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Sleep Disorders

What's the Bottom Line?

What do we know about the usefulness of complementary approaches for sleep disorders?

- **Relaxation techniques** can be helpful for insomnia.
- **Melatonin** supplements may be helpful for sleep problems caused by shift work or jet lag. Melatonin may also be helpful for people with insomnia, but its effect is small.
- The evidence for other complementary approaches is either inconsistent or too limited to draw conclusions about whether they are helpful for sleep disorders.

What do we know about the safety of complementary approaches for sleep disorders?

- **Relaxation techniques** are generally considered safe.
- **Melatonin** appears to be relatively safe for short-term use, but its long-term safety has not been established.
- There are serious safety concerns about **kava** products (which have been linked to severe liver damage) and **L-tryptophan supplements** (which may be associated with a potentially serious disorder called eosinophilia-myalgia syndrome).
- If you use a complementary approach for a sleep problem, tell your health care providers. They can do a better job caring for you if they know what you're using.

What Are Sleep Disorders and How Important Are They?

There are more than 80 different sleep disorders. This fact sheet focuses on insomnia—difficulty falling asleep or difficulty staying asleep. Insomnia is one of the most common sleep disorders.

Chronic, long-term sleep disorders affect millions of Americans each year. These disorders and the sleep deprivation they cause can interfere with work, driving, social activities, and overall quality of life, and can have serious health implications. Sleep disorders account for an estimated \$16 billion in medical costs each year, plus indirect costs due to missed days of work, decreased productivity, and other factors.

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To learn more, visit the [sleep disorders page on the National Heart, Lung, and Blood Institute \(NHLBI\) Web site](#).

Is It a Sleep Disorder or Not Enough Sleep?

Some people who feel tired during the day have a true sleep disorder, but for others, the real problem is not allowing enough time for sleep. Adults need at least 7 to 8 hours of sleep each night to be well rested, but the average adult sleeps for less than 7 hours a night.

Sleep is a basic human need, like eating, drinking, and breathing, and is vital to good health and well-being. Shortchanging yourself on sleep slows your thinking and reaction time, makes you irritable, and increases your risk of injury. It may even decrease your resistance to infections, increase your risk of obesity, and increase your risk of heart disease. To learn more about healthy sleep and what happens when you don't get enough sleep, visit NHLBI's [Your Guide to Healthy Sleep](#) and [What Are Sleep Deprivation and Deficiency?](#)

What the Science Says About Complementary Health Approaches and Insomnia

Research has produced promising results for some complementary health approaches for insomnia, such as relaxation techniques. However, evidence of effectiveness is still limited for most products and practices, and safety concerns have been raised about a few.

Mind and Body Practices

- There is evidence that **relaxation techniques** can be effective in treating chronic insomnia.
 - **Progressive relaxation** may help people with insomnia and nighttime anxiety.
 - **Music-assisted relaxation** may be moderately beneficial in improving sleep quality in people with sleep problems, but the number of studies has been small.
 - Various forms of relaxation are sometimes combined with components of cognitive-behavioral therapy (such as sleep restriction and stimulus control), with good results.
 - Using relaxation techniques before bedtime can be part of a strategy to improve sleep habits that also includes other steps, such as maintaining a consistent sleep schedule; avoiding caffeine, alcohol, heavy meals, and strenuous exercise too close to bedtime; and sleeping in a quiet, cool, dark room.
 - Relaxation techniques are generally safe. However, rare side effects have been reported in people with serious physical or mental health conditions. If you have a serious underlying health problem, it would be a good idea to consult your health care provider before using relaxation techniques.
- In a preliminary study, **mindfulness-based stress reduction**, a type of meditation, was as effective as a prescription drug in a small group of people with insomnia.
 - Several other studies have also reported that mindfulness-based stress reduction improved sleep, but the people who participated in these studies had other health problems, such as cancer.

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- Preliminary studies in postmenopausal women and women with osteoarthritis suggest that **yoga** may be helpful for insomnia.
- Some practitioners who treat insomnia have reported that **hypnotherapy** enhanced the effectiveness of cognitive-behavioral therapy and relaxation techniques in their patients, but very little rigorous research has been conducted on the use of hypnotherapy for insomnia.
- A small 2012 study on **massage therapy** showed promising results for insomnia in postmenopausal women. However, conclusions cannot be reached on the basis of a single study.
- Most of the studies that have evaluated **acupuncture** for insomnia have been of poor scientific quality. The current evidence is not rigorous enough to show whether acupuncture is helpful for insomnia.

For more information, visit the [NCCIH Web page on mind and body practices](#).

