

# Nutrients Helpful To Cure Sleep Disorders

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**Abstract:** *Our lifestyle has greatly influenced by the everyday rhythm of life and sleep being one of them. Sleep is a state of relaxation for the mind and body, during which consciousness and volition are in abeyance and bodily functions are partly suspended. Chronic sleep deprivation like apnea, insomnia and disturbed sleep can lead to depression, hypertension and various health problems. Researches shows that people who sleep well are more happy and healthy, they feel enthusiasm in their life and actively participate in all activities of daily life. They enjoy their life fully and stay fit whereas the people who don't sleep well may sense laziness and dizziness in the daily activities of daily living. They report depression, heart diseases, stress, anxiety, obesity kind of problems etc. To cure sleep disorders we should include vitamin A, B, C and D in the diet. Also have to add zinc, magnesium, calcium, phosphorus, fatty acids and low dairy products and complex carbohydrates in the diet. Eat nutritious food and avoid junk food to stay healthy.*

**Keywords:** Sleep disorders, wellbeing, vitamins, minerals and fatty acids

## 1. Introduction

Sleep is a time of relax and recovery from the stresses of everyday life, research is enlightening that sleep is a dynamic activity, during which many processes essential to well-being and health take place. New facts show that sleep is necessary to helping maintain cognitive performance, mood and memory. It also plays a fundamental role in the normal function of the immune and endocrine systems. Studies show a growing relation between a variety of serious health problems, including obesity, diabetes, hypertension, and depression and sleep duration. (National Sleep Foundation, 2006)

There are two types of sleep in human beings. REM (Rapid eye movement) and NREM (Non-rapid eye movement) Sleep. REM sleep is —active period of sleep marked by intense brain activity. Brain waves are fast and desynchronized, similar to those in the waking state. Breathing becomes more rapid, irregular, and shallow; eyes move rapidly in various directions and limb muscles become temporarily paralyzed. Heart rate increases and blood pressure rises. This also is the sleep stage in which most dreams occur.” NREM sleep is characterized by a reduction in physiological activity. As sleep deepens, a person's brain waves slow down and gain amplitude, both breathing and the heart rate slow down, and the individual's blood pressure drops. (National Sleep Foundation, 2006)

A number of sleep disorders can disrupt our sleep quality. **Sleep disorders** are several changes in sleeping patterns or habits. Signs and symptoms of sleep disorders including excessive daytime sleepiness, irregular breathing or increased movement during sleep, difficulty sleeping, and abnormality in sleep behaviors. Sleep disorders affect our overall health, safety and quality of life. The existence of long sleep latency, regular nocturnal awakenings, or prolonged periods of wakefulness during the sleep period or even numerous transient arousals are taken as evidence of **insomnia**. **Obstructive sleep apnea** is a disease characterized by frequent upper airway obstruction during sleep. **Restless leg syndrome** have uncomfortable feelings in legs (and occasionally arms or other parts of the body)

and an irresistible urge to move legs to reduce the sensations. **Narcolepsy** is a disorder marked by extreme daytime sleepiness, uncontrollable sleep attacks, and **cataplexy** (a unexpected loss of muscle tone, usually lasting up to half an hour). (Jeremy, 2004)

## 2. Effects of Sleep Disorders

Altevogt and Handson (2006) concluded that 50 to 70 million Americans chronically suffer from a sleep disorder and wakefulness, hindering daily activities and adversely affecting their longevity and health. The growing effects of sleep disorders and sleep loss represent an under-recognized public health problem and have been linked with a wide variety of health consequences including an increased risk of heart attack, hypertension, diabetes, depression, stroke and obesity. Around 20 percent of all serious car accidents injuries in the general population are related with driver sleepiness. Hundreds and billions of dollars a year are spent on direct medical costs associated with sleep disorders like hospital services, doctor's visit, prescriptions, and over-the-counter medications.

