

How sleep habits can affect weight

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About one in three adults in the United States report routinely not getting enough sleep. Sleep insufficiency is associated with increased risk for diabetes, cardiovascular disease, mental health problems, injuries, loss of productivity, and death. It also appears to be associated with increased risk for obesity, especially in children.

Fortunately, sleep is a modifiable risk factor to improve health—one that you can often do something about.

The sleep-weight connection

Scientists are still trying to determine the biologic mechanisms that may account for the relationship between sleep and weight. "It's easy to see how sleeping too much could lead to weight gain, since you can't be burning a lot of calories when you're asleep," says José M. Ordovás, Ph.D., senior scientist and leader of the Nutrition and Genomics Team at the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA). "It's less obvious how sleeping too little could also cause one to gain weight."

Certainly, we have less energy to be physically active when we're tired, so we might burn less calories. Staying up late gives us more hours in the day to consume calories, and it's easy to fall into the trap of eating to get energy to stay awake when we're tired. While not all research agrees, there is evidence that people tend to consume more calories when their sleep is restricted, and sleep-restricted individuals may choose foods that are of poorer quality compared to non-sleep restricted individuals.

"People who have poorer sleep have been found to have higher levels of the hormone ghrelin and lower levels of the hormone leptin," says Ordovás. "Ghrelin is a hormone that induces hunger. Leptin is the opposite. It sends the signal that you've had enough and can stop eating." So, a lack of sufficient, restful sleep may cause you to be hungrier during the day.

Take charge

Try these tips to improve your sleep quality and quantity:

- Watch What You Drink. Avoid caffeine in the second half of the day. Alcohol can make you drowsy but ultimately leads to restless, poor-quality sleep.
- Watch When You Eat. Eating too close to bedtime can cause heartburn or feelings of fullness that can make it hard to fall or stay asleep.
- Unwind. Avoid activities that may disturb sleep (such as exercise, computer games, stimulating TV shows, and other screens) too close to bedtime.
- Get Moving. Engaging in [physical activity](#) during the day can help you sleep better at night—a double win.

Lack of sleep has also been associated with greater insulin resistance and, ultimately, risk of type 2 diabetes. Insulin is the hormone that moves glucose out of the blood stream into the cells to fuel our bodily functions. If the cells become resistant to insulin, they aren't able to get the energy they need. The resulting complex biochemical reactions essentially boil down to this: the cells alert the brain they need more energy, and the brain sends out hunger signals to encourage us to take in more fuel (calories). So, insulin resistance can lead to increased hunger and weight gain.

Disruptions in our [natural circadian rhythms](#) are also linked to higher body weight, although whether there is a direct link has yet to be determined. "Overnight shift work is known to increase risk for [mental health problems](#) and obesity," says Ordovás. "Disrupting the natural sleep cycle induces physical and [mental stress](#), which can result in lower diet quality. Additionally, food choices are limited, and healthy foods are often less available in the middle of the night."

Stress may also play a role in the sleep/weight equation. "Stress is a driver of low-quality sleep and low-quality sleep induces stress," says Ordovás. "Many people seek out 'comfort' foods when they are stressed,

and these choices are often less healthy sugar- or salt-rich foods."

What to Do

If you find you are tired during the day, wake up feeling unrested, or fall asleep when you don't intend to, you may not be getting adequate restful sleep. "While study results vary, the latest research suggests the '[sweet spot](#)' for [sleep time](#) in adults seems to be around seven to nine hours a night," says Ordovás. "Both extremes (sleeping, say, four to five hours or twelve hours a day) may increase risk for obesity."

If you sleep poorly due to a medical issue such as [sleep apnea](#), [restless leg syndrome](#), [urinary incontinence](#), insomnia, medication side effects, or pain, work with a healthcare professional to find the best treatment for you. If stress and worry interfere with your rest, make stress management and stress reduction a priority and seek help as necessary.

Meditation, yoga, and giving yourself a chance to unwind before bedtime can be helpful. Cutting down [screen time](#) on devices just before bedtime and avoiding late night alcohol and caffeine have also been recommended. Some find "white" noise apps helpful. Getting enough good quality sleep is critical to your health, well-being, and waistline. Don't take sleep for granted.

Provided by Tufts University

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