth should be saturated, but not dripping. Then follow either of the two procedures below. The first one is a little better:

- At bedtime, place the oil-saturated piece of flannel on your abdomen. Cover it with a plastic bag to keep the oil from soiling your bedclothes. Wrap an ace bandage around your waist and around the pack several times to hold the pack on to your abdomen firmly. Go to bed this way and keep the pack on all night long. **OR**
- During the day, lay down on your back in bed. Place the oil-saturated cloth on your abdomen, especially over the liver area. Cover it completely with a large plastic bag. Then place a heating pad on top of the plastic bag and turn it on high. Remain laying down with the pack on your abdomen for 3 hours.

Cleanup. When you remove the pack from your abdomen, place the pack in a glass or plastic container and cover it tightly. You can reuse the pack many times. Just add a little castor oil when it starts to dry out. Wipe off any castor oil that is on your abdomen with a damp rag or perhaps a paper towel.

Hot tubs, if heated to over 103 F. cause some detoxification. Serious problems with hot tubs include: 1) one always absorbs chemicals from the water unless it is distilled or reverse osmosis water. 2) Toxic chemicals, even silver, must be added to the water and these are absorbed as well. Never use chlorine or bromine, if possible, as these are quite toxic, 3) hot tubs are breeding grounds for bacteria and viruses, even if the tub is sanitized, unless you use hydrogen peroxide at about 200-250 parts per million, which will work. 4) you can never really clean the pipes that are inside the tub, so germs build up there that cannot be seen or cleaned out.

Because of these problems, here are rules for hot tubs: Strictly avoid all public hot tubs at hotels, health clubs, and elsewhere as they are often breeding grounds for serious infections and loaded with toxic chemicals. Home hot tubs are better, but you will still absorb chemicals in the

water unless you use reverse osmosis or distilled water and unless the tub is purified with hydrogen peroxide, which works well.

Other detoxification methods. These are discussed in Chapter 5. Please totally avoid ionic foot baths, in particular, as they do damage to the etheric or subtle human bodies.

THE COCA PULSE TEST FOR FOOD REACTIONS (Neuro-Lingual Test)

Theory of the Coca pulse test: Arthur F. Coca, MD, a renowned allergist, noted that upon eating a food to which one is sensitive, the pulse generally increases several beats per minute. The exact mechanism is not clear, but the reaction is most likely a sympathetic nervous system response to the allergic food. The test is easy to do at home with no special apparatus needed. It is not 100% foolproof. However, in my experience, no food allergy testing system is foolproof. This test may not be valid if you are taking a drug that controls your heart rate, such as a calcium-channel blocker or a beta-blocker. Also, do not do this test immediately after exercising or if you are very stressed for any reason. Here is the procedure:

- Sit down calmly and take a few deep breaths to help you relax.
- When you feel relaxed, establish your baseline pulse by counting your heart beat for at least a full minute or two. Preferably record your resting pulse rate on a piece of paper.
- Put a sample of **one** food item or **one** food supplement in your mouth, on your tongue. You may chew it if desired, but refrain from swallowing it. You need to taste it for approximately one-half minute. Test only one food ingredient at a time. For example, testing just chicken is much better than testing a chicken enchilada.
- Retake your pulse while the food or the supplement remains in your mouth. An increase of 4 or more beats per minute is considered the result of a stressful reaction to the food. For 0 Blood Type people, an increase of 3 beats or more is considered a positive reaction. The greater the stress response of your body, the higher the heart rate will tend to be.
- After taking your pulse, discard the tested food. Do not swallow it.
- If you wish to test another food, rinse out your mouth with purified water and be sure you are relaxed. Also, before repeating the procedure with another food or supplement, be sure your resting pulse has returned to the baseline level. You may have to wait 2-5 minutes for your pulse to return to its resting level.

APPLIED KINESIOLOGY OR MUSCLE TESTING

This is a method of sensing the body's electrical reaction to a substance placed in its main energy meridian that runs down the center of the body. The strength of a muscle is tested with and without the substance in the energy field to note if the muscle gets weaker in its presence. Muscle testing can be useful, at times, for which reason I have included it here. Please note, however, that it is a fairly superficial, symptomatic approach compared with development science. It is also dependent too much on the skill of the practitioner. Therefore, its use is strictly limited, and for most purposes I do not recommend it for nutritional testing.

Good uses for kinesiology. The method may be helpful for 1) testing drinking water in some cases, and 2) very sensitive people to test supplements, foods or even skin care or other products. *Muscle testing supplements used in a development program may not confirm the recommendations based on the hair mineral analysis.* Reasons for this include:

- The practitioner or the client's energy system can be 'blocked' or 'reversed'.