Banks and Dinges (2008) Revealed that sleep time affects especially behavioral alertness and many different aspects of waking cognitive performances. Performance on psychomotor tasks requiring vigilant attention is very sensitive to sleep deprivation in general and sleep restriction in particular. Many experiments have confirmed that sleep loss raises behavioral lapses during performance, which are assumed to reflect sleep loss. As loss of sleep continues, lapses can range in duration from 0.5 seconds to well over 10 sec, and they can develop to full blown sleep attacks (i.e., lapses from which subjects will not spontaneously arise without additional stimulation). It has been hypothesized that the lapses formed by sleep loss may originate in sleep-initiating sub cortical systems (e.g., brainstem thalamus and hypothalamus). This has been conceptualized as —wakestate instability,” which indicates to moment-to-moment shifts in the association between neurobiological systems mediating wake maintenance and those mediating sleep initiations. Behavioral alertness as measured by psychomotor attention

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tasks—or other constant attention tasks—has confirmed to be very sensitive to sleep deprivation.

### 3. Nutrients Helpful To Cure Sleep Disorder

In a recent large survey on greater than 4500 people in the association of many different nutrients to sleep were studied. The nutrients linked with obscurity to falling asleep in order of significance were lack of selenium, lack of calcium, lack of dodecanoic acid increased hexadecanoic acid and alpha carotene. Sleep deprivation was linked with more use of salt--, less carbohydrates, less butanoic acid, less dodecanoic acid, less lycopene, less vitamin D more hexanoic acid and more moisture. Non-restorative sleep was related with acid less calcium, more butanoic, less vitamin C, more cholesterol less plain water and more moisture. In this same survey increased daytime sleepiness was connected with more theobromine, more moisture, less plain water and less potassium. (Grandner et.al.2013)

The B vitamins usually are coenzymes in the energy metabolism of the body. They are needed for the synthesis and release of certain neurohormones and neurotransmitters that are involved in the regulation of the circadian cycle and sleep. B vitamins have been highly developed as a preventive for insomnia based on research that suggests deficiencies in vitamin B6 support psychological distress and ensuing sleep problems. (Baldewicz et.al. 1998). McCarty et al, (2013) reported that constant inadequacy of vitamin D may also increase the risk for obstructive sleep apnea via promotion of sillar hypertrophy, adenoton, airway muscle myopathy, and chronic rhinitis. The participation of vitamin A in the regulation of delta oscillations. It has been suggested that retinoid signaling pathways are important for adult neural function in health and disease (Sei et al 2008). In restless leg syndrome, vitamins C and E and their mixtures are used as safe and effective treatments for reducing the severity of RLS in hemodialysis patients (Sagheb et al, 2011). Entire vitamin E family plays a role in remembrance processes. Therefore, measuring the levels of vitamin E from serum is the most dependable way to decide whether they are adequately high. Limited research indicates that supplemental vitamin E may decrease symptom occurrence in restless leg syndrome (Sagheb et al, 2012)

Zinc is one of the most important mineral for human health. Its deficiency can result in sleep problems. Yehuda (2006) stated that in young children fatigue, possible learning disturbances and sleep disturbances may related deficiency of iron in early life. Kaler (2005) concluded that if there is a association between sleep disturbance and low serum ferritin in children with autism spectrum disorder, an eight-week open-label management trial on 33 children with oral iron supplementation has been done. Seventy-seven percent had restless sleep at baseline, which enhanced appreciably with iron therapy, suggesting a affiliation between iron deficiency in children and sleep disturbance. Atroshi (2005) shown that selenium is remarkably important in the modulation and maintenance of different brain activities. Selenium may have some role in regulation of sleep and in development of insomnia as lack of selenium was statistically significantly connected with difficulty falling asleep.

### 4. Omega-3 fatty acids

Polyunsaturated fatty acids (PUFA) are essential fatty acids in many mammals including human beings. Both docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) are omega-3 acids and they can obtained by consuming fish oils. There is some facts presenting that a decreased amount of ingested omega-3 fatty acids is linked with fatigue problems of attention and depression ( Lavialle et.al.,2010). There are only few evidences showing that necessary fatty acids can modulate sleep. In a small studied eight children. They were fed by total parenteral nutrition without vital lipids and seven other children who received a daily supplement of necessary lipids in their parenteral nutrition. Slow wave sleep was significantly decreased in the group of children who did not receive fatty acids as compared to those who did.( Fagioli ei.al. 1989)

