Medical Xpress

Sleep can boost classroom performance of college students

June 14 2011

Sleep can help college students retain and integrate new information to solve problems on a classroom exam, suggests a research abstract that will be presented Tuesday, June 14, in Minneapolis, Minn., at SLEEP 2011, the 25th Anniversary Meeting of the Associated Professional Sleep Societies LLC (APSS).

Results show that performance by university undergraduates on a microeconomics test was preserved after a 12-hour period that included sleep, especially for cognitively-taxing integration problems. In contrast, performance declined after 12 hours of wakefulness and after a longer delay of one week.

According to the authors, recent sleep research has demonstrated that learned information is often replayed during sleep. This reactivation of learned information may help to consolidate, or stabilize, memories. The present study uniquely extends this area of research to a realistic task that students would encounter in a university classroom.

"Our findings demonstrate the importance of sleep to the ability to flexibly combine distinct concepts to solve novel problems," said lead author Michael Scullin, a doctoral candidate in the Behavior, Brain and Cognition program at Washington University in St. Louis, Mo. "This ability is critical to classroom learning."

The study involved 102 university undergraduates who had never taken an economics course. In the morning or evening they completed an

introductory, virtual lecture that trained them on concepts and problems related to supply and demand microeconomics. They were tested on the material either immediately, after a 12-hour period that included sleep, after 12 hours without sleep, or after one week. The test included basic problems that they had been trained to solve, as well as "transfer" problems that required them to integrate their knowledge of supply and demand to solve novel, but related, problems.

"The most surprising finding of our study was that sleep, relative to an equal-length wake interval, benefited performance on the novel, 'transfer' integration problems without affecting performance on the basic, trained problems," said Scullin.

Provided by American Academy of Sleep Medicine