

New study finds that sleep duration raises the risk for diabetes

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The most common factors believed to contribute to diabetes are a decreased amount of physical activity and access to highly palatable processed foods. However, there is growing evidence that another aspect of our modern lifestyle, short sleep duration, is also contributing toward the "diabetes epidemic", according to a study published in the December 1 issue of the journal *Sleep*.

The study, authored by James E. Gangwisch, PhD, of Columbia University in New York, explored the relationship between sleep duration and the diagnosis of diabetes over an eight-to-10-year follow-up period between 1982 and 1992 among 8,992 subjects who participated in the Epidemiologic Follow-Up Studies of the first National Health and Nutrition Examination Survey. The subjects' ages ranged from 32 to 86 years.

According to the results, subjects who reported sleeping five or fewer hours and subjects who reported sleeping nine or more hours were significantly more likely to have incident diabetes over the follow-up period than were subjects who reported sleeping seven hours, even after adjusting for variables such as physical activity, depression, alcohol consumption, ethnicity, education, marital status, age, obesity and history of hypertension.

The effect of short sleep duration on diabetes incidence is likely to be related in part to the influence of short sleep duration upon body weight and hypertension, said Dr. Gangwisch. Experimental studies have shown



sleep deprivation to decrease glucose tolerance and compromise insulin sensitivity by increasing sympathietic nervous system activity, raising evening cortisol levels and decreasing cerebral glucose utilization. The increased burden on the pancreas from insulin resistance can, over time, compromise â-cell function and lead to type two diabetes, warned Dr. Gangwisch.

"If short sleep duration functions to increase insulin resistance and decrease glucose tolerance, then interventions that increase the amount and improve the quality of sleep could potentially serve as treatments and as primary preventative measures for diabetes," said Dr. Gangwisch.

It is unknown as to how long sleep duration contributes to diabetes, although increased time in bed to compensate for poor sleep quality is one possible explanation, noted Dr. Gangwisch.

Recent estimates show that at least 171 million people worldwide suffer from diabetes, and that, by the year 2030, this number is projected to double.

Lawrence Epstein, MD, medical director of Sleep HealthCenters, an instructor of medicine at Harvard Medical School, a past president of the American Academy of Sleep Medicine (AASM) and a member of the AASM board of directors, said that this study is one of several large studies that have shown that people who don't get enough sleep have higher rates of diabetes.

"Restricting sleep to four hours a night for only a few days causes abnormal glucose metabolism, suggesting the mechanism for increased rates of diabetes in sleep deprived individuals," said Dr. Epstein. "Additionally, sleep disorders that disrupt sleep, such as obstructive sleep apnea, also increase the likelihood of developing diabetes. Treating the sleep disorders improves glucose metabolism and diabetes control.



These studies underscore the fact that sleep is integral to good health."

On average, most adults need seven to eight hours of sleep each night to feel alert and well-rested. Adolescents should sleep about nine hours a night, school-aged children between 10-11 hours a night and children in pre-school between 11-13 hours a night.

Source: American Academy of Sleep Medicine

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