

Sleep helps reduce errors in memory, research suggests (w/ Video)

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A study by Kimberly Fenn, cognitive neuroscientist at Michigan State University, suggests that sleep helps reduce errors in memory. Credit: Michigan State University

(PhysOrg.com) -- Sleep may reduce mistakes in memory, according to a first-of-its-kind study led by a cognitive neuroscientist at Michigan State University.

The findings, which appear in the September issue of the journal *Learning & Memory*, have practical implications for everyone from students flubbing multiple choice tests to senior citizens confusing their medications, said Kimberly Fenn, principal investigator and MSU assistant professor of psychology.

"It's easy to muddle things in your mind," Fenn said. "This research suggests that after sleep you're better able to tease apart the incorrect aspect of that memory."

Fenn and colleagues from the University of Chicago and Washington University in St. Louis studied the presence of false memory in groups of college students. While previous research has shown that sleep improves memory, this study is the first to address errors in memory, she said.

Study participants were exposed to lists of words and then, 12 hours later, exposed to individual words and asked to identify which words they had seen or heard in the earlier session. One group of students was trained in the morning (10 a.m.) and tested after the course of a normal sleepless day (10 p.m.), while another group was trained at night and tested 12 hours later in the morning, after at least six hours of sleep.

Three experiments were conducted, using different stimuli. In each, the students who had slept had fewer problems with false memory - choosing fewer incorrect words.

How does sleep help? The answer isn't known, Fenn said, but she suspects it may be due to sleep strengthening the source of the memory. The source, or context in which the information is acquired, is a vital element of the memory process.

Or perhaps the people who didn't sleep during the study were simply bombarded with information over the course of the day, affecting their memory ability, Fenn said.

Further research is warranted, she said, adding that she plans to study different population groups, particularly the elderly.

"We know older individuals generally have worse memory performance than younger individuals. We also know from other research that elderly individuals tend to be more prone to false memories," Fenn said. "Given the work we've done it's possible that [sleep](#) may actually help them to reject this false information. And potentially this could help to improve their quality of life in some way."

Source: Michigan State University ([news](#) : [web](#))

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