

# get the facts

## Sleep Disorders and CAM: At a Glance

People who have trouble sleeping may try dietary supplements, relaxation therapies, or other forms of complementary and alternative medicine (CAM) in an effort to fall asleep faster, stay asleep longer, and improve the overall quality of their sleep. This fact sheet provides basic information on sleep disorders and “what the science says” about the effectiveness of CAM practices people use as sleep aids. If you are considering a CAM therapy for sleep problems, this information can help you talk with your health care provider about it.

### About 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 lost productivity and other factors.

There are more than 80 defined sleep disorders. Insomnia—difficulty falling asleep, difficulty staying asleep, and/or poor sleep quality—is one of the most common sleep disorders. Insomnia tends to increase with age, and is often associated with an underlying medical or psychiatric condition. Other sleep disorders include sleep apnea (breathing interruptions during sleep), restless leg syndrome (a tingly or prickly sensation in the legs), and narcolepsy (daytime “sleep attacks”). This fact sheet focuses on insomnia.

Lifestyle changes—for example, establishing a regular sleep schedule, relaxing before bedtime, exercising regularly, and avoiding alcohol, caffeine, and nicotine—can sometimes improve sleep quality. (A common

misconception is that drinking alcohol will aid sleep; although it can bring on a light sleep, alcohol actually robs people of the deeper stages of sleep.) Many prescription medications and over-the-counter sleep aids are widely advertised and used for insomnia; most have side effects and are intended for short-term use. Evidence suggests that cognitive-

To learn more about healthy sleep, visit the National Heart, Lung, and Blood Institute’s *Your Guide to Healthy Sleep* at: [www.nhlbi.nih.gov/health/public/sleep/healthy\\_sleep.pdf](http://www.nhlbi.nih.gov/health/public/sleep/healthy_sleep.pdf).

U.S. DEPARTMENT OF HEALTH  
AND HUMAN SERVICES

National Institutes of Health

National Center for Complementary  
and Alternative Medicine



NACAM

behavioral (nondrug) therapies for insomnia may have long-term benefits. People with insomnia may also try dietary supplements and other CAM therapies.

## **CAM Use for Insomnia**

In 2002 and 2007, the National Health Interview Survey (NHIS) asked participants about CAM use. In 2002, 2.2 percent of respondents who used some form of CAM in the past 12 months said they used it for insomnia or trouble sleeping; in 2007, that figure was 1.4 percent.

An analysis of data from the 2002 NHIS found that 17.4 percent of all participants said they regularly had insomnia or trouble sleeping in the past 12 months; most who reported insomnia also reported other medical/psychiatric conditions, such as anxiety or depression, chronic heart failure, diabetes, hypertension, and obesity. Among participants with insomnia, 4.5 percent (which translates to a total of 1.6 million U.S. adults) used some form of CAM to treat their condition—primarily biological/herbal therapies (64.8 percent) or mind-body/relaxation therapies (39.1 percent). Most found these therapies helpful.

Among the CAM approaches that people use for insomnia are

- Herbs, including aromatherapy, chamomile tea, and herbal supplements such as valerian and various “sleep formula” products
- Melatonin and related dietary supplements
- Other CAM modalities, such as acupuncture, music therapy, and relaxation techniques.

## **What the Science Says About CAM and Insomnia**

Research on CAM and insomnia has produced promising results for some CAM therapies. However, evidence of effectiveness is still limited for most therapies, and additional research is needed. This section summarizes what is known about some of the CAM approaches that people use for insomnia.

### ***Herbs***

- **Aromatherapy** using essential oils from herbs such as lavender or chamomile is a popular sleep aid; preliminary research suggests some sleep-inducing effects, but more studies are needed.
- The herb **chamomile** is commonly used as a bedtime tea, but scientific evidence of its effectiveness for insomnia is lacking.
- The herb **kava** has been used for insomnia, but there is no evidence of its efficacy. The U.S. Food and Drug Administration has issued a warning that kava supplements have been linked to a risk of severe liver damage.
- The herbal supplement **valerian** is one of the most popular CAM therapies for insomnia. Several studies suggest that valerian (for up to 4-to-6 weeks) can improve the quality of sleep and slightly reduce the time it takes to fall asleep. However, not all of the evidence is

positive. One systematic review of the research concluded that although valerian is commonly used as a sleep aid, the scientific evidence does not support its efficacy for insomnia. Researchers have concluded that valerian appears to be safe at recommended doses for short-term use. Some “sleep formula” products combine valerian with other herbs such as **hops**, **lavender**, **lemon balm**, and **skullcap**. Although many of these other herbs have sedative properties, there is no reliable evidence that they improve insomnia or that combination products are more effective than valerian alone.

