

# Partial sleep deprivation linked to obesity

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Evidence linking partial sleep deprivation to energy imbalance is relevant to weight gain prevention and weight loss promotion. A new study published today in the *Journal of the Academy of Nutrition and Dietetics* bases this finding on an extensive review of literature published over a fifteen-year period.

More than 35 percent of American adults are obese and more than 28 percent sleep less than six hours a night. While weight-loss strategies incorporate [lifestyle changes](#) focusing on diet and exercise, modifications in an individual's daily routine, including sleep behaviors, can help manage weight.

"Various investigations, although diverse, indicate an effect of partial [sleep deprivation](#) on body weight management," says lead investigator Sharon M. Nickols-Richardson, PhD, MD, professor, Department of [Nutritional Sciences](#), The Pennsylvania State University, University Park. "The intriguing relationship between partial sleep deprivation and excess adiposity makes partial sleep deprivation a factor of interest in body weight regulation, particularly in weight loss."

The research team evaluated articles published between 1996 and 2011 to determine the role of partial sleep deprivation on energy balance and weight regulation. As part of its methodology, the team constructed a series of comparative tables detailing individual study populations, study designs, [energy intake](#), [energy expenditure](#), and measurements of the hormones ghrelin, leptin, insulin, glucose, and cortisol. Analysis of these characteristics identified a set of patterns, including reduced [insulin](#)

sensitivity, increases in ghrelin, and decreases in leptin among partially sleep-deprived individuals. Changes in ghrelin and leptin influenced energy intake among the study populations.

"Changes in these hormones coinciding with an energy-reduced diet paired with changes in response to partial sleep deprivation may be expected to increase ghrelin and decrease leptin concentrations even further to promote hunger," says Dr. Nickols-Richardson.

The paper calls for further research to determine the effects of sleep deprivation on body composition and substrate use and suggests evaluation of an individual's sleep patterns combined with regular, sufficient sleep may benefit healthy weight management.

Provided by Elsevier

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