SLEEP --THINGS THAT HELP-STAGES AND BENEFITS

Nutrients That Can Induce Sleep

These Foods/Herbs Improve the Quality of Sleep

Some things that can carry Melatonin

Tryptophan (Trp) Content of Various Foods

Stages of Sleep

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Nutirents That Can Induce Sleep

5-HTP (5-Hydroxytryptophan) increases total Sleep time.

Acetyl-L-Carnitine improves the quality of Sleep and reduces the optimal number of hours of Sleep required.

Phenylalanine reduces the amount of Sleep time required.

Tryptophan (500 - 4,000 mg per night) reduces the amount of time taken to fall asleep (Sleep latency) when taken one to two hours prior to retiring.

 Antioxidants---Butylated Hydroxytoluene (BHT) reduces the amount of Sleep time that is required for optimal health.

 Hormones----Supplemental, exogenous Dehydroepiandrosterone (DHEA) (50 mg per day) improves the quality of Sleep (especially in people aged 40 and over).

Human Growth Hormone (hGH) helps to regulate and facilitate Sleep--Endogenous hGH is released during Slow-Wave Sleep and helps to regulate REM Sleep. Exogenous, supplemental hGH has been demonstrated to restore Slow-Wave Sleep and REM Sleep patterns to normal. Supplemental, exogenous Melatonin decreases the relative proportion of the Drowsiness and Stage 1 Sleep and increases the relative proportion of Stage 2, Slow-Wave and Rapid Eye Movement Sleep Supplemental Melatonin greatly reduces the number of movements during Sleep, reduces the time taken to fall asleep after retiring (Sleep latency), reduces the body’s core temperature during Sleep and improves the subjective quality of Sleep without increasing next-morning Drowsiness.

 Progesterone helps to restore normal Sleep cycles.

Exogenous Vasopressin improves the quality of Sleep, increases total Sleep time and increases the quantity of Slow-Wave Sleep.

Lipids- Exogenous Prostaglandin D2 (PGD2) infused into the Cerebral Ventricles (in a clinical setting) induces natural Sleep.

 Minerals

 Magnesium (when consumed just prior to retiring) improves the quality of Sleep.

Potassium improves the quality of Sleep and reduces the frequency of awakenings after the onset of Sleep.

Neurotransmitters

 Acetylcholine helps to maintain Sleep. It controls the amount of sensory input that reaches the Brain during Sleep and increases the stimulus barrier (increasing the threshold of sensory inputs before wakiing occurs) during Sleep. Optimal Acetylcholine allows sleepers to remain asleep through minor noises and other disturbances. Light sleepers are likely to have sub-optimal Acetylcholine.

 Supplemental, exogenous Gamma Aminobutyric Acid (GABA) (1,000 - 3,000 mg administered sublingually at night) facilitates Sleep. research

Smart Drugs--Diapid alleviates some Sleep disorders.

Dimethylaminoethanol (DMAE) reduces the amount of Sleep required by approximately one hour per night (this effect occurs after six weeks of continuous DMAE use):

DMAE makes it easier for most people to get fall asleep Sleep at night.

DMAE users experience a sounder Sleep and after six weeks of continuous DMAE use, most people report waking earlier and having a clearer mind upon waking.

 Gamma-Hydroxybutyrate (GHB) facilitates both Rapid Eye Movement (REM) Sleep and Slow-Wave (deep or non-REM) Sleep. research

Minaprine improves the quality of Sleep (when taken early in the day):

Minaprine users report awakening with reduces tiredness in the morning.

Caution: Minaprine should not be consumed at night as it can prevent Sleep.

Vitamins

 Choline improves the quality of Sleep. It helps to keep an individual asleep after they have fallen asleep (via its role as a precursor for Acetylcholine, the Neurotransmitter that helps to prevent unnecessary interruptions to Sleep from non-threatening stimuli).

Inositol (1,000 - 10,000 mg taken at bedtime) improves the quality of Sleep (by assisting Vitamin B3 to bind to the Benzodiazepine Receptors in the Brain).

Vitamin B3 (200 - 1,000 mg of the Niacinamide form of Vitamin B3 taken at bedtime) improves the quality of Sleep (by binding to the Benzodiazepine Receptors of the Brain).

Vitamin B6 improves the quality of Sleep (by functioning as a cofactor for the production of Serotonin).

Vitamin B12 improves the quality of Sleep (by increasing endogenous Melatonin levels early in the night and reducing Melatonin levels at then end of a night’s Sleep).

Vitamin E improves the quality of Sleep.

These Foods/Herbs Improve the Quality of Sleep

Fruits---Grapefruit (juice consumed at night) improves the quality of Sleep.

Herbs----Astragalus improves the quality of Sleep (it has been demonstrated to increase Sleep time in animal studies).

Catuaba reputedly improves the quality of Sleep.