### ***Melatonin and Related Supplements***

- Like valerian, **melatonin** supplements (melatonin is a naturally occurring hormone associated with sleep) are widely used and researched for insomnia. Although more research is still needed, studies suggest that melatonin can help elderly people with insomnia fall asleep faster, and may also be beneficial for other people with insomnia; however, effects are generally small, with larger effects observed in patients whose sleep problems are caused by a circadian rhythm abnormality (disruption of the body’s internal “clock”). Studies indicate that melatonin also appears to be safe at recommended doses for short-term use.
- Dietary supplements containing melatonin “precursors”—**L-tryptophan** and **5-HTP**—are also used as sleep aids. (The amino acid L-tryptophan is converted to 5-HTP, which is converted to serotonin and then melatonin.) However, these supplements have not been proven effective in treating insomnia, and there are concerns that they may be linked to eosinophilia-myalgia syndrome (EMS), a complex and debilitating systemic condition with multiple symptoms including severe muscle pain.

### ***Other CAM Approaches***

- Traditional Chinese medicine commonly uses **acupuncture** to treat insomnia. A review of available studies found some evidence of benefits, but many studies had design flaws that make it difficult to draw firm conclusions.
- There is scientific evidence that **music therapy** can have sleep benefits for older adults and children.
- Studies suggest that **relaxation** techniques may help people with insomnia, although the effects appear to be short-lived. Cognitive forms of relaxation (such as **meditation**) have had slightly better results than somatic forms (such as progressive muscle relaxation). Preliminary studies suggest that **yoga** may also improve sleep quality. In addition, when these forms of relaxation are combined with other components of cognitive-behavioral therapy (e.g., sleep restriction and stimulus control), lasting improvements in sleep have been observed. Again, additional research is needed in these areas.

## **NCCAM Research on Sleep Disorders**

The National Center for Complementary and Alternative Medicine (NCCAM) funds clinical trials that look at CAM for sleep disorders. Recent projects include studies of:

- High-intensity light therapy to help Alzheimer's disease patients sleep
- Hypnosis to relieve sleep impairment in people with posttraumatic stress disorder
- Melatonin supplements as a sleep aid for people with hypertension
- Mindfulness-based stress reduction to improve sleep quality
- Valerian for improving sleep in healthy, older adults and in patients with Parkinson's disease
- Yoga as a treatment for insomnia.

In addition to clinical trials, NCCAM also supports basic science research aimed at understanding the underlying biological mechanisms of CAM therapies, including those used to treat sleep disorders.

## **If You Are Considering CAM for Sleep Problems**

- Talk to your health care providers. Tell them about the therapy you are considering and ask any questions you may have. They may know about the therapy and be able to advise you on its safety, use, and likely effectiveness in relieving your sleep problems. Because trouble sleeping can be an indication of a more serious condition, it is especially important to discuss any sleep-related symptoms (such as snoring or daytime fatigue) with your health care providers before trying a CAM approach.
- Be cautious about using any sleep product—prescription medications, over-the-counter drugs, or CAM dietary supplements. Find out about potential side effects and the effects of long-term use and use of more than one product at a time.
- If you are considering herbal or other dietary supplements, keep in mind that “natural” does not always mean safe. For example, the herbs comfrey and kava 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. Herbal or other dietary supplements can act in the same way as drugs. They can cause medical problems if not used correctly, and some may interact with medications you are already taking. The health care providers you see about your sleep problems can advise you. It is especially important to consult your health care provider if you are pregnant or nursing a child, or if you are considering giving a child a dietary supplement. For more information, see the NCCAM fact sheet *Using Dietary Supplements Wisely* at [nccam.nih.gov/health/supplements/wiseuse.htm](http://nccam.nih.gov/health/supplements/wiseuse.htm).
- If you are considering a practitioner-provided CAM therapy such as acupuncture, check with your insurer to see if the services will be covered, and ask a trusted source (such as your doctor or a nearby hospital or medical school) to recommend a practitioner.
- Tell all your health care providers about any complementary and alternative practices you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care. For tips about talking with your health care providers about CAM, see NCCAM's Time to Talk campaign at [nccam.nih.gov/timetotalk/](http://nccam.nih.gov/timetotalk/).

