

Does Bad Sleep Equal Obesity?



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You may already know that poor sleep can lead to a multitude of health concerns. Snoring and sleep apnea can increase your risk of hypertension, heart disease, stroke, diabetes and so on. Did you also know that poor sleep may cause you to gain weight?

Sleep deprivation

Unfortunately, our hectic 21st century lives often lead to sleep deprivation. Either trouble falling asleep, trouble staying asleep or just burning the candle at both ends—watch TV till late and get up early the next morning (sound familiar?) The average adult should aim for 7-8 hours of sleep per night. You should go to bed at approximately the same time and wake at approximately the same time everyday—this sets your body's built-in clock and optimizes your sleep quality.

Sleep disorders

Insomnia and sleep deprivation are frequent complaints that I see in private practice. Yes, the immediate outcome of less sleep is fatigue, but sleep deprivation also leads to weight gain. An association between short habitual sleep time and increased body mass index (BMI) has been reported in large population samples.

Weight Gain

A study was conducted at the Howard Hughes Medical Institute at Stanford University. The purpose of the study was to determine if sleep duration was an important regulator of body weight and metabolism. A total of 1,024 volunteers participated in this study. Participants underwent nocturnal polysomnography (a night-time test that measures brain activity while you sleep) and reported on their sleep habits through questionnaires and sleep diaries.

Sleep duration and BMI were recorded for all participants. Lastly, blood leptin and ghrelin, two key opposing hormones in appetite regulation, were tested.

The researchers observed that in persons sleeping less than eight hours, there was an increase in BMI proportional to the extent of sleep deprivation, i.e. the more sleep deprived, the higher the BMI. Participants with short sleep had reduced leptin and elevated ghrelin. These differences in leptin and ghrelin are likely to increase appetite, possibly explaining the increased BMI observed with short sleep duration.

The researchers concluded that in Western societies where chronic sleep restriction is common and food is widely available, changes in appetite regulatory hormones due to sleep deprivation may contribute to obesity.

References

1. S. Taheri, et al. "Short Sleep Duration Is Associated with Reduced Leptin, Elevated Ghrelin, and Increased Body Mass Index," PLoS Med. 2004 Dec 7;1(3):e62