Damiana helps some people to Sleep better (according to anecdotal reports).

Essiac (a mixture of Herbs - primarily Sheep Sorrel) improves the quality of Sleep (according to anecdotal reports).

Ginkgo biloba rectifies impaired Sleep quality in persons using Tricyclic Antidepressants and may also improve Sleep quality in normal, healthy persons: Ginkgo biloba reduces the duration of Stage 1 Sleep in persons using Tricyclic Antidepressants and may also reduce the duration of Stage 1 Sleep in normal, healthy persons. Ginkgo biloba enhances the quality of Slow-Wave Sleep (deep Sleep) in persons using Tricyclic Antidepressants and may also enhance the quality of Slow-Wave Sleep in normal, healthy persons.

 Lavender (oil used in Aromatherapy) and tincture or tea improves the quality of Sleep.

Passion Flower induces a restful Sleep free from frequent awakenings and disturbances (by means of its constituent Harmala Alkaloids sedating the Central Nervous System).

Siberian Ginseng normalizes Sleep patterns.

Valerian improves the quality of Sleep.

Vanillin or Vanilla assist in the relaxation and inducing of sleep

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Recipes for Sleep—Glycine 500mgs + Inositol 500mgs 30 min before bed

Taurine 500mgs + magnesium—Gaba 500mgs + Niacinamide 250-500mgs

Melatonin- Trytophan 500mgs + Niacin 50 mgs Vanilla 10 drops + Lavender tincture 10 drops in 2 oz of water—Passion flower 10 drops + St John’s wort

Valerian tincture + Passion Flower10 drops of each in water—Utilize an of these combinations 30 minutes before going to bed and do not Mix Under any circumstance with anything from the pharmacy that is drug related

 Some things that can carry Melatonin

Melatonin: Natural food and non-food sources of melatonin

Melatonin is a molecule synthesized in the brain by the pineal gland and in the gastrointestinal tract. Melatonin is also synthesized in other organisms including plants.

Melatonin is believed to be responsible for the synchrony of circadian rhythm, modulating sleep patterns with day and night.

Melatonin is an antioxidant and protects tissues from oxidative damage by free radical elements. Further more, melatonin induces synthesis of endigenous antioxidants such as superoxide dismtase (SOD).

Several researches indicate that melatonin protects the gastrointestinal tract from irritation, reduces stress-induced lesion formation and heals ulcer.

Below are lists containing natural plant sources of melatonin. Melatonin content is in nanogram (ng) per gram of plant sample

Melatonin source

Melatonin content (ng/g)

Huang-qin

7,110

St. John’s wort, flower

4,390

Fever few, green leaf

2,450

Fever few, gold leaf

1,920

St. John’s wort, leaf

1,750

White mustard seed

189

Black mustard seed

129

Wolf berry seed

103

Fenugreek seed

43

Sunflower seed

29

Fennel seed

28

Alfalfa seed

16

Green cardamom seed

15

Tart cherry fruit (Montmorency)

15

Flax seed

12

Anise seed

7

Coriander seed

7

Celery seed

7

Poppy seed

6

Milk thistle seed

2

Tart cherry fruit (Balaton)

2

Melatonin source

Melatonin content [ng/g]

Feverfew, fresh leaf

> 1,300

Feverfew, dried leaf

>7,000

Almond seed

39

Pimpinella peregrina, dried root

38

Sunflower seed

29

Fennel seed

28

Lemon verbena, young plant

22

Balm mint, young plant

16

Green cardamom seed

15

Artcherry, Montmorency, fruit

15–18

Anise seed

7

Tall fescue seed

5

oat seed

1.8

Indian corn seed

1.3

Rice seed

1

Red radish root tuber

0.6

Japanese radish , stem and leaves

0.6

Tomato fruit

0.5

Ginger tuber

0.5

In using this chart keep in mind this is nanogram which means 1 billionth of a mg

So that implies a small amount—so in order to get any benefit from these sources you would have to consume them in adequate amounts st johns is 4,390 per gram 0r 1000-mgs so if you took 5 grams you would get over 2 mgs which is what the pill is usually between 1-3 miligrams

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Tryptophan (Trp) Content of Various Foods