Dietary Supplements

Melatonin and Related Supplements

- **Melatonin** may help with jet lag and sleep problems related to shift work.
- A 2013 evaluation of the results of 19 studies concluded that melatonin may help people with insomnia fall asleep faster, sleep longer, and sleep better, but the effect of melatonin is small compared to that of other treatments for insomnia.
 - Studies of melatonin in children with sleep problems suggest that it may be helpful, both in generally healthy children and in those with conditions such as autism or attention-deficit hyperactivity disorder. However, both the number of studies and the number of children who participated in the studies are small, and all of the studies tested melatonin only for short periods of time.
 - Melatonin supplements appear to be relatively safe for short-term use, although the use of melatonin was linked to bad moods in elderly people (most of whom had dementia) in one study. The long-term safety of melatonin supplements has not been established.
- Dietary supplements containing substances that can be changed into melatonin in the body—**L-tryptophan** and **5-hydroxytryptophan (5-HTP)**—have been researched as sleep aids.
 - Studies of L-tryptophan supplements as an insomnia treatment have had inconsistent results, and the effects of 5-HTP supplements on insomnia have not been established.
 - The use of L-tryptophan supplements may be linked to eosinophilia-myalgia syndrome (EMS), a complex, potentially fatal disorder with multiple symptoms including severe muscle pain. It is uncertain whether the risk of EMS associated with L-tryptophan supplements is due to impurities in L-tryptophan preparations or to L-tryptophan itself.

Herbs

- Although **chamomile** has traditionally been used for insomnia, often in the form of a tea, there is no conclusive evidence from clinical trials showing whether it is helpful. Some people, especially those who are allergic to ragweed or related plants, may have allergic reactions to chamomile.

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- Although **kava** is said to have sedative properties, very little research has been conducted on whether this herb is helpful for insomnia. More importantly, [kava supplements have been linked to a risk of severe liver damage.](#)
- Clinical trials of **valerian** (another herb said to have sedative properties) have had inconsistent results, and its value for insomnia has not been demonstrated. Although few people have reported negative side effects from valerian, it is uncertain whether this herb is safe for long-term use.
- Some “sleep formula” dietary supplements combine valerian with other herbs such as **hops, lemon balm, passionflower,** and **kava** or other ingredients such as **melatonin** and **5-HTP**. There is little evidence on these preparations from studies in people.

For more information, visit the [NCCIH Web page on dietary supplements](#).

Other Complementary Health Approaches

- **Aromatherapy** is the [therapeutic](#) use of essential oils from plants. It is uncertain whether aromatherapy is helpful for treating insomnia because little rigorous research has been done on this topic.
- A 2010 systematic review concluded that current evidence does not demonstrate significant effects of **homeopathic medicines** for insomnia.

NCCIH Research on Sleep Disorders

NCCIH funds research on complementary health approaches for sleep disorders.

Recent projects include studies on:

- How mindfulness meditation training may affect the amount and quality of sleep
- The effect of blue-white light on sleep disorders in patients with Alzheimer’s disease
- Whether acupuncture can help insomnia
- How two forms of mindfulness-based therapy compare with behavior therapy for treating insomnia.

Could You Have Sleep Apnea?

Do you snore loudly? Does your bed partner say that you make gasping or snorting sounds during the night? Do you fight off sleepiness during the day?

If you have any of these symptoms, talk to your health care provider. You might have sleep apnea—a condition in which sleep is disrupted because of pauses in breathing. For more information, see [What Is Sleep Apnea?](#) on the NHLBI Web site.

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If You Are Considering Complementary Health Approaches for Sleep Problems

- Talk to your health care providers. Tell them about the complementary or integrative health approach you are considering and ask any questions you may have. Because trouble sleeping can be an indication of a more serious condition, and because some prescription and over-the-counter drugs can contribute to sleep problems, it is important to discuss your sleep-related symptoms with your health care providers before trying any complementary health product or practice.
- Be cautious about using any sleep product—prescription medications, over-the-counter medications, dietary supplements, or homeopathic remedies. Find out about potential side effects and any risks from long-term use or combining products.
- Keep in mind that “natural” does not always mean safe. For example, kava products can cause serious harm to the liver. Also, a manufacturer’s use of the term “standardized” (or “verified” or “certified”) does not necessarily guarantee product quality or consistency. Natural products can cause health problems if not used correctly. The health care providers you see about your sleep problems can advise you.
- If you are pregnant, nursing a child, or considering giving a child a dietary supplement or other natural health product, it is especially important to consult your (or your child’s) health care provider.
- If you are considering a practitioner-provided complementary health practice, check with your insurer to see if the services will be covered, and ask a trusted source (such as your health care provider or a nearby hospital or medical school) to recommend a practitioner.
- Tell all your health care providers about any complementary or integrative health approaches you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care.

