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Ask the DOCTOR

Natural Strategies for Managing Insomnia

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Q: I am a 45-year-old woman. Although my overall health is good, I have suffered from chronic insomnia for more than 15 years. I am concerned that lack of sleep may increase my risk of developing major illnesses. Is there a connection between chronic insomnia and the development of disease? What can I do to achieve good, restful sleep? I have heard that prescription sleep aids carry side effects—are there any other solutions for my insomnia?

A: Insomnia is a sleep disorder characterized by difficulty falling or staying asleep, or non-restorative sleep. Insomnia that occurs most nights and lasts a month or more is considered chronic insomnia.



In Western societies, chronic sleep disorders and sleep deprivation are common. The daily life cycle, or circadian rhythm, includes periods of sleep and wakefulness. This circadian (meaning “about a day”) rhythm is commonly referred to as the biological clock, and helps regulate different bodily functions. While humans are programmed for daytime activity and nighttime rest, a large proportion of the adult population suffers from difficulty falling asleep, difficulty staying asleep, or early awakening.

In industrialized societies, most people spend the majority of their time indoors, and thus have limited exposure to natural light. While electric lighting is generally sufficient to allow for normal visual perception, it may not adequately support normal neuroendocrine rhythms, such as circadian rhythms. Insomnia related to shift work has become an important health problem. For example, recent studies have found that very few night workers regularly experience restful and restorative daytime sleep.



Sleep is not a luxury, but rather an important component of health. A healthy amount of sleep is crucial for a vibrant and productive lifestyle. It is widely believed that seven to eight hours of sleep a night is optimal for good health.

With so many Americans suffering from chronic insomnia, prescriptions for pharmaceutical sleep aids are at an all-time high. Unfortunately, these drugs can lead to dependence and sometimes produce adverse side effects.

We will now examine the numerous health problems associated with insomnia, factors that contribute to sleep disorders, and strategies you can use to achieve healthy and restful sleep.

INSOMNIA: A RISK FACTOR FOR DISEASE

Although chronic sleep disorders are common today, many people are unaware of the potentially grave health effects of inadequate amounts of sleep. This may be because the medical community has only recently focused on the importance of sleep in promoting good health.

Emerging scientific evidence indicates that insufficient sleep may have deleterious effects on health. A growing number of studies have linked inadequate sleep or sleeping at odd hours with increased risk of major illnesses such as heart disease, cancer, diabetes, and obesity. Insomnia has also been linked to decreased work efficiency, increased prevalence of emotional and psychological problems, more frequent hospitalizations, and even increased mortality. One possible explanation is that chronic stress and accompanying insomnia overstimulate the sympathetic nervous system, setting the stage for disease.

Insomnia has a number of clinically significant associations. Patients with chronic insomnia have higher rates of psychological and physical illnesses. Sleep may influence how the nervous, hormonal, and immune systems function. Sleep deprivation in

healthy subjects results in numerous adverse physiological changes, including effects on lipid and glucose metabolism, endocrine function, sympathetic/parasympathetic nervous system balance, and blood pressure. Chronic insomnia has been associated with a modestly increased risk of coronary events and development of chronic conditions such as obesity, diabetes, and hypertension.

Moreover, sleep disorders may play a primary role in the pathophysiology of cardiovascular disease. Sleep restriction results in additional undesirable physiological changes that include elevation of evening cortisol level, impairment of glucose control, and increased inflammation. Scientists have recently documented an association between sleep deprivation and metabolic disturbances and impaired insulin action. Chronic insomnia may be a part of the pathophysiological connection between stress and metabolic syndrome, and may contribute to premature aging and early mortality. Conversely, sleeping seven to eight hours each night is associated with lower mortality from all causes.

Sleeping disorders related to shift work convey significant risk for the development of cardiovascular and gastrointestinal diseases. Sleep deprivation has been linked with elevated high-sensitivity C-reactive protein, a marker of inflammation that is correlated with cardiovascular disease risk. Sleep duration may be an important regulator of body weight and metabolism. An association between limited sleep (less than seven to eight hours) and increased body mass index (BMI) has been reported in large population studies. Scientists have found that adults who sleep less than seven hours a night have a significantly higher risk of obesity, perhaps because inadequate sleep may produce an imbalance of the hormones that regulate appetite.

