

Too much or too little sleep bad for your brain

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(HealthDay)—Everyone needs sleep, but too little or too much of it

might contribute to declines in thinking, a new study suggests.

Too [little sleep](#) was defined as four or fewer hours a night, while too much was deemed 10 or more hours a night. The ideal amount? Seven hours a night.

"Cognitive function should be monitored in individuals with insufficient or excessive sleep," said study author Yanjun Ma, from Peking University Clinical Research Institute, in China.

Still, Ma cautioned that the study can't prove that too little or too much sleep causes mental ("cognitive") decline, only that there appears to be an association.

According to the National Sleep Foundation, sleep is essential because it lets your body and mind recharge. The right amount of sleep also helps you stay healthy and prevent diseases.

Without enough sleep, the brain cannot function properly, impairing concentration, clear thinking and memory-processing.

But the mechanisms underlying these associations remain unclear. It's possible that inflammation might be related to excessive sleep, Ma said.

Meanwhile, too little sleep might increase cerebrospinal fluid levels of amyloid plaque and tau protein, which are hallmarks of Alzheimer's disease, Ma added.

Dr. Sam Gandy, associate director of the Mount Sinai Alzheimer's Disease Research Center in New York City, added, "More than any other time in the circadian cycle, during sleep, the brain's glymphatic system is active in washing out excess levels of toxins, including amyloid-beta peptide."

Each person probably has some optimum balance between sleep and amyloid clearance, with too much or too little of one causing the other to tip in the wrong direction, he explained.

"The technology for individual optimization has not been generally rolled out to the level of toxins in the brain, but this looks to be an important emerging area," Gandy said. "Optimizing sleep and amyloid clearance is likely to join [sleep apnea](#) as another readily treatable factor driving late-life [cognitive decline](#)."

For the study, Ma's team collected data on more than 20,000 men and women who took part in either the English Longitudinal Study of Aging or the China Health and Retirement Longitudinal Study.

Participants reported their sleep habits and were given tests of cognition.

During follow-up, cognitive scores dropped faster among people with four hours or fewer and 10 hours or more of sleep per night than those who slept seven hours per night, the researchers found.

This association is called a U-shaped relationship, because the effects of sleep on cognition are seen at both ends of the curve.

The report was published online Sept. 21 in *JAMA Network Open*.

Dr. Yue Leng, an assistant professor of psychiatry at the University of California, San Francisco, co-authored an editorial that accompanied the study. She said, "An increasing number of studies have found a U-shaped relationship between [sleep duration](#) and cognition, where both short and long sleep duration was associated with worse cognition."

But the implication of this U-shaped relationship is unclear, partly because of the limitations in [study design](#), Leng said.

To really determine how sleep affects cognition, studies need to go beyond sleep duration and take into account both sleep quality and quantity, Leng noted. Perhaps, then, sleep can be used in the prevention and management of dementia, she suggested.

"It has been almost two decades since sleep duration was first suggested to be linked with cognitive health in older adults," Leng said. "Better study design and more valid and reliable measurements are needed to help clarify this relationship."

The National Sleep Foundation recommends that adults get seven to nine hours of sleep each night.

To get a good night's sleep, the foundation recommends having good sleep habits that include:

- Having a realistic bedtime and sticking to it every week and weekend night.
- Keeping the bedroom cool and dark.
- Banning televisions, computers and tablets, cellphones and other electronic devices from the bedroom.
- Not ingesting caffeine, alcohol or large meals in the hours before bedtime.
- Not using tobacco day or night.
- Exercising during the day, which can help you wind down and get ready for sleep.

More information: For more on sleep, head to the [Sleep Foundation](#).

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