

To fight effects of sleep deprivation, reach for healthy snacks

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In a study of 245 Stanford physicians, researchers found that a better diet is associated with reduced side effects of sleep deprivation.

Nutrition scientist Maryam Hamidi, Ph.D., conducted research recently which required her to repeatedly stay awake from 8 a.m. until 5 a.m. the next day. As part of the study, she also needed to keep supplies of both healthy and unhealthy snacks stacked in her office.

Then, somewhere along the line, Hamidi, who has a doctorate in nutritional epidemiology and is a trained nutritionist, began to notice something strange about her own food cravings:

"Around 6 or 7 p.m., I would start craving chips," she said. "I started noticing these bags of potato chips in my office. I had not craved chips since my undergraduate college years. One day I had one bag. Then a Diet Coke. And then I went for a second bag, and then a third. I was having fun. I remember thinking, 'This is great. I should do this more often.'"

As a nutrition expert, she realized she was providing an excellent example of just how hard it can be to eat healthy when you're exhausted, no matter how well you understand the importance of a good diet.

"I'd never eaten three bags of chips at once," she said, laughing. "But I'd also never been that sleep-deprived."

As a researcher at the WellMD Center, which promotes physician

wellness at Stanford Medicine, Hamidi is interested in this complicated relationship between sleep and dietary behaviors. Sleep deprivation comes with the territory for physicians, who often work long hours and face interrupted shift cycles. Many researchers have looked into the various ways of improving sleep by reducing [work hours](#) or rearranging [work schedules](#), but few have examined how improving a physician's diet might help.

In a study published online Sept. 10 in the *American Journal of Lifestyle Medicine*, Hamidi, along with other Stanford researchers, examined survey results on sleep and nutrition from 245 Stanford physicians and found that a better diet is associated with reduced side effects of [sleep deprivation](#). Mickey Trockel, MD, Ph.D., clinical associate professor of psychiatry and behavioral sciences, is the senior author of the study.

Barriers to eating well

Physicians face significant barriers to eating well at work due to [long hours](#), a heavy workload and limited access to healthy meals, snacks and drinks. The findings of this study suggest that by providing healthy options at work, employers could help reduce the brain fogging, difficulty concentrating and irritability caused by poor sleep among health care providers. And, as a result, help improve patient care.

"No one really thinks about how a physician's diet affects patient care," Hamidi said.

During her 21 years of experience working side by side with physicians, Hamidi has often observed something similar to her own snack attack with the chips. It's understandable, especially when your options are limited.

Of course, doctors, and the occasional wayward nutritionist, are far from

alone in reaching for junk food when they're tired. Ask any college student who has reached for a candy bar while cramming for exams late at night.

Interestingly, the Stanford study provides an overview of previous scientific literature that has explored the multiple possible causes of why we crave junk food when we're tired, and a lot of it has to do with physiology. In other words, it's not all our fault.

First off, sugar provides a quick fix by temporarily boosting blood sugar levels. In addition, inadequate sleep tends to lower executive brain function—impairing decision-making skills—and willpower. Research also shows that changes caused by lack of sleep in appetite-regulating hormones and brain functioning can further lead to the desire to boost energy levels with food and snacks high in added sugars, sodium, fat and saturated fat.

"Given all of these things, physiology pushes physicians to go for unhealthy foods," Hamidi said. "The nature of the profession makes it more difficult to eat well."

At the same time, past research has also shown that improved nutrition can help mitigate fatigue by improving both cognitive function and sleep quality. As the study says:

"Potential mechanisms for the effect of diet on cognitive performance include regulation of hormones, neurotransmitters, and blood flow as well as reduction of oxidative stress and inflammation. The effects of diet on sleep quality have been attributed to the role of dietary factors in regulation of peripheral circadian clocks and to the synthesis of hormones and neurotransmitters that are involved in sleep regulation."

Facing similar challenges: Pilots

Hamidi once worked as a nutritional consultant for Air Canada Rouge to improve the diets of their pilots to help combat fatigue. Much like physicians, pilots face similar challenges to getting a good night's sleep, she said. They work in a confined space, with little or no time to go in search of healthy foods during layovers. She's seen firsthand how increasing intake of vegetables, and cutting down on added sugars and saturated fat, helps reduce the effects of sleep deprivation.

"Increasing physicians' access to healthy snack options close to their work areas and creating a work environment with many healthy options can help reduce their daytime fatigue," she said.

Her suggestion to employers: Cut back on the ready supply of sodas and snacks high in sugar, sodium and saturated fat and instead offer fruits, vegetables, unsalted raw or dry roasted nuts, salads, smoothies and even healthy protein bars within arm's reach.

"It becomes an organization's responsibility to provide healthy food options for their busy health care providers and to improve the quality of patient care," she said.

More information: Maryam S. Hamidi et al. Associations Between Dietary Patterns and Sleep-Related Impairment in a Cohort of Community Physicians: A Cross-sectional Study, *American Journal of Lifestyle Medicine* (2019). [DOI: 10.1177/1559827619871923](https://doi.org/10.1177/1559827619871923)

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