Patient information: Insomnia

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INTRODUCTION

Insomnia is defined as difficulty falling asleep, 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 may lead to trouble functioning during the daytime.

Insomnia is not defined by the number of hours slept because "sufficient sleep" can vary from one person to another. Sleep requirements may also decrease with age.

Insomnia is the most common sleep complaint in the United States. While almost everyone has an occasional night of poor sleep, approximately 10 percent of adults have long-term or chronic insomnia.

This article will review the symptoms, causes, and diagnosis of insomnia. Treatment of insomnia is discussed separately. (See "Patient information: Insomnia treatments".) More detailed information about insomnia is available by subscription. (See "Overview of insomnia".)

INSOMNIA SYMPTOMS

Common symptoms of insomnia include:

- Difficulty falling asleep or staying asleep
- Variable sleep, such as several nights of poor sleep followed by a night of better sleep.
- Daytime fatigue or sleepiness
- Forgetfulness
- Poor concentration
- Irritability
- Anxiety
- Depression
- Reduced motivation or energy
- Increased errors or accidents
- Ongoing worry about sleep

For many people, the symptoms of insomnia interfere with personal relationships and job performance. In one survey, people who experienced chronic insomnia had a two-fold

increased risk of automobile accidents compared to people who were fatigued for other reasons [1].

People with insomnia have an impaired sense of sleep. You may feel that you have not slept, even if testing shows that you have. You may also feel more fatigued than individuals without insomnia, even if testing indicates that you are less sleepy. This impaired sense of sleep may be related to a problem with the body's sleep-arousal system, which normally helps you feel awake after sleeping and feel tired before going to bed.

One result of poor sleep is that you may become concerned that you will be sleep-deprived and will suffer from serious consequences of lost sleep. This concern may grow as you are unable to sleep, which in turn makes it increasingly difficult to fall asleep. It is important that you not get caught in this cycle and understand that you are sleeping more than it seems.

INSOMNIA CAUSES

Insomnia may have many causes (see "Types of insomnia"):

Short-term insomnia — Short-term insomnia lasts three months or less and is usually caused by stressors. Possible stressors include the following:

- Changes in the sleeping environment (temperature, light, noise)
- Stress, such as the loss of a loved one, divorce, or job loss
- Recent illness, surgery, or sources of pain
- Use or withdrawal from stimulants (caffeine), certain medications (theophylline, beta blockers, steroids, thyroid replacement, and asthma inhalers), illegal drugs (cocaine and methamphetamine), or alcohol

Short-term insomnia often resolves when the stressor resolves.

Traveling across time zones is another common cause of short-term insomnia, known as jet lag. Jet lag may occur regardless of the direction of travel, although it is most pronounced when traveling west to east. Most people require several days to adjust their sleep pattern to the new time zone. Other tips are provided here (table 1).

Insomnia is common in individuals who work the night shift (ie, third shift). You may be sleepy at work and while driving home in the morning, but have difficulty staying asleep past noon. The sleep problems can be resolved by transferring from the night shift or by sleeping at the same time every day for several weeks.

Long-term insomnia — Long-term insomnia lasts longer than one month. Common causes include the following:

- Mental health problems, such as depression, anxiety disorders (including panic attacks), and posttraumatic stress disorder
- Medical illnesses, especially those that cause pain, stress, or difficulty breathing
- Neurological disorders, such as Parkinson disease and Alzheimer disease

- Other sleep disorders, such as sleep apnea, restless legs syndrome, sleep apnea, periodic limb movements, and circadian rhythm disorders (table 2) (see "Patient information: Sleep apnea in adults")
- Medications or illegal drug use
- Primary insomnia — Insomnia is called "primary" or "independent" if it is particularly prominent or if there is no identifiable problem causing poor sleep (table 3).

Short duration sleep and sleep deprivation — Insomnia is frequently confused with short sleep requirement and sleep deprivation:

- Sleeping for only a short period of time is common among people who have insomnia. However, some people normally require little sleep and can function without difficulty after sleeping for only a few hours. People who sleep less but have no residual daytime sleepiness are called short sleepers and do not have a sleep problem. In addition, you may need less sleep as you get older. Needing less sleep does not necessarily mean that you have insomnia unless you also have daytime symptoms (daytime sleepiness).
- People who are sleep deprived as well as those with insomnia sleep for a short time and have difficulty functioning during the daytime. However, people who are sleep deprived will fall asleep quickly if given the opportunity. Chronic loss of sleep, caused by spending fewer than 8 hours in bed on most nights, is probably the most common cause of sleepiness. About one-third of adults suffer with chronic loss of sleep affects. However, not getting enough sleep is much different from insomnia, which is the inability to sleep given the chance to sleep.

INSOMNIA DIAGNOSIS

If you seek help for insomnia, your doctor or nurse will start by asking you to remember how many hours you slept and what problems you had with sleep over a typical 24-hour period. Your bed partner or caregiver can help to answer these questions because you may not be aware of what happens while you sleep.

You may be asked to keep a daily sleep log, which is a record of sleep times and problems for one to two weeks (figure 1).

Your doctor or nurse may ask other questions to determine the cause of your insomnia. A physical examination may be performed to determine if there are medical or neurologic conditions causing or worsening your sleep problems.

Laboratory tests may be recommended to help identify underlying medical or sleep disorders, although this is not required for everyone with insomnia. Laboratory tests may include polysomnography or actigraphy:

- Polysomnography — Polysomnography is a formal sleep study done in a sleep laboratory. It uses monitors that are attached to your body to record movement, brain activity, breathing, and other physiologic functions. This test may be used when an

underlying sleep disorder is suspected or if your insomnia has not responded to treatment.

