

Poor Sleep Likely Leads to Overeating the Next Day

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STORY AT-A-GLANCE

- › Limited sleep (typically about four hours a night) caused people to eat more than they did after a full night's rest
- › On average, participants ate 385 extra calories following the poor night's sleep, including more fat and less protein
- › Sleep deprivation also increases your desire to seek out food as a reward

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After waking up from a night of poor sleep, have you ever felt like you wanted to eat everything in sight? It's not your imagination; sleep quality has been shown time and again to play a major role in what you eat the next day.

The link is so strong that if you're trying to lose a few pounds, you should absolutely be paying attention to your sleep or lack thereof. Even if you exercise regularly and diligently follow a healthy diet (which are both important in their own right), trouble sleeping could derail your weight loss efforts. Here's how.

One Night of Limited Sleep Could Make You Eat Nearly 400 Extra Calories

When researchers reviewed data from 11 sleep studies involving more than 170 people, the outcome was clear. Limited sleep (typically about four hours a night) caused people

to eat more than they did after a full night's rest.¹

On average, participants ate 385 extra calories following the poor night's sleep, including more fat and less protein. There was no effect on the participants' activity levels, which meant they had a "net positive energy balance," which could lead to weight gain over time.

There are many theories as to why skimping on sleep makes you eat more, including by increasing the "hunger hormone" ghrelin and decreasing the hormone leptin, which is involved in satiety. The featured study authors suggested, however, that **sleep deprivation** also increases your desire to seek out food as a reward.²

In fact, a 2012 study found restricted sleep (four hours a night) increased activation of brain regions sensitive to food stimuli. There was also an increase in brain activity in areas associated with reward, which helps explain why not sleeping enough encourages you, by way of your brain, to overeat.³

Lack of Sleep Gives You the Munchies

In most cases, even willpower is not enough to overcome lack of sleep's not-so-subtle influence on your appetite, as sleep restriction is associated with activation of your endocannabinoid system — the same one activated by **marijuana**.

This system is involved in modulating appetite and food intake. One study compared the effects of four nights of normal sleep (8.5 hours) with four nights of restricted sleep (4.5 hours) among 14 young adults.⁴

Levels of endocannabinoid 2-arachidonoylglycerol (2-AG), a chemical that makes foods pleasurable, were elevated when the participants were sleep deprived.⁵ On a typical day, your 2-AG levels tend to be low overnight then rise slowly until they peak in the afternoon. But in those who were sleep deprived the levels stayed elevated until late in the evening.

Correspondingly, when the participants had less sleep they reported increases in hunger and appetite and were less able to inhibit their **junk food consumption**. They ate snacks with more carbohydrates along with close to double the amount of fat and protein compared to when they were well rested.

Past research has similarly found that people who are chronically sleep-deprived and go to bed late are more susceptible to weight gain due to eating more both during the day and late at night.⁶

Poor Sleep Drives Insulin Resistance

Another revealing study showed that one night of sleep deprivation led to impairments in insulin sensitivity similar to those caused by six months of eating a poor diet.⁷

Josiane Broussard, Ph.D., project scientist at the Diabetes & Obesity Research Institute at Cedars-Sinai Medical Center in Los Angeles, California, said in a press release:⁸

"This research demonstrates the importance of adequate sleep in maintaining blood sugar levels and reducing risk for metabolic diseases like obesity and diabetes."

Insulin resistance, by the way, drives not only weight gain but also chronic diseases like cancer. This explains why men who had trouble sleeping were found to be twice as likely to develop prostate cancer compared to those who slept well.⁹

Insufficient sleep is also a contributing factor in the recurrence of breast cancer and more aggressive forms of breast cancer among postmenopausal women.¹⁰ Sleeping less than six hours per night has also been implicated as a risk factor for colorectal adenomas, which develops into cancer if left untreated.

Those who slept less than six hours a night were found to have a 50% increased risk compared to those who got seven hours or more of sleep per night.¹¹ Another reason why lack of sