

Patient information: Insomnia treatments (Beyond the Basics)

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INSOMNIA OVERVIEW — Insomnia is defined as difficulty falling asleep, difficulty staying asleep, or unrefreshing sleep. In general, people with insomnia sleep less or sleep poorly despite having an adequate chance to sleep. The poor sleep causes difficulty functioning during the daytime. Insomnia is not defined by the number of hours slept because the amount of sleep needed varies from one person to another.

In many cases, insomnia occurs when there is another problem, such as stress, pain, or a medical condition. In these cases, treatment of the underlying problem may help to improve sleep. In other cases, either the cause of insomnia is not clear or the insomnia does not get better when the co-existing problem is treated; therefore, the insomnia itself needs to be specifically addressed.

The following is a discussion of treatments for insomnia. The diagnosis and symptoms of insomnia are discussed separately. (See "[Patient information: Insomnia \(Beyond the Basics\)](#)".) More detailed information about insomnia is available by subscription. (See "[Treatment of insomnia](#)".)

BEHAVIORAL THERAPY FOR INSOMNIA — Behavioral therapy is often recommended as the initial treatment for insomnia. Behavioral changes may be recommended alone initially, or medication may be recommended along with behavioral changes. (See '[Medicines for insomnia](#)' below.) Behavioral therapy can include sleep hygiene education, relaxation, biofeedback, stimulus control, sleep restriction, cognitive therapy, cognitive behavioral therapy, phototherapy, and/or chronotherapy.

Sleep hygiene education — Sleep hygiene teaches good sleeping habits ([table 1](#)). This includes:

- Sleep only as much as necessary to feel rested and then get out of bed.
- Maintain a regular sleep schedule (the same bedtime and wake time every day).
- Do not force sleep. (See '[Stimulus control](#)' below.)
- Avoid caffeinated beverages after lunch.
- Avoid alcohol near bedtime.
- Do not smoke (particularly during the evening).
- Do not go to bed hungry.
- Adjust the bedroom environment (light, noise, temperature) so that you are comfortable before you lie down.
- Deal with concerns or worries before bedtime. Make a list of things to work on for the next day so anxiety is reduced at night.
- Exercise regularly, preferably four or more hours before bedtime.

Relaxation — Relaxation therapy involves progressively relaxing your muscles from your head down to your feet. Here is a sample of a relaxation program: Beginning with the muscles in your face, squeeze (contract) your muscles gently for one to two seconds and then relax. Repeat several times. Use the same technique for other muscle groups, usually in the following

sequence: jaw and neck, shoulders, upper arms, lower arms, fingers, chest, abdomen, buttocks, thighs, calves, and feet. Repeat this cycle for 45 minutes, if necessary. This relaxation program can promote restfulness and sleep. Relaxation therapy is sometimes combined with biofeedback.

Biofeedback — Biofeedback uses sensors placed on your skin to track muscle tension or brain rhythms. You can see a display of your tension level or activity, allowing you to gauge your level of tension and develop strategies to reduce this tension. As an example, you may slow your breathing, progressively relax muscles, or practice deep breathing to reduce tension.

Stimulus control — Stimulus control therapy is based on the idea that some people with insomnia have learned to associate the bedroom with staying awake rather than sleeping.

- You should spend no more than 20 minutes lying in bed trying to fall asleep.
- If you cannot fall asleep within 20 minutes, get up, go to another room and read or find another relaxing activity until you feel sleepy again. Activities such as eating, balancing your checkbook, doing housework, watching TV, or studying for a test, which "reward" you for staying awake, should be avoided.
- When you start to feel sleepy, you can return to bed. If you cannot fall asleep in another 20 minutes, repeat the process.
- Set an alarm clock and get up at the same time every day, including weekends.
- Do not take a nap during the day.

You may not sleep much on the first night. However, sleep is more likely on succeeding nights because sleepiness is increased and naps are not allowed.

Sleep restriction — Some people with insomnia have long awakenings during the night and some try to deal with their poor sleep by staying in bed longer in the morning to "make up" some of their lost sleep. This additional sleep later in the morning may make it more difficult to fall asleep that night, resulting in the need to stay in bed even longer the following morning. Sleep restriction consolidates sleep and breaks this cycle.

- The first step in sleep restriction therapy is to estimate the average number of hours per night that you sleep. Decrease the total time allowed in bed per night to that average sleep time, as long as it is not less than four hours.
- A rigid bedtime and awakening time are recommended and naps are not permitted. This causes partial sleep deprivation, which increases your ability to sleep the next night.
- Once sleep has improved, you may slowly increase your time in bed to find your needed hours of sleep.

During the first few days to weeks, you may feel sleepy during the day and may have difficulty being alert. You can deal with this by increasing activity levels when sleepy, avoiding sedentary activities, and discussing the sleep restriction therapy with your therapist, who may need to fine tune sleep times. It is best to try sleep restriction therapy with a therapist because reducing sleep too much can produce sleepiness that can result in accidents.

Cognitive therapy — People who are awake at night commonly become concerned that they will perform poorly the next day if they do not sleep enough. Such thoughts can initiate a cycle where being awake at night increases your anxiety, which then makes it more difficult to sleep.

You may begin to blame all negative events in your life on poor sleep.

During cognitive therapy, you work with a therapist to deal with your anxiety and negative thinking. The therapist will help you to realize that poor sleep alone cannot be the cause of all of your problems.

Cognitive behavioral therapy — Cognitive behavioral therapy is a training course that combines several of the previously described approaches over an 8 to 10 week period.

A sample 8-session program may include an introductory education session, followed by a session or two that focus on stimulus control and sleep restriction. These may be followed by sessions that focus on cognitive therapy and sleep hygiene. Finally, there may be sessions that review and integrate the previous work and address future problems, such as stress and relapse.

Phototherapy — Phototherapy, also called light therapy, is an effective therapy for people whose insomnia is due to a problem called delayed sleep phase syndrome. People with this disorder have a problem with their body's "sleep clock" such that they have a difficult time falling asleep until much later in the evening or night than they wish (and therefore wake up later than they wish in the next morning).

Phototherapy involves sitting in front of a specially designed light box for 30 to 40 minutes after waking up. In less severe cases, waking up consistently at a given time in the morning, followed by physical activity with exposure to bright light (eg, a walk outside), may be sufficient. Alternately, you may sit in an area with bright sunshine (eg, near a window or on a porch). The exposure to bright light at specific times helps to realign the body's sleep clock.

Chronotherapy — Chronotherapy is also used in people with circadian rhythm sleep disorders. It involves intentionally delaying going to sleep by two to three hours on successive days until you are able to fall asleep at the desired bedtime. This can be difficult to do at home and is sometimes done in a hospital setting. After this, you must strictly enforce the newly-aligned sleep-wake schedule.

MEDICINES FOR INSOMNIA — Medicines to aid sleep may be recommended if insomnia interferes with your ability to function during the daytime. Discuss sleep medicines with a doctor or nurse. Consider the potential benefits (eg, improved daytime symptoms and function) versus the risks (eg, side effects and addiction) and burdens (eg, cost and effort).

If a sleeping medicine is not effective within the first few weeks, your doctor or nurse may recommend trying a different medicine or may refer you to a sleep disorder center.

Sedative-hypnotic medicines — Sedative-hypnotic medicines work in the brain to cause you to feel sleepy. The primary differences between the various sedative-hypnotic medicines are how quickly they begin to work and how long the effect lasts. Most clinicians select a medicine based upon your type of insomnia (ie, difficulty falling asleep or staying asleep).

Benzodiazepines — Benzodiazepines are an older type of prescription medicine that cause sedation, muscle relaxation, and can lower anxiety levels. Benzodiazepines that were commonly used for the treatment of insomnia include quazepam (Doral), triazolam (Halcion), estazolam (ProSom), temazepam (Restoril), flurazepam (Dalmane), and lorazepam (Ativan).

People who take benzodiazepines should be cautious because you may be sleepy in the morning, which can affect driving safety, job performance, and decision-making. Additionally, do not take benzodiazepines with alcohol or other sedating drugs, and do not take more than your

doctor or nurse recommends. Benzodiazepines are generally recommended for short-term use only.

Nonbenzodiazepines — Nonbenzodiazepines are a class of prescription medicines that are somewhat similar to benzodiazepines. These medications may have fewer side effects compared with benzodiazepines because they work more on sleep centers and less on other areas of the brain. They tend to be short acting, so they are also less likely to produce hangover sedation in the morning. Some can also be prescribed for a longer period of time.

Nonbenzodiazepines used to treat insomnia include [zaleplon](#) (Sonata), [eszopiclone](#) (Lunesta), [zolpidem](#) (Ambien), and zolpidem extended release (Ambien CR). Zolpidem is also available as a dissolving tablet (Edluar), an oral liquid spray (Zolpimist), and as a dissolving tablet at a lower dose for middle of the night use (Intermezzo). Do not take these medicines with alcohol or other sedating drugs, and do not take more medicine than your doctor or nurse recommends.

Precautions — Sedative-hypnotic medicines should be used with care and certain groups should not use them at all:

- Pregnant women, due to an increased risk of birth defects
- People with alcoholism
- Individuals with kidney, liver, or lung problems
- People with sleep apnea
- Individuals who need to make decisions during the night, such as clinicians on-call or single parents caring for children

Side effects — Sedative-hypnotic medicines can have potentially serious side effects:

- Unusual behaviors such as driving, eating, or having sex after going to sleep have been reported after taking benzodiazepines and nonbenzodiazepines. You may have no memory of this behavior. There is an increased risk of these unusual behaviors if you take the sleeping medicine after drinking alcohol or taking narcotic pain medicines.
- There is a risk of impaired driving the morning after taking some of these medications. This risk is higher in women.
- Severe allergic reactions (such as anaphylaxis and angioedema) have rarely been reported, sometimes after the first dose. Studies are being conducted to determine which sedative-hypnotic medicines have these risks. You should speak to your doctor or pharmacist about these risks to determine if any precautions are needed. (See "[Patient information: Anaphylaxis symptoms and diagnosis \(Beyond the Basics\)](#)".)
- There is risk of addiction with continued use of these medications.