Food↓

Protein

[g/100 g of food]↓

Tryptophan

[g/100 g of food]↓

Tryptophan/Protein [%]↓

egg, white, dried

81.10

1.00

1.23

spirulina, dried

57.47

0.93

1.62

cod, atlantic, dried

62.82

0.70

1.11

soybeans, raw

36.49

0.59

1.62

pumpkin seed

33.08

0.57

1.72

cheese, Parmesan

37.90

0.56

1.47

Caribou

29.77

0.46

1.55

sesame seed

17.00

0.37

2.17

cheese, cheddar

24.90

0.32

1.29

sunflower seed

17.20

0.30

1.74

pork, chop

19.27

0.25

1.27

Turkey

21.89

0.24

1.11

Chicken

20.85

0.24

1.14

Beef

20.13

0.23

1.12

Salmon

19.84

0.22

1.12

lamb, chop

18.33

0.21

1.17

perch, Atlantic

18.62

0.21

1.12

Egg

12.58

0.17

1.33

wheat flour, white

10.33

0.13

1.23

baking chocolate, unsweetened

12.9

0.13

1.23

Milk

3.22

0.08

2.34

rice, white

7.13

0.08

1.16

oatmeal, cooked

2.54

0.04

1.16

potatoes, russet

2.14

0.02

0.84

Stages of Sleep

Usually sleepers pass through five stages: 1, 2, 3, 4 and REM (rapid eye movement) sleep. These stages progress cyclically from 1 through REM then begin again with stage 1. A complete sleep cycle takes an average of 90 to 110 minutes. The first sleep cycles each night have relatively short REM sleeps and long periods of deep sleep but later in the night, REM periods lengthen and deep sleep time decreases.

Stage 1 is light sleep where you drift in and out of sleep and can be awakened easily. In this stage, the eyes move slowly and muscle activity slows. During this stage, many people experience sudden muscle contractions preceded by a sensation of falling.

In stage 2, eye movement stops and brain waves become slower with only an occasional burst of rapid brain waves. When a person enters stage 3, extremely slow brain waves called delta waves are interspersed with smaller, faster waves. In stage 4, the brain produces delta waves almost exclusively. Stages 3 and 4 are referred to as deep sleep or delta sleep, and it is very difficult to wake someone from them. In deep sleep, there is no eye movement or muscle activity. This is when some children experience bedwetting, sleepwalking or night terrors. In 2008 the sleep profession in the US eliminated the use of stage 4. Stages 3 and 4 are now considered stage 3.

In the REM period, breathing becomes more rapid, irregular and shallow, eyes jerk rapidly and limb muscles are temporarily paralyzed. Brain waves during this stage increase to levels experienced when a person is awake. Also, heart rate increases, blood pressure rises, males develop erections and the body loses some of the ability to regulate its temperature. This is the time when most dreams occur, and, if awoken during REM sleep, a person can remember the dreams. Most people experience three to five intervals of REM sleep each night.

Infants spend almost 50% of their time in REM sleep. Adults spend nearly half of sleep time in stage 2, about 20% in REM and the other 30% is divided between the other three stages. Older adults spend progressively less time in REM sleep.

As sleep research is still a relatively young field, scientists did not discover REM sleep until 1953 when new machines were developed to monitor brain activity. Before this discovery it was believed that most brain activity ceased during sleep. Since then, scientists have also disproved the idea that deprivation of REM sleep can lead to insanity and have found that lack of REM sleep can alleviate clinical depression although they do not know why. Recent theories link REM sleep to learning and memory.

Stage

Frequency (Hz)

Amplitude (micro Volts)

Waveform type

awake

15-50

<50

pre-sleep

8-12

50

alpha rhthym

1

4-8

50-100

theta

2

4-15

50-150

splindle waves

3

2-4

100-150

spindle waves and slow waves

4

0.5-2

100-200

slow waves and delta waves

REM

15-30

<50

The waveform during REM has low amplitudes and high frequencies., just like the waking state. Early researchers actually called it "paradoxial sleep".

According to the results of a study completed by Statistics Canada, the amount of sleep a person gets each night depends on a variety of factors, including gender, marital and employment statuses. More...

 The functions of many organ systems are linked to the sleep cycle.

Endocrine system---Most hormone secretion is controlled by the circadian clock or in response to physical events. Sleep is one of the events that modify the timing of secretion for certain hormones. Many hormones are secreted into the blood during sleep. For example, scientists believe that the release of growth hormone is related in part to repair processes that occur during sleep. Follicle stimulating hormone and luteinizing hormone, which are involved in maturational and reproductive processes, are among the hormones released during sleep. In fact, the sleep-dependent release of luteinizing hormone is thought to be the event that initiates puberty. Other hormones, such as thyroid-stimulating hormone, are released prior to sleep.--- Both sleep and circadian effects interact to produce the overall rhythmic pattern of the pituitary and pituitary-dependent hormones. Some of the 24-h hormonal rhythms depend on the circadian clock (ACTH, cortisol and melatonin), or are sleep related (prolactin and TSH). GH secretion is influenced by the first slow wave sleep (SWS) episode at the beginning of the night. Pulses of prolactin and GH are positively linked to increases in delta wave activity, i.e. deepest phases of sleep, occurring primarily during the first third of the night. Pulses of TSH and cortisol are related to superficial phases of sleep. As a result of the consolidation of the sleep period, the wake-sleep transition is associated with physiological changes with the endocrine system being part of the adaptive mechanism to reduce physical activity during sleep----

