

mismatch that from the eyes, and the mismatch results in a brief episode of vertigo. Sludging can be caused by damage to the lining of the semicircular canals. Such damage may be caused by ear infections, injury, surgery, or blockage of an artery to the inner ear.

This type of vertigo can be frightening, but it is harmless. An episode of vertigo begins 5 to 10 seconds after the head moves and lasts less than a minute. Episodes usually subside on their own in weeks. Occasionally, they persist for months and can cause dehydration due

to nausea and vomiting. No hearing loss or noise in the ears (tinnitus) occurs.

Avoiding the positions that cause vertigo can help. People can learn to perform the Epley maneuver, which separates the calcium particles and redistributes them through the semicircular canals. As a result, the particles can be absorbed, then form again, as normally occurs. In about 90 to 95% of people, this maneuver provides immediate relief without the use of drugs. In some people, the vertigo recurs, and the maneuver must be repeated.

*Merck Manual
2nd Home Ed 5, 2003.*

CHAPTER 81

Sleep Disorders

Sleep disorders are disturbances that affect the ability to fall asleep, stay asleep, or stay awake or that produce abnormal behaviors during sleep, such as night terrors or sleepwalking.

Sleep is necessary for survival and good health, but why sleep is needed and exactly how it benefits people are not fully understood. Individual requirements for sleep vary widely; healthy adults may need as few as 4 hours or as many as 10 hours of sleep every day. Most people sleep at night. However, many people must sleep during the day to accommodate work schedules—a situation that often leads to sleep disorders.

How long a person sleeps and how rested a person feels after waking can be influenced by many factors, including level of excitement or emotional distress, age, diet, and use of drugs. For example, some drugs make a person sleepy, and others make sleeping difficult. Some food components or additives, such as caffeine, strong spices, and monosodium glutamate (MSG), may affect sleep. Older people tend to fall asleep earlier, to awaken earlier, and to be less tolerant of changes in sleep patterns (for example, they may be more prone to jet lag). Compared with younger adults and children, older people are more easily aroused from sleep and awaken more often during the night. Whether older people need less sleep is unclear. Napping during the day may help

compensate for poor sleep during the night, but it may also contribute to the problem.

All sleep is not the same. There are two main types of sleep: rapid eye movement (REM) sleep and nonrapid eye movement (non-REM) sleep, which has four stages. People normally cycle through the four stages of non-REM sleep, usually followed by a brief interval of REM sleep, 5 or 6 times every night.

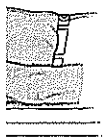
Sleep progresses from stage 1 (the lightest level, during which the sleeper can be awakened easily) to stage 4 (the deepest level, during which the sleeper can be awakened only with difficulty). In stage 4, blood pressure is at its lowest, and heart and breathing rates are at their slowest.

During REM sleep, electrical activity in the brain is unusually high, somewhat resembling that during wakefulness. The eyes move rapidly, and muscles may jerk involuntarily. The rate and depth of breathing increase, but the muscles, except for the diaphragm, are greatly relaxed—more so than during the deepest levels of non-REM sleep.

Most dreaming occurs during REM sleep. Most talking during sleep, night terrors, and sleepwalking occur during stages 3 and 4.

Usually, sleep disorders can be diagnosed based on the medical history, including a description of the current problem, and the results of a physical examination. When the diagnosis is uncertain, doctors may recommend evaluation in a sleep laboratory. The evalua-

r head rapidly. when calcium r can be cured ed to a recum- head position the particles, r canals.



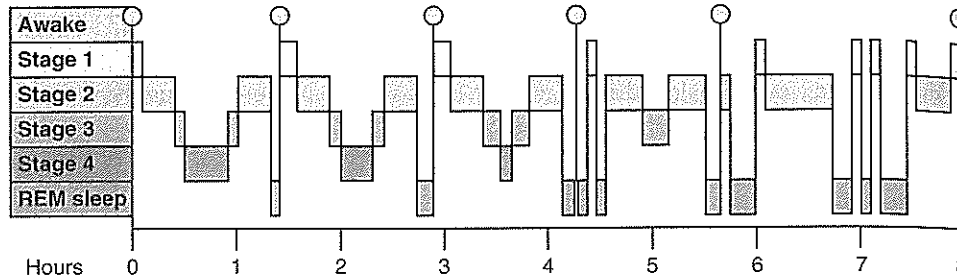
oves the person ncent position over the table : a 45° angle to cted ear. Grav- in the semicir-



turned to the gle.