- The practitioner or the client may be tired, thirsty, tense, ungrounded, or even just distracted.
- The practitioner may be receiving signals based on the time of day. Hair analysis, in contrast, offers a long-term view of what a person needs that is usually much more accurate over the long haul, even if it is not correct on a particular day or time.
- The practitioner cannot easily measure the combination effects of the supplements. The reason is that even though one can hold them all at once, their physiological effects are far more complex than this inside the body.
- Development programs are often designed to break a stagnant pattern in the body, such as four lows. This can temporarily add stress, so it may not test well, though it works.
- Kinesiology may produce only black and white, or good or bad readings unless perhaps one is very skilled. This is not always appropriate in healing, when an intervention or supplement may have both positive and negative effects on a person.
- Development programs depend heavily on supplement combinations. Testing all the complex combinations is basically impossible.

The basic muscle testing procedure: Warning: Muscle testing may not be that accurate, especially if you don't practice often and check yourself and the client frequently for reversals and other problems. It will also not work nearly as well if the operator or the subject are too tired, hungry, thirsty or stressed.

Step 1. Checking for reversals and blocks.

- Sit comfortably. Have one arm hanging loosely downward by your side. Raise either arm straight out, but slightly forward, with the wrist slightly higher than your shoulder and the elbow locked. The hand should hang loosely from your wrist.
- Have an assistant place two fingers lightly on the top of your upraised arm, just above the wrist. When your assistant says "resist", have him or her apply downward pressure with the two fingers, while you try to resist the downward pressure. You should be able to do this fairly easily.
- Now twist in an outward direction your other arm and wrist, the one that is not raised. Hold this position vigorously, as hard as you can.
- At the same time, have your assistant again apply downward pressure on your upraised arm. The arm should go weak, meaning you should not be able to resist the pressure.
- If this occurs, you are ready to test foods, water or other items.
- If the arm does not test weak, you are blocked or reversed. Do not continue the procedure. You must rest a few minutes, drink some water, perhaps eat something and try again later.

Step 2. Actual testing. This requires some practice to become proficient.

- Assume the position for testing, as described above with one arm raised.
- Hold a food or other product to the middle of your chest. This places it in a main central acupuncture meridian in a way that cuts through the energy field of the body.
- Test the arm strength, exactly as described above. For confirmation, you may test with nothing in the energy field afterwards, or with something that you know if it is healthful or definitely unhealthful for you.
- If you are testing many items, check for reversals or blocks every 15 minutes or more, repeating step one above. You may switch arms for comfort.

APPENDIX VII. *THE CHINA STUDY*: A BOOK REVIEW

The China Study (2006) caused quite a stir, at least among those interested in vegetarian diets. I found this book objectionable on many grounds, and will just touch upon a few of them. The most important, from a scientific viewpoint, are many simple factual errors. These should alert the reader as to the general competence of the author. For example:

- **“Simple carbohydrates are found in foods like white bread... crackers and chips made with white flour.”** (p. 98). Bread, crackers and chips are not simple carbohydrates. They are complex carbohydrates. Simple carbohydrates are sugars.
- **“Most Americans consume voluminous amounts of simple, refined carbohydrates and paltry amounts of complex carbohydrates.”** (p. 98). In fact, Americans eat huge quantities of complex carbohydrates such as breads, cakes, pies, potatoes, chips and so forth.
- **“There are virtually no nutrients in animal-based foods that are not better provided by plants.”** (p. 213). This is horribly incorrect. Zinc is practically impossible to obtain from vegetable products unless one lives on pumpkin and sunflower seeds. Vitamins A and D, sulfur-containing amino acids, certain fatty acids, alpha-lipoic acid and quite a few others are also much easier to obtain from animal quality foods.
- **“Animal protein has the tendency to block the production of supercharged vitamin D.”** (p. 180) This is not supported scientifically anywhere that I know of.
- **About vitamin D - “This “vitamin” is not a nutrient that we need to consume. Our body can make all that we need simply by being in sunlight fifteen to thirty minutes every couple of days.”** (p. 179). This statement ignores all the newer research on vitamin D indicating that sunlight is not sufficient, even if one spends a few hours daily in the sunshine.
- **“Nutrition that is truly beneficial for one chronic disease will support health across the board.”** (p. 237). In fact, a food such as orange juice that is helpful for one malady (vitamin C deficiency) commonly causes other imbalance (it is very high in sugar and very yin).
- **“The recommendations coming from the published literature are so simple that I can state them in one sentence: eat a whole-food, plant-based diet, while minimizing the consumption of refined foods, added salt and added fats.”** (p. 242). This is completely incorrect, since there are literally millions of pages of scientific literature that come to different conclusions. If he were right, all doctors would recommend a vegetarian diet, but they do not, in part because plenty of evidence supports the idea that a mixed diet is best.
- **“Vitamin supplements are not a panacea for good health.”** (P. 228). If this means living on pills, of course it is not a panacea. But the author here is discouraging people from using supplements. This is horrible advice.
- **“Nutrition can substantially control the adverse effects of noxious chemicals.”** (p. 235) This is not correct. It can help a little, but the statement is absolutely wrong. One must avoid all toxic exposures as much as possible, and one must detoxify the body with supplements and other methods such as saunas or one will not remove most toxic chemicals and toxic metals. Food alone, in my extensive experience, will not do it.
- **“Good nutrition creates health in all areas of our existence. All parts are interconnected.”** (p. 238) I wish it were that easy. Especially on a vegetarian diet, it does not create health in any area that I have noticed with my clients, and many other doctors have found the same thing. One must also live a healthful lifestyle, detoxify the body, and perhaps do other therapies such as chiropractic or others to create health in more areas of life.