To Find Out More

NCCIH Clearinghouse

The NCCIH Clearinghouse provides information on NCCIH and complementary and integrative health approaches, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

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National Heart, Lung, and Blood Institute (NHLBI)

NHLBI provides global leadership for a research, training, and education program to promote the prevention and treatment of heart, lung, and blood diseases.

Web site: www.nhlbi.nih.gov

National Center on Sleep Disorders Research: www.nhlbi.nih.gov/about/ncsdr/

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MedlinePlus

To provide resources that help answer health questions, MedlinePlus (a service of the National Library of Medicine) brings together authoritative information from the National Institutes of Health as well as other Government agencies and health-related organizations.

Web site: www.nlm.nih.gov/medlineplus/

Information on sleep disorders: www.nlm.nih.gov/medlineplus/sleepdisorders.html

PubMed®

A service of the National Library of Medicine, PubMed contains publication information and (in most cases) brief summaries of articles from scientific and medical journals.

Web site: www.ncbi.nlm.nih.gov/pubmed

Key References

- Allen JA, Peterson A, Sufit R, et al. Post-epidemic eosinophilia-myalgia syndrome associated with L-tryptophan. *Arthritis and Rheumatism*. 2011;63(11):3633-3639.
- Cheuk DKL, Yeung WF, Chung KF, et al. Acupuncture for insomnia. *Cochrane Database of Systematic Reviews*. 2012;(9):CD005472. Accessed at <http://www.cochranelibrary.com/> on January 20, 2014.
- Cooper KL, Relton C. Homeopathy for insomnia: a systematic review of research evidence. *Sleep Medicine Reviews*. 2010;14(5):329-337.
- de Niet G, Tiemens B, Lendemeijer B, et al. Music-assisted relaxation to improve sleep quality: meta-analysis. *Journal of Advanced Nursing*. 2009;65(7):1356-1364.
- Ernst E, Lee MS, Choi T-Y. Acupuncture for insomnia? An overview of systematic reviews. *European Journal of General Practice*. 2011;17(2):116-123.
- Ferracioli-Oda E, Qawasmi A, Bloch MH. Meta-analysis: melatonin for the treatment of primary sleep disorders. *PLoS One*. 2013;8(5):e63773.
- Gooneratne NS. Complementary and alternative medicine for sleep disturbances in older adults. *Clinics in Geriatric Medicine*. 2008;24(1):121-138.
- Gross CR, Kreitzer MJ, Reilly-Spong M, et al. Mindfulness-based stress reduction versus pharmacotherapy for chronic primary insomnia: a randomized controlled clinical trial. *Explore*. 2011;7(2):76-87.
- Kierlin L. Sleeping without a pill: nonpharmacologic treatments for insomnia. *Journal of Psychiatric Practice*. 2008;14(6):403-407.
- National Cancer Institute. Aromatherapy and Essential Oils. National Cancer Institute Web site. Accessed at <http://www.cancer.gov/cancertopics/pdq/cam/aromatherapy/healthprofessional/AllPages> on January 20, 2014.
- Ng B-Y, Lee T-S. Hypnotherapy for sleep disorders. *Annals of the Academy of Medicine, Singapore*. 2008;37(8):683-688.
- Oliveira DS, Hachul H, Goto V, et al. Effect of therapeutic massage on insomnia and climacteric symptoms in postmenopausal women. *Climacteric*. 2012;15(1):21-29.
- Pearson NJ, Johnson LL, Nahin RL. Insomnia, trouble sleeping, and complementary and alternative medicine: analysis of the 2002 National Health Interview Survey Data. *Archives of Internal Medicine*. 2006;166(16):1775-1782.
- Riemersma-van der Lek RF, Swaab DF, Twisk J, et al. Effect of bright light and melatonin on cognitive and noncognitive function in elderly residents of group care facilities: a randomized controlled trial. *JAMA*. 2008;299(22):2642-2655.
- Sarris J, Byrne GJ. A systematic review of insomnia and complementary medicine. *Sleep Medicine Reviews*. 2011;15(2):99-106.
- Siebert AT, Manber R. Insomnia and its effective non-pharmacologic treatment. *Medical Clinics of North America*. 2010;94(3):581-591.

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Taibi DM, Landis CA, Petry H, et al. A systematic review of valerian as a sleep aid: safe but not effective. *Sleep Medicine Reviews*. 2007;11(3):209-230.

Taibi DM, Vitiello MV. A pilot study of gentle yoga for sleep disturbance in women with osteoarthritis. *Sleep Medicine*. 2011;12(5):512-517.

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