

# Late bedtimes and less sleep may lead to weight gain in healthy adults

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A new study suggests that healthy adults with late bedtimes and chronic sleep restriction may be more susceptible to weight gain due to the increased consumption of calories during late-night hours.

In the largest, most diverse healthy sample studied to date under controlled laboratory conditions, results show that sleep-restricted subjects who spent only four hours in bed from 4 a.m. to 8 a.m. for five consecutive nights gained more weight than control subjects who were in bed for 10 hours each night from 10 p.m. to 8 a.m. The study found an overall increase in [caloric intake](#) during sleep restriction, which was due to an increase in the number of meals consumed during the late-night period of additional wakefulness. Furthermore, the proportion of calories consumed from fat was higher during late-night hours than at other times of day.

"Although previous [epidemiological studies](#) have suggested an association between [short sleep](#) duration and [weight gain](#)/obesity, we were surprised to observe significant weight gain during an in-laboratory study," said lead author Andrea Spaeth, a doctoral candidate in the psychology department at the University of Pennsylvania in Philadelphia, Pa.

The study, which appears in the July issue of the journal *Sleep*, was conducted in the Sleep and Chronobiology Laboratory at the Hospital of the University of Pennsylvania. The study group comprised 225 healthy, non-obese individuals, ranging in age from 22-50 years. Subjects were

randomized to either the sleep restriction or control condition and spent up to 18 consecutive days in the laboratory.

Meals were served at scheduled times, and food was always available in the laboratory kitchen for participants who wanted to eat at other times of day. Subjects could move around but were not allowed to exercise. They were permitted to watch TV, read, play video games or perform other sedentary activities.

The study also found that during sleep restriction males gained more weight than females, and African Americans gained more weight than Caucasians.

"Among sleep-restricted subjects, there were also significant gender and race differences in weight gain," said Spaeth. "African Americans, who are at greater risk for obesity and more likely to be habitual short sleepers, may be more susceptible to weight gain in response to [sleep restriction](#). Future studies should focus on identifying the behavioral and physiological mechanisms underlying this increased vulnerability."

The American Academy of Sleep Medicine reports that weight gain is a risk factor for obstructive sleep apnea (OSA), a common sleep illness that has a severe impact on health and quality of life. The risk of OSA increases as the degree of additional weight increases, with an extremely high prevalence of OSA in people with morbid obesity. Anyone who has experienced recent weight gain and has symptoms of OSA, such as loud and frequent snoring, should be evaluated by a board certified sleep medicine physician.

Last week the AASM issued a statement supporting the new policy of the American Medical Association (AMA) recognizing obesity as a disease requiring a range of medical interventions to advance treatment and prevention. In conjunction with obesity interventions, proper

treatment of OSA can dramatically improve overall health and contribute to successful weight management.

Provided by American Academy of Sleep Medicine

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