Another severe flaw in the book is to compare the needs of Chinese peasants with those of Americans. Chinese and other Orientals seem to need less B-complex and zinc, for which reason they have been vegetarian-oriented people for thousands of years. Caucasians, however, have never been vegetarians, and do not do nearly as well on this diet.

One-sided arguments. Another flaw in this book is that the author himself states that he is a big fan of a vegetarian diet. He spends most of the book proving his case by presenting only one side of the story. This is fine as a vegetarian manifesto. However, the author portrays himself and the book as ‘objective’ and ‘scientific’, when it is anything but that. The author does not even admit that there is another side to the story, and repeatedly derides well-respected physicians who favor animal protein diets.

For example, a wonderful book that presents both sides of the story is *Nutrition And Physical Degeneration* by Weston Price, DDS. Dr. Price investigated not one race, but all races on planet earth. He found that meat-eating produced far better health, especially inter-generationally, something that Dr. Campbell did not investigate at all. However, this may be said to be the most important criteria for health – how healthy will the babies be? In other words, even if you feel better on a vegetarian regimen, how will your grandchildren fare on this diet? The answer among the vegetarians was, not well at all. He found that vegetarian diets led to more birth defects. This should not be surprising because zinc and selenium, for example, are critical to prevent birth defects, and are lower in many vegetarian diets. All vegetarians should take zinc and selenium supplements, but they often do not work as well as eating some animal protein, which has many other nutrients as well. A more balanced view of vegetarian diets must include the following:

Benefits of vegetarian diets. They tend to be higher in fiber and generally higher in fresh fruits and vegetables. They also tend to be higher in some vitamins, such as vitamin C and E. They tend to be lower in fat, which may be helpful for a few people today, but harmful for many others. They are also lower in iron, which is also helpful for some, particularly older men, but harmful for others. They are also lower in some pesticides and hormones injected into animals. This is a definite benefit, but not important if one eats only organic food, as suggested.

This must be balanced with the problems with vegetarian diets. They are much higher in copper and in carbohydrates, in most cases. Most people already have too much copper and most eat too many carbohydrates. Even worse, they tend to be very low in zinc, vitamin D and B-complex vitamins that most people desperately require more of. They are also usually much lower in sulfur-bearing amino acids such as taurine, cysteine and methionine. These are essential for liver detoxification and many other functions in the body. Meat also contains other nutrients that our bodies require such as L-carnitine, alpha-lipoic acid and many others.

Extremely yin and low in etheric energy. Another serious problem with vegetarian diets is they are very yin in Chinese medical terminology. I realize this is a more esoteric concept. It means they are more expanded and centrifugal in nature. This is okay, except that it further unbalances most people today whose bodies are already too yin. Another serious problem from a mental development standpoint is that most vegetarian food is very low in etheric energy. This is a subtle life energy that has nothing to do with food enzymes or cooking of food. It is a quality of animals, basically, so vegetables contain very little of it. Yet it is helpful for the mental development of human beings. One need only look to the vegetarian nations of the world to realize that the people there are not more developed, but much less so than those in nations such as America who eat more meat. For all these reasons, *The China Study* was a great disappointment, as a physician looking for unbiased scientific reporting.

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ABOUT THE AUTHOR

Lawrence Wilson was in college studying electrical engineering at the Massachusetts Institute Of Technology when his brother was suddenly diagnosed with late-stage Hodgkin's disease. He switched college majors and soon obtained a grant from the MIT Department of Nutrition to study the relationship between diet and cancer.

After graduating college, in hopes of helping his brother, he applied to medical schools, but shunned American schools that taught only drug cures. He obtained a medical degree from the Autonomous University of the State of Guerrero, in Chilpancingo, Mexico. While attending medical school, he studied with a number of natural healing practitioners.

Dr. Wilson developed chronic fatigue syndrome and other health problems following medical school. His journey to restore his own health led him to work with many healing methods, both medical and alternative. Like so many, he consulted doctor after doctor looking for answers. Among the most important teachers that he studied with and learned from were Bernard Jensen, ND, DC, Michio Kushi of macrobiotics fame, Roy Masters who teaches meditation, William Donald Kelley, the cancer pioneer, and several others.

In 1981, Dr. Wilson opened a nutrition consulting practice in Phoenix, Arizona. The following year he met Dr. Paul C. Eck, to whom this book is dedicated. This began a lifelong friendship and professional relationship that lasted 14 years until Dr. Eck's death. Dr. Wilson learned development science from Paul Eck and his staff, and gave numerous seminars with them.

In 1996, Dr. Wilson moved to Prescott, Arizona. He mainly teaches development to practitioners by telephone and email, writes books, and writes and updates articles for the large development web portal, *www.drlwilson.com*.

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