Stages of the Sleep Cycle

People normally cycle through distinct stages of sleep 5 or 6 times during the night. Relatively little time is spent in deep sleep (stages 3 and 4). More time is spent in rapid eye movement (REM) sleep as the night progresses, but this stage is interrupted by brief returns to light sleep (stage 1). Brief awakenings occur throughout the night.



tion consists of polysomnography and observation of unusual movements during an entire night's sleep. Polysomnography includes recording and monitoring of breathing, heart rate, and other functions; electroencephalography (EEG), which records the brain's electrical activity; and electro-oculography, which records eye movement during REM sleep.

Insomnia

Insomnia is difficulty falling asleep or staying asleep or a disturbance in sleep that makes sleep seem inadequate or unrefreshing.

Insomnia is not a disease. It is a symptom that can have many different causes, including an irregular sleep-wake schedule, physical disorders, drug use or withdrawal, drinking large amounts of alcohol in the evening, emotional problems, and stress. Often, the cause is anxiety, nervousness, depression, or fear. Sometimes the cause is simply lack of fatigue. Some people have long-standing (chronic) insomnia that has little or no apparent relationship to a physical disorder, use or withdrawal of drugs, or any stress.

Difficulty falling asleep is common among young and old. About 10% of adults have chronic insomnia, and about 50% have insomnia sometimes.

▲ see page 445

Because sleep patterns change as people age, older people may think they have insomnia when they do not. As people age, they tend to sleep less at night and to nap during the day. Stage 4 sleep, the period of deep sleep, becomes shorter and eventually disappears. Also, older people awaken more during all stages of sleep. These changes are normal and usually do not indicate a sleep disorder.

There are several types of insomnia. Difficulty falling asleep, called sleep-onset insomnia, often occurs when people cannot let their minds relax and they continue to think and worry. Difficulty staying asleep, called sleep maintenance insomnia, is more common among older people than among younger people. People with this type of insomnia fall asleep normally but wake up several hours later and cannot fall asleep again easily. Sometimes they drift in and out of a restless, unsatisfactory sleep. Early morning awakening, another type of insomnia, may be a sign of depression in people of any age.

Sleep-wake schedule disorder may occur in people whose sleep patterns have been disrupted: They fall asleep at inappropriate times and then cannot sleep when they should. These sleep-wake reversals often result from jet lag (especially when traveling from east to west), working irregular night shifts, frequent changes in work hours, or excessive use of alcohol. Sometimes sleep-wake reversals are a side effect of drugs. Sleep-wake reversals are

common among people who are because they are often awakened at night. Damage to the brain's biological clock (caused by encephalitis, Alzheimer's disease, for example) disrupt sleep patterns.

Symptoms and Diagnosis

Symptoms include irritability during the day, and problems performing under stress.

To diagnose insomnia, doctor person's sleep pattern, use of alcohol and illicit drugs), deg logical stress, medical history, ar ical activity. Some people need others, so the diagnosis of ins on a person's individual needs.

Treatment

The treatment of insomnia cause and severity. If insomnia another disorder, treatment may improve sleep. For most insomnia, some simple changes such as following a regular sleep schedule improve sleep.

Bright light therapy (which to bright light at appropriate times reset the biologic clock. This is especially useful for people who have reversal due to jet lag, those with onset insomnia, and those who wake too early.

When a sleep disorder interferes with a person's normal activities and being, the intermittent use of hypnotics) for up to 2 weeks is helpful. Most sleep aids require a prescription. Sleep aids available without a prescription (over-the-counter, or OTC) include hydramine or doxylamine. These drugs may be especially helpful in older people.

Older people experiencing insomnia changes usually do not need medication. Because total nighttime sleep decreases with age, older people may sleep less if they go to bed later, and sleep less during the day. Even if they have insomnia, treatment often causes more problems (falls, and incontinence) than it solves.

If emotional stress is causing insomnia, treatment to relieve the stress may help. Taking sleep aids. People