Renal system---Kidney filtration, plasma flow, and the excretion of sodium, chloride, potassium, and calcium all are reduced during sleep. These changes cause urine to be more concentrated during sleep. ---There is also sleep-related increase in plasma aldosterone levels; an increase in prolactin secretion. There is increased parathyroid hormone release during sleep, which may affect calcium excretion. In general, the following are reduced during sleep: glomerular filtration rate, renal plasma flow, filtration fraction, and the excretion of sodium, chloride, potassium, and calcium. Smaller quantities of more concentrated urine are excreted during NREM sleep than during wakefulness; during REM sleep urine excretion is reduced and concentrated to a greater extent than during NREM sleep.

 Alimentary activity--In a person with normal digestive function, gastric acid secretion is reduced during sleep. In those with an active ulcer, gastric acid secretion is actually increased and swallowing occurs less frequently.

Sleep---Does Not Equal rest!!!

We all need to rest and recharge---GH – Growth Hormone- is a Hormone of regeneration repair and Growth---and is usually released either through extreme stress or deep sleep and or through starvation or diminished food intake---so it is critical to give our systems the ability to rest---and Sleep is the route most of us can do and if not ---then this will be some ideas you can use—

Recipe #1 Iodine 2 drops---3 grams of Vitamin C—1 dropper of cesium Chloride ( or magnesium citrate 100-200 mgs or potassium citrate 200mgs or put in both ) 2 ounces of water ---stir and mix quickly and while this is fizzing down it ---then proceed to burp and go and lay down ---this will put you into a deep restful sleep

Recipe # 2 galangal/cayenne tincture---apply 3 drops into either honey or oil and swallow---this to increases the level of how deep the sleep is

Recipe #3 a mixture of aminos such as trytophan and gaba will increase the level of sleep 500 mgs of trytophan before sleep--- take gaba 500mgs & 500 mgs of niacinamide---this to will increase the deepness of sleep---taurine 500mgs & 500mgs magnesium citrate & inositol 500mgs this will initiate sleep

Recipe #4..Using melatonin 3-10 mgs can as well be used to induce a deep sleep –draw back with this is that if you need to be up at a certain time frame this can have a groggy like effect for several hours after arising

Recipe #5Herbal teas such as chamomile---valerian—hops----skullcap---st john’s wort---passion flower---motherwort---kava kava—peppermint- lavender- take singularly or in combo to induce the ability to wind down and sleep and to be able to get into that level of sleep you need to rest

Hypothetical Time Stage Duration Brain Waves Description

11.00 PM Drowsiness: Varies Alpha Waves

Theta Waves There is a drifting feeling and the eyes are closed. Muscles are relaxed. The individual is still alert to the environment.

11.15 PM Stage 1: 1 - 3 minutes Theta Waves A transition from waking to sleeping characterized by further relaxation of the Muscles and slow movements of the Eyeballs back and forth.

11.17 PM Stage 2: 10 minutes Beta Waves

(Sleep Spindles) Metabolic activity decreases. Blood Pressure and Heartbeat rate decrease. The individual can still be awakened and is sensitive to noise during this period. Muscle are further relaxed. No Eyeball movement. Leg twitches occur during this phase of Sleep.

11.27 PM Stage 3

Deep Sleep 5 - 15 minutes Delta Waves Human Growth Hormone and Luteinizing Hormone are released from the Pituitary Gland during this phase of Sleep.

11.37 PM Stage 4

Deep Sleep 30 minutes Delta Waves Restorative Sleep Phase during which cells repair and rejuvenate themselves. This is the deepest phase of Sleep. Human Growth Hormone is released from the Pituitary Gland during this phase of Sleep.

12.07 AM Stage 3 10 minutes Delta Waves

12.17 AM Stage 2 10 minutes Beta Waves

12.27 AM REM Sleep: 20 minutes Theta Waves Muscles are relaxed but Brain Waves quicken (likened to Stage 1 Sleep). Increased blood circulation to the Brain. Breathing quickens while Blood Pressure and Heartbeat rate increase. Men experience Erections. Dreaming occurs during this phase.

12.47 AM Stage 2 25 minutes Beta Waves This cycle of Stage 2 Sleep is when most people are likely to grind their teeth, walk, or talk in their Sleep.

1.12 AM Stage 3 7 minutes Delta Waves

1.19 AM Stage 4

Deep Sleep 10 minutes Delta Waves

1.29 AM Stage 3 5 minutes Delta Waves

1.34 AM Stage 2 5 minutes Beta Waves

1.39 AM REM Sleep 15 minutes Theta Waves

1.54 AM For the rest of the Night the body alternates between Stage 2 Sleep and REM Sleep until awakening (People who remember their Dreams are most likely to have awoken during REM Sleep).