

ORGANIZATION NEWS

Information/Education Page

Sleep and Traumatic Brain Injury

How common are sleep problems after a traumatic brain injury?



Many people with traumatic brain injury (TBI) suffer from sleep disturbances. Sleep disorders are 3 times more common in TBI patients than in the general population; about 60% of people with TBI experience long-term difficulties with sleep.

What are types of sleep problems?

Sleep disturbances have been found in people with all severities of brain injuries. Sleep is a complex process that involves many parts of the brain. For this reason, many different kinds of sleep disturbances can occur after TBI.

Common sleep disorders

- *Insomnia*: difficulty with falling asleep or staying asleep.
- *Excessive daytime sleepiness*: extreme drowsiness.
- *Delayed sleep phase syndrome*: mixed-up sleep patterns.
- *Narcolepsy*: falling asleep suddenly and uncontrollably during the day.

Common sleep syndromes

- *Restless leg syndrome*: urge to move the legs because they feel uncomfortable.
- *Bruxism*: grinding or clenching teeth.
- *Sleep apnea*: brief, frequent pauses in breathing during sleep.
- *Periodic limb movement disorder*: involuntary movement of legs and arms during sleep.
- *Sleepwalking*: walking or performing other activities while sleeping and not being aware of it.

What causes sleep problems?

- *Physical and chemical changes*: The internal clock in the brain controls when people sleep and wake. If injured, the brain may not be able to tell the body to fall asleep or wake up. There are also chemicals in our body that help us to sleep. An injury can change the way that these chemicals affect the body.
- *Changes in breathing control*: Sometimes the brain's ability to control breathing during sleep becomes altered after a TBI, resulting in periods of apnea (when breathing

actually stops for long enough for blood oxygen levels to drop).

- *Medications*: Medications taken after a brain injury may cause problems in falling asleep or staying asleep.
- *Daytime sleeping (napping) and physical inactivity*: Napping during the day is likely to disturb sleep at night. Inactivity or lack of exercise can also worsen sleep.
- *Pain*: Pain may disturb sleep.
- *Depression*: Sleep problems, such as difficulty falling asleep and early morning waking, are common symptoms of depression.
- *Alcohol*: Drinking alcohol before bedtime is likely to interfere with normative sleep rather than improve it.
- *Caffeine and nicotine*: Nicotine from tobacco may cause sleep disturbances and is often overlooked. Caffeine can also disrupt sleep.

What can be done to improve sleep?

Changes in behavior and environment are the first in line to treating sleep difficulties.

Daytime suggestions

- Set an alarm to try to wake up at the same time every day.
- Include meaningful activities in your day.
- Get off the couch and limit television watching.
- Exercise every day.
- Try to get outdoors for some sunlight during the daytime.
- Do not nap for more than 20 minutes during the day.

Nighttime suggestions

- Try to go to bed at the same time and set your alarm for the morning.
- Follow a bedtime routine.
- Avoid caffeine, nicotine, alcohol, and sugar for 5 hours before bedtime.

- Avoid eating prior to sleep to allow time to digest, but also do not go to bed hungry.
- Do not exercise within 2 hours of bedtime.
- Do not eat, read, or watch television while in bed.
- Create a restful atmosphere in the bedroom, protected from distractions, noise, extreme temperatures, and light.
- If you don't fall asleep in 30 minutes, get out of bed and do something relaxing or boring until you feel sleepy.

Talk to your doctor

If your sleep problems persist, talk to your doctor. Evaluation of sleep problems should include a thorough history of such problems, medication review, an assessment of your bedtime routines, and a comprehensive medical evaluation.

Treatment options

- *Medications:* Ask your doctor about medications that can help you sleep through the night or keep you awake during the day. Special care is needed when choosing a medication in order to avoid daytime sedation or worsening of cognitive and behavior problems.
- *Nonmedication therapies:* If mood or emotional issues, such as anxiety or depression, are causing sleep difficulties, psychotherapy (counseling) may be an appropriate treatment. Sleep restriction may improve sleeping patterns by restricting the number of hours spent in bed. For those with anxiety, relaxation therapy can help create a restful environment both in your bedroom and in your body and mind. Use of special bright lights (phototherapy) has been

shown to help promote sleep. When exposed to these lights at strategic times in the day, you may be able to sleep better at night.

- *Natural remedies:* Some consumers have found herbal teas, melatonin, and valerian useful for sleep problem. These remedies are sold in health food and drug stores with no prescription needed. However, these remedies have multiple drug interactions, and you should tell your doctor if you are using them.

Disclaimer

This information is not meant to replace the advice from a medical professional. You should consult your health care provider regarding specific medical concerns or treatment.

Source

Our health information content is based on research evidence whenever available and represents the consensus of expert opinion of the TBI Model Systems directors.

Authorship

Sleep and Traumatic Brain Injury was developed by Brian Greenwald, MD, and Kathleen Bell, MD, in collaboration with the University of Washington Model System Knowledge Translation Center and was funded by the National Institute on Disability and Rehabilitation Research/U.S. Department of Education (grant no. H133A060070). Copyright © 2010. May be reproduced and distributed freely with appropriate attribution.