## Selected References

- Barnes PM, Bloom B, Nahin R. Complementary and alternative medicine use among adults and children: United States, 2007. *CDC National Health Statistics Report* #12. 2008.
- Bent S, Padula A, Moore D, et al. Valerian for sleep: a systematic review and meta-analysis. *American Journal of Medicine*. 2006;119(12):1005-1012.
- Bliwise DL, Ansari FP. Insomnia associated with valerian and melatonin usage in the 2002 National Health Interview Survey. *Sleep*. 2007;30(7):881-884.
- Brzezinski A, Vangel MG, Wurtman RJ, et al. Effects of exogenous melatonin on sleep: a meta-analysis. *Sleep Medicine Reviews*. 2005;9(1):41-50.
- Buscemi N, Vandermeer B, Hooton N, et al. The efficacy and safety of exogenous melatonin for primary sleep disorders. A meta-analysis. *Journal of General Internal Medicine*. 2005;20(12):1151-1158.
- Buscemi N, Vandermeer B, Pandya R, et al. *Melatonin for Treatment of Sleep Disorders*. Evidence Report/Technology Assessment no. 108. Rockville, MD: Agency for Healthcare Research and Quality; 2004. AHRQ Publication No. 05-E002-2.
- Cheuk DK, Yeung WF, Chung KF, et al. Acupuncture for insomnia. *Cochrane Database of Systematic Reviews* (Online). 2007;(3):CD005472.
- Information paper on L-tryptophan and 5-hydroxy-L-tryptophan. U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition Web site. Accessed at <http://www.cfsan.fda.gov/~dms/ds-trypt1.html> on August 25, 2008.
- Kierlin L. Sleeping without a pill: nonpharmacologic treatments for insomnia. *Journal of Psychiatric Practice*. 2008;14(6):403-407.
- Melatonin. Natural Standard Database Web site. Accessed at <http://www.naturalstandard.com> on August 19, 2008.
- Morin AK, Jarvis CI, Lynch AM. Therapeutic options for sleep-maintenance and sleep-onset insomnia. *Pharmacotherapy*. 2007;27(1):89-110.
- Morin CM, Bootzin RR, Buysse DJ, et al. Psychological and behavioral treatment of insomnia: update of the recent evidence (1998-2004). *Sleep*. 2006;29(11):1398-1414.
- National Institute of Neurological Disorders and Stroke. *Brain Basics: Understanding Sleep*. Accessed at [http://www.ninds.nih.gov/disorders/brain\\_basics/understanding\\_sleep.htm](http://www.ninds.nih.gov/disorders/brain_basics/understanding_sleep.htm) on August 19, 2008.
- National Institutes of Health. *State of the Science Conference Statement on Manifestations and Management of Chronic Insomnia in Adults*. NIH Consensus and State-of-the-Science Statements. 2005;22(2):1-30.
- Natural Medicines in Clinical Management of Insomnia. Natural Medicines Comprehensive Database: Clinical Management Series. Accessed at <http://www.naturaldatabase.com> on August 12, 2008.
- Pearson NJ, Johnson LL, Nahin RL. Insomnia, trouble sleeping, and complementary and alternative medicine. *Archives of Internal Medicine*. 2006;166(16):1775-1782.
- Sleep disorders. Natural Standard Database Web site. Accessed at <http://www.naturalstandard.com> on August 19, 2008.
- 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.
- Valerian. Natural Standard Database Web site. Accessed at <http://www.naturalstandard.com> on August 19, 2008.
- Valerian. Office of Dietary Supplements Web site. Accessed at <http://ods.od.nih.gov/factsheets/valerian.asp> on November 3, 2008.

## For More Information

Visit the NCCAM Web site ([nccam.nih.gov](http://nccam.nih.gov)) for more information about the CAM therapies discussed in this fact sheet (including clinical trials), as well as important tips for being an informed consumer of CAM services and products.

## **NCCAM Clearinghouse**

The NCCAM Clearinghouse provides information on CAM and NCCAM, 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.

Toll-free in the U.S.: 1-888-644-6226

TTY (for deaf and hard-of-hearing callers): 1-866-464-3615

Web site: [nccam.nih.gov](http://nccam.nih.gov)

E-mail: [info@nccam.nih.gov](mailto:info@nccam.nih.gov)

## **PubMed®**

A service of the National Library of Medicine (NLM), PubMed® contains publication information and (in most cases) brief summaries of articles from scientific and medical journals. CAM on PubMed®, developed jointly by NCCAM and NLM, is a subset of the PubMed system and focuses on the topic of CAM.

Web site: [www.ncbi.nlm.nih.gov/sites/entrez](http://www.ncbi.nlm.nih.gov/sites/entrez)

CAM on PubMed®: [nccam.nih.gov/camonpubmed/](http://nccam.nih.gov/camonpubmed/)

## **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: <http://www.nhlbi.nih.gov/>

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

## **NIH National Library of Medicine's MedlinePlus**

Sleep disorders listing: [www.nlm.nih.gov/medlineplus/sleepdisorders.html](http://www.nlm.nih.gov/medlineplus/sleepdisorders.html)

## **Acknowledgments**

NCCAM thanks the following people for their technical expertise and review of this publication: Nalaka S. Gooneratne, M.D., Geriatric Sleep Research Program, University of Pennsylvania Medical School; Daniel S. Lewin, Ph.D., and Michael Twery, Ph.D., National Center on Sleep Disorders Research, National Heart, Lung, and Blood Institute; David P. White, M.D., Sleep Disorders Program, Brigham and Women's Hospital, Boston; and Barbara C. Sorkin, Ph.D., NCCAM.

*This publication is not copyrighted and is in the public domain.*

*Duplication is encouraged.*

NCCAM has provided this material for your information. It is not intended to substitute for the medical expertise and advice of your primary health care provider. We encourage you to discuss any decisions about treatment or care with your health care provider. The mention of any product, service, or therapy is not an endorsement by NCCAM.

National Institutes of Health



U.S. Department of Health and Human Services