

# Sleep deprivation increases food purchasing the next day

September 5 2013

---

People who were deprived of one night's sleep purchased more calories and grams of food in a mock supermarket on the following day in a new study published in the journal *Obesity*, the official journal of The Obesity Society. Sleep deprivation also led to increased blood levels of ghrelin, a hormone that increases hunger, on the following morning; however, there was no correlation between individual ghrelin levels and food purchasing, suggesting that other mechanisms—such as impulsive decision making—may be more responsible for increased purchasing.

Researchers in Sweden were curious as to whether [sleep deprivation](#) may impair or alter an individual's food purchasing choices based on its established tendency to impair higher-level thinking and to increase [hunger](#).

"We hypothesized that sleep deprivation's impact on hunger and decision making would make for the 'perfect storm' with regard to shopping and food purchasing—leaving individuals hungrier and less capable of employing self-control and higher-level [decision-making](#) processes to avoid making impulsive, calorie-driven purchases," said first author Colin Chapman, MSc, of Uppsala University.

On the morning after one night of total sleep deprivation, as well as after one night of sleep, Chapman, along with Christian Benedict, PhD, and their colleagues, gave 14 normal-weight men a fixed budget (approximately \$50). The men were instructed to purchase as much as they could out of a possible 40 items, including 20 high-caloric foods

and 20 low-calorie foods. The prices of the high-caloric foods were then varied to determine if total sleep deprivation affects the flexibility of food purchasing. Before the task, participants received a standardized breakfast to minimize the effect of hunger on their purchases.

Sleep-deprived men purchased significantly more calories (+9%) and grams (+18%) of food than they did after one night of sleep. The researchers also measured [blood levels](#) of ghrelin, finding that the hormone's concentrations were higher after total sleep deprivation; however, this increase did not correlate with food purchasing behavior.

"Our finding provides a strong rationale for suggesting that patients with concerns regarding caloric intake and weight gain maintain a healthy, normal sleep schedule," said Chapman.

Follow up studies are needed to address whether these sleep deprivation-induced changes in food purchasing behavior also exist under partial sleep deprivation, though. Additional research should also look into sleep deprivation's potential impact on purchasing behavior in general, as it may lead to impaired or impulsive purchasing in a variety of other contexts.

**More information:** Chapman, C. et al. Acute sleep deprivation increases food purchasing in men, *Obesity*. [DOI: 10.1002/oby.20579](https://doi.org/10.1002/oby.20579)

Provided by Wiley

Citation: Sleep deprivation increases food purchasing the next day (2013, September 5) retrieved 27 April 2024 from <https://medicalxpress.com/news/2013-09-deprivation-food-day.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.