- Actigraphy — Actigraphy records activity and movement with a monitor or motion detector, generally worn on the wrist. The test is conducted over several days and nights at home to gather information about how much and at what time you are actually sleeping.

INSOMNIA TREATMENT

The treatment of insomnia is discussed separately. (See "Patient information: Insomnia treatments".)

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 every four months 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:

Patient information: Insomnia treatments
Patient information: Sleep apnea in adults

Professional Level Information:

Classification of sleep disorders
Diagnostic evaluation of insomnia
Overview of insomnia
Physiology and clinical use of melatonin
Treatment of insomnia
Types 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)

[1-6]

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GRAPHICS

Recommendations for time zone shifts

1. Try to choose daytime flights to minimize sleep loss.
2. If traveling at night or for long distance, try to travel in business or first class to allow sleep during the flight.
3. Avoid large meals, caffeine, and alcohol during your normal sleep period.
4. Drink water.
5. If the flight is 8 hours or more in length and occurs during your destination sleep period, consider the use of a short-acting hypnotic during the flight (this would contraindicate the use of any alcohol during the flight) and for the first few nights after arrival.
6. Some research suggests that melatonin can help to alter circadian rhythms. Usage guidelines are available, but melatonin is sold only as a health food substance and is not approved by the FDA. Typical use is 5 mg at the desired bedtime for 4 nights after arrival in a new time zone.
7. Avoid important meetings on the day after arrival.
8. Avoid distance driving or other sedentary behavior on the day of arrival.
9. Bright light can either maintain or help to shift circadian rhythms depending upon the time of exposure.

Data from: Arendt, J, Stone, B, Skene, DJ. Sleep disruption in jet lag and other circadian rhythm-related disorders. In: Principles and practice of sleep medicine, 4th ed, Kryger, M, Roth, T, Dement, WC (eds), Saunders, New York 2005.

Circadian rhythm disorders

Circadian rhythms are changes in body functions, such as temperature regulation and sleep cycles, which occur during a 24-hour period. People with circadian rhythm disorders may experience insomnia and daytime sleepiness because their circadian rhythms follow an abnormal pattern.
Shift work sleep disorder - People who work late night shifts can have difficulty sleeping during the daytime. This is especially true for people who work rotating or permanent night shifts, who often revert to sleeping at night on days off to maintain contact with their family. Treatment often includes adopting a consistent daily sleep routine seven days per week.
Delayed sleep phase syndrome - Some people have a sleep-wake rhythm that is longer than 24 hours. These people often feel better when they go to bed later and sleep later every day (for example, 12 AM to 8 AM, then 2 AM to 10 AM). However, this is not usually practical because of school or work requirements. Treatment usually includes sleeping at a consistent time every day.
Advanced sleep phase syndrome - This is the opposite of delayed sleep phase syndrome, and is more common in middle age and elderly adults. A person with this disorder may go to sleep in the early evening and wake much earlier than they wish. Attempts to stay up later do not always allow the person to wake later in the morning. Sleep can be normal if the person is willing to accept the early bedtime and wake time.

Independent insomnia disorders

Insomnia is called an "independent disorder" if it is not caused by an underlying problem, such as an illness. The following are insomnia disorders.

Inadequate sleep hygiene - Insomnia may also be related to poor sleep hygiene. Poor sleep hygiene refers to habits that interfere with a person's ability to fall asleep and stay asleep. Examples include:

- Irregular sleep schedule (daytime naps, irregular sleep or wake times, excessive time in bed)
- Use of substances before bedtime that disturb sleep (caffeine, alcohol, and tobacco)
- Mentally or physically stimulating activity before bedtime (eg, exercise)
- Use of bedroom for non-sleep activities (studying, snacking)
- Uncomfortable sleep environment (too loud, hot/cold, bright)

Psychophysiological insomnia - People with psychophysiological insomnia have a chronic insomnia problem related to anxiety and increased tension at bedtime. The person does not have phobias, anxiety disorders, or other mental health problems, but they do feel very anxious and concerned about their sleep problems. Eventually the person may become excessively worried, fearful, and frustrated with not being able to sleep that he or she develops habits and responses that make getting to sleep and staying asleep very difficult.

Idiopathic insomnia - People with idiopathic insomnia have had trouble falling or staying asleep their entire lives, often starting in childhood. This may cause difficulty in functioning during the day. Experts think it may be linked to genetically determined abnormalities in the sleep-promoting or arousal systems. People with idiopathic insomnia often have family members with the condition.

Behavioral insomnia of childhood - Behavioral insomnia of childhood describes a child who requires specific circumstances, such as a parent or favorite toy, to fall asleep. This usually occurs because child has become accustomed to having the parent/toy over time. Not having the required object can make it difficult for the child to fall asleep or return to sleep during the night. Between 10 and 30 percent of children may have this problem, beginning at six months of age.

Paradoxical insomnia - In some cases, people complain of insomnia or sleeplessness although sleep tests show a normal sleep pattern. This is called paradoxical insomnia or sleep state misperception.

Sleep log

Date	Bedtime	Time to fall asleep	How many times did you wake up during night?	How long did you stay up?	Final awake time	Daytime naps	Did you feel rested in the morning?
July 3	Example: 12:00 AM	45 minutes	3	10 mins 20 mins 15 mins	4:30 AM	2:00 PM, 1 hour	No