

Too Little Sleep, and Too Much, Affect Memory

May 02, 2014

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When it comes to memory, sleep is a Goldilocks issue: both too much and too little aren't good. Aim for "just right," says a new report from the Harvard-based Nurses' Health Study.

"Our findings suggest that getting an 'average' amount of sleep, seven hours per day, may help maintain memory in later life and that clinical interventions based on sleep therapy should be examined for the prevention of [mental] impairment," said study leader Elizabeth Devore, an instructor in medicine at Harvard-affiliated Brigham and Women's Hospital in Boston, in a news release.

A group of women taking part in the Nurses' Health Study were asked about their sleep habits in 1986 and 2000, and were interviewed about memory and thinking skills three times over a later six-year period. Devore and her colleagues observed worse performance on brain testing among women who slept five hours or fewer per night or nine hours or more, compared with those getting seven to eight hours of sleep a night. Their findings were published online in the *Journal of the American Geriatrics Society*.



The researchers estimated that undersleepers and oversleepers were mentally two years older than the women who got seven to eight hours of shut-eye a night.

Beyond memory

Although this study couldn't prove that getting too little or too much sleep causes memory and thinking problems, it's in line with other work showing the potentially harmful effects of poor sleep. Previous research has linked poor sleep with higher risks of heart disease and stroke, type 2 diabetes, and depression.

How might sleep affect memory? People who are persistently sleep deprived are more likely to have high blood pressure, diabetes, and narrowed blood vessels. Each of these can decrease blood flow inside the brain. Brain cells need a lot of oxygen and sugar, so blood flow problems could affect their ability to work properly.

Poor sleep could affect the brain in another way. Sleep-deprived mice develop more deposits of a protein called beta amyloid in the brain compared with mice allowed to

sleep normally. In humans, beta amyloid deposits in the brain are linked to declines in memory and thinking and also increase the risk of dementia.

What about people who sleep too much? People who spend more than nine or 10 hours a night in bed often have poor sleep *quality*. So for both too little and too much sleep, the important number may be the hours of quality sleep.

Another possibility is a two-way street between sleep and memory: sleep quality may affect memory and thinking, and the brain changes that cause memory and thinking problems may disturb sleep.

Getting better sleep

Here are 12 tips for getting better sleep:

- Establish a regular bedtime and a relaxing bedtime routine—examples might include taking a warm bath or listening to soothing music.
- Use your bed only for sleeping or lovemaking. Avoid reading and watching television in bed.
- If you can't fall asleep after 15 to 20 minutes, get out of bed and go into another room. Do something relaxing, such as reading quietly with a dim light. Don't watch television or use a computer, since the light from their screens has an arousing effect. When you feel sleepy, get back into bed. Don't delay your scheduled wake-up time to make up for lost sleep.
- Get plenty of exercise. Build up to 45 minutes of moderate exercise nearly every day. Get your exercise early in the day. Try some easy stretching exercises or yoga to relax your muscles and your mind at bedtime.
- Whenever possible, schedule stressful or demanding tasks early in the day and less challenging activities later. This helps you wind down at the end of your day.
- Don't go to bed hungry, but don't eat a big meal right before getting into bed. If you want a bedtime snack, keep it bland and light.
- Limit caffeine and consume none after 2 p.m.
- To decrease middle-of-the-night urination, don't drink any fluids after dinner.
- Avoid alcohol after dinnertime. Although many people think of it as a sedative, it can get in the way of quality sleep.
- Be sure your bed is comfortable and your bedroom is dark and quiet. Consider a sleep mask or earplugs.
- Don't take long naps during the day. If you need a nap, restrict it to 20 to 30 minutes in the early afternoon.

Practice relaxation breathing. Use slow breaths, especially when you exhale.