In the United States, where a significant proportion of workers are engaged in shift work, cancer is the second leading cause of death. Scientists have proposed that melatonin, a hormone normally produced at night, may modulate the relationship between shift work and cancer. Since melatonin shows potential cancer-preventive effects against different tumors, it is possible that a low melatonin level caused by nighttime exposure to light increases the tendency toward tumor development. Exposure to light at night may be one reason for the higher rates of breast and colorectal cancers in developed countries, as it can suppress normal nocturnal production of melatonin by the pineal gland. Decreased melatonin levels may increase breast cancer risk through several mechanisms, including increasing the release of estrogen by the ovaries.

Several studies have found that insufficient, disruptive, or arrhythmic sleep can increase risk for breast and colon cancers, heart disease, and diabetes. This may occur because sleep disorders affect production of the most important hormones and proteins that play roles in these diseases.

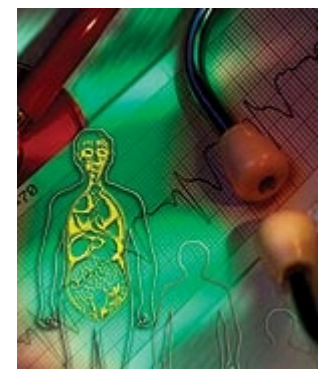
Insufficient sleep and nighttime work can affect the frequency and amount of hormonal secretions, which can lead to distortions in cortisol, melatonin, growth hormone, and thyroid stimulating hormone (TSH) rhythms. Both daytime sleep and nighttime work are often associated with perturbed endocrine function, which could explain certain health problems. Both light and melatonin have physiological and behavioral effects on the body. Melatonin can reduce core body temperature and induce sleepiness. Light at night can increase body temperature, alertness, and performance. Recent studies suggest that sleep loss exerts negative effects on cognition, performance, and health.

Chronic sleep limitation is also associated with significant increases in accidents, social disruption, and psychiatric disturbances. In addition, some scientists believe that lack of sleep could be a key factor in pathologies such as chronic fatigue syndrome, migraine, and fibromyalgia.

CAUSES OF INSOMNIA

Sleep problems are associated with multiple factors, and may be secondary symptoms of established or subclinical (defined as undetectable by normal testing) diseases. Insomnia is usually associated with various physical and psychological disorders, treatments, and environmental conditions. Certain physical illnesses can be a cause of chronic insomnia. Disorders of the heart (congestive heart failure), lungs (chronic obstructive pulmonary disease, asthma, emphysema), and digestive system (peptic ulcer, gastroesophageal reflux, heartburn) can interfere with restful sleep. Medical conditions such as allergies, arthritis, cancer, fibromyalgia, enlargement of the prostate gland, hot flashes, Alzheimer's disease, Parkinson's disease, hyperthyroidism, sleep apnea, restless leg syndrome, and leg cramps are very common and important causes of insomnia, particularly in older people.

Abnormal levels of certain hormones have been observed in people suffering from chronic insomnia. Some studies have reported high levels of the stress hormone cortisol and low levels of melatonin in patients with chronic insomnia. Moreover, normal aging is associated with altered secretion of growth hormone, a hormone associated with deep sleep. Low levels of estrogen can cause hot flashes, which may interrupt normal sleep.



Several disorders that have a psychological or psychiatric basis can also contribute to insomnia. Depression, anxiety, bipolar disorder, attention deficit hyperactivity disorder (ADHD), and schizophrenia may cause insomnia. More than 90% of depressed patients experience insomnia. Chronic stress and unhealthy lifestyle factors (lack of exercise, irregular eating habits, poor sleeping habits, excessive caffeine consumption, smoking, and drinking alcohol) may trigger insomnia. Ten to fifteen percent of chronic insomnia cases may result from substance abuse, especially of alcohol, cocaine, and sedatives. While alcohol may initially promote sleep, it has been associated with fragmented sleep and wakefulness a few hours later.