Deficiencies of **magnesium** have been linked with several sleep problems, including restless leg syndrome and insomnia. Foods high in magnesium are some of the most sleep-friendly foods. Bananas are a good source of magnesium. Other nutrient-rich foods, including fruits-berries, melons and avocados. Leafy vegetables- Swiss chard and Spinach. Nuts and seeds-Almonds, Cashews, sunflower seeds and pumpkin and nut or seed butters. Beans- Tofu, Black beans and soybeans. Whole grains-Millet, brown rice, oat bran and wheat. **Potassium** is one more key mineral in the body that helps to relax nerves and muscles as well as to promote healthy digestion and circulation. Study has shown a possible genetic connection between slow-wave sleep and potassium. It founds in citrus food, especially in orange juice. **Calcium** is a mineral that plays a direct role in the fabrication of melatonin, the “sleep hormone” that helps to maintain the body’s 24-hour sleep-wake cycle. Calcium is also a natural relaxant in our body. Dairy products are rich in calcium –milk, yogurt or cheese for bringing more sleep-promoting calcium into diet. Others are- Nuts and seeds, Dark leafy greens, tofu and soymilk. ( Breus, 2013)

**Low-fat dairy products** supply significant amounts of vitamin D, protein and calcium, which support blood sugar balance and fullness between meals. Replace heavy cream in recipes and hot beverages, such as coffee, with low-fat milk and enjoy low-fat yogurt topped with fruit in place of ice cream or cheesecake for dessert. **Whole grains** have retained important nutrient and fiber substance during food processing. Consequence, they may help us to stay fuller longer, maintain digestive regularity and meet our daily fiber needs. Fiber-rich foods can support us to manage our potentially reduce sleep apnea symptoms and weight. **Plant-based oils** provide unsaturated fats that help in brain function, nutrient absorption, and heart-health. (McLaughlin, 2013)

Milk is an excellent example of calcium-rich foods. In fact, warm milk is a commonly recommended insomnia cure in many homes by increasing the production of melatonin. Melatonin is a neuro hormone that contributes to the sleep-wake cycle. It is produces at nightfall when it is dark. This antioxidant hormone helps calm down brain functioning and promotes sleep. **L-tryptophan** is a necessary amino acid

that plays various roles in brain chemistry. The amino acid is used as a precursor in the formation of niacin, a B vitamin. Niacin can support to relieve insomnia. **Complex carbohydrates** are often substituted for low carbohydrates, they are good for sleep. In fact, low-carbohydrates foods are known to encourage insomnia. In contrast, complex carbohydrates are filling. Consequently, they can relieve hunger without necessarily adding caloric load. Vitamins can improve mood disorders, relieve anxiety and promote sleep by motivating the activity of serotonin, dopamine, GABA (gamma aminobutyric acid) and melatonin. Food sources of B vitamins include beef, liver, fish, eggs, kidney, leafy vegetables, wheat flour, legume, brown rice, yeast, oatmeal, whole grains, seeds, nuts, poultry and seafood. **Tart Cherries** is an excellent source of a number of nutrients that can promote sleep. **Grape** provides the same benefits as cherries. **Almond** is the ideal nut to help us sleep. Almond is rich in B vitamins, iron, zinc, calcium, magnesium and potassium. These are nutrients that help regulate brain activity, relax the muscles and increase the secretion of sleep-inducing compounds such as melatonin. (Halson, 2011)

## 5. Conclusion

Sleep affects our daily routine, health and wellbeing, family and social relationships etc. People cannot live happy and healthy without adequate sleep. Sleep problems affects our quality of life and it affects our immune system and hormonal system as well. Because of sleep deprivation person's body systems get disturb and he get diseases like – stress, depression, hypertension, cardiovascular disease, obesity, diabetes, atherosclerosis, fertility problems in women etc. These problems make person's life worse, person suffers with compromised physical conditions, poor financial conditions, bad relationships with family and friends and inadequate social activities. So, we should take sleep as an important need and should sleep 6-8 hours daily. Do not use any of drugs (nicotine and caffeine) and medicines (regular use of tranquilizers) which can affect our sleep. To cure sleep disorders we should include vitamin A, B, C and D. Also have to add zinc, magnesium, calcium, phosphorus, fatty acids and low dairy products and complex carbohydrates in the diet. Eat healthy and nutritious food and avoid junk food. We should include exercise and yoga in our daily routine. These small practices can improve our sleep and make us healthy.

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