Ramelteon — [Ramelteon](#) (Rozerem®) is a prescription medicine approved for insomnia that works in a different brain system from the other sedative-hypnotic medications. Its benefit is greatest for people who have difficulty falling asleep. It is unlikely to cause morning sleepiness or to be habit-forming.

The most common side effects of [ramelteon](#) are headache, sleepiness, and sore throat, although these problems occur in fewer than 1 percent of patients. You should not take ramelteon if you have liver disease or take [fluvoxamine](#) (Luvox®). Ramelteon is available in the United States, but not in Europe.

Antidepressants — In 2010, the United States Food and Drug Administration (FDA) approved

the use of very low doses of doxepin, an antidepressant, as a treatment for insomnia. This new formulation, called Silenor®, uses doses of 3 and 6 mg of doxepin as a specific treatment for insomnia. This medication may be most helpful for patients with difficulty staying asleep. The most common side effects of Silenor® are drowsiness the next day, dry mouth, and dry eyes.

Other antidepressants are not approved to treat insomnia, although they are sometimes used because they produce sedation. However, antidepressants may have a limited benefit unless you also have depression. Antidepressants can cause daytime sleepiness and other side effects. (See "Patient information: Depression treatment options for adults (Beyond the Basics)".)

Antihistamines — Non-prescription sleep aids such as Nytol®, Somnex®, and Unisom® contain an antihistamine (eg, diphenhydramine/Benadryl®). Some of these products also contain a pain reliever (eg, Tylenol® PM, Advil® PM). You should not take products containing a pain reliever every night, especially if you do not have pain.

There is little evidence that these sleep aids are beneficial for treating insomnia. Antihistamines can cause daytime sleepiness and other side effects, such as dry mouth, blurred vision, and difficulty emptying the bladder.

Melatonin — Melatonin is a hormone that is normally produced by a gland in the brain. Melatonin does not appear to be helpful in most people who have insomnia, except in people with delayed sleep phase syndrome. (See 'Phototherapy' above.)

Melatonin appears to be safe when used for less than three months. However, melatonin is marketed as a dietary supplement; the ingredients, dose, and purity of dietary supplements are not regulated. Listed doses may be higher than that used for the treatment of insomnia (0.2 to 0.3 mg per night).

ALCOHOL AND SLEEP — People commonly use alcohol as a sleep aid. However, alcohol often interferes with sleep later in the night. When used on a regular basis over the long-term, you can become dependent on alcohol and develop severe insomnia if you stop drinking alcohol. Due to numerous health risks, alcohol is not recommended at bedtime for people with insomnia.

ALTERNATIVE TREATMENTS FOR INSOMNIA — A recent review of complementary approaches in the treatment of insomnia concluded the following: There was some support for benefit from the use of acupuncture, tai chi, and yoga; there was mixed evidence for the use of acupuncture and L-tryptophan; and, there was little support for the use of herbal medicines, such as valerian, massage, or aromatherapy.

The potential benefits from tai chi and yoga might be related either to the procedure itself or to the activity involved. Other studies using various levels of exercise as a therapy have also shown mild positive effects that correlated with improvement in fitness levels and were independent of an improvement in mood. Most herbal products have not been tested to be sure that they are safe and effective. Therefore, these treatments are not recommended.

WHERE TO GET MORE INFORMATION — Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a

patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient information: Insomnia \(The Basics\)](#)

[Patient information: Daytime sleepiness \(The Basics\)](#)

[Patient information: Jet lag \(The Basics\)](#)

[Patient information: What is a sleep study? \(The Basics\)](#)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient information: Insomnia \(Beyond the Basics\)](#)

[Patient information: Anaphylaxis symptoms and diagnosis \(Beyond the Basics\)](#)

[Patient information: Depression treatment options for adults \(Beyond the Basics\)](#)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Classification of sleep disorders](#)

[Clinical features and diagnosis of insomnia](#)

[Overview of insomnia](#)

[Physiology and clinical use of melatonin](#)

[Treatment of insomnia](#)

The following organizations also provide reliable health information.

- National Library of Medicine

www.nlm.nih.gov/medlineplus/sleepdisorders.html

- American Academy of Sleep Medicine

www.aasmnet.org

- National Heart, Lung, and Blood Institute

www.nhlbi.nih.gov/health/public/sleep/index.htm

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Ten basic rules for a good night's sleep

Sleep only as much as you need to feel rested and then get out of bed

Keep a regular sleep schedule

Avoid forcing sleep

Exercise regularly for at least 20 minutes, preferably 4 to 5 hours before bedtime

Avoid caffeinated beverages after lunch

Avoid alcohol near bedtime: no "night cap"

Avoid smoking, especially in the evening

Do not go to bed hungry

Adjust bedroom environment ●

Deal with your worries before bedtime