Medications such as antidepressants, drugs used to treat asthma and high blood pressure, corticosteroids, diuretics, histamine blockers, and respiratory stimulants can cause insomnia. A number of studies have reported that shift work may disrupt the body's circadian rhythm and lead to chronic insomnia. Environmental factors (noise, light, heat) and excessive computer work have also been associated with insomnia.

STRATEGIES FOR MANAGING INSOMNIA

Effective management of insomnia must be directed at the condition causing the insomnia. For example, if the reason for insomnia is hot flashes, the first step must be a blood test of hormone levels. Restoration of youthful levels of basic hormones will be a second step.



If you are a 45-year-old woman, it is a good idea to assess your hormone levels (including pregnenolone, DHEA, total estrogen, progesterone, testosterone, and TSH). Next, work with your health care provider to replace deficient hormones, and use melatonin and other supplements that can calm your body and help restore dominance of the parasympathetic nervous system at night.

Melatonin is the hormone that regulates the body's biological clock. As people age, their bodies produce less melatonin, which can lead to difficulty sleeping. Many people take supplemental melatonin at bedtime to help them fall asleep. The recommended dose of melatonin ranges from 0.3 to 6 mg, depending on individual needs.

Many herbs and nutrients may help manage insomnia, used either alone or in combination with prescription medications. S-adenosylmethionine (SAME), B vitamins, inositol, and omega-3 fatty acids can be helpful for insomnia related to mood disorders. The mineral magnesium is known to promote relaxation, and may be helpful for individuals with insomnia. The herb kava may be helpful for anxiety and insomnia, as it promotes muscle relaxation and may help encourage sleep. Chamomile tea is popular for managing mild insomnia. Essential oils of lavender and lemon balm have calming effects that may promote relaxation and sleep. Valerian, an herb frequently used for severe insomnia, appears to be as effective as some prescription medications for treating insomnia. Acting as a sedative, it makes falling asleep easier and allows the body to go into deeper sleep cycles. A dose of 400 mg of valerian taken 30 minutes before bedtime is usually effective.

The most common side effect from kava use is mild gastrointestinal disturbances in some people. Kava has also been associated with skin rashes and enlargement of the pupils of the eyes. Kava should not be combined with drugs or substances that act on the central nervous system, such as alcohol or benzodiazepines. Individuals with liver problems should not use kava. Use of kava should generally be limited to three months. Chamomile should be avoided by people who use anticoagulants. Chamomile may cause delayed gastric absorption, which could alter the absorption of concomitantly administered drugs. Chamomile has been associated with rare allergic reactions that can trigger bronchial constriction or skin reactions. Chamomile should be avoided by people with allergies to ragweed, aster, chrysanthemums, or mugwort pollen. Essential oils of lavender and lemon balm are not for internal use, except under medical supervision. Topical use of these essential oils has infrequently been associated with allergic contact dermatitis. Valerian has been associated with the occasional side effects of fatigue and abdominal pain. Always consult your health care practitioner before beginning a program of nutritional or herbal supplementation.

Here are a few suggestions to help improve your sleep:

- Avoid stimulating drugs, caffeine, nicotine, and alcohol late in the day. If you use medications that may be stimulating, take them long before bedtime.
- Try not to take naps during the day.

- Avoid eating a large meal in the evening.
- Exercise regularly, but try not to exercise close to bedtime.
- Reduce stress levels by listening to relaxation tapes, taking warm baths, and meditating.

Achieving restful sleep is critically important to maintaining health and protecting yourself against disease. A successful program for achieving adequate amounts of healthy, restful sleep involves treating any underlying health conditions, optimizing hormone balance, incorporating healthy lifestyle habits, and utilizing herbs and nutrients that promote relaxation.

Editor's Note: Those who fail to achieve restful sleep using natural approaches may consider prescription sleep medications. To reduce the risk of tolerance, speak to your physician about taking 5-10 mg of Ambien® one night, 1-2 mg of Klonopin® the second night, and 22-44 mg of Tranxene® the third night, and repeating this cycle to avoid taking the same drug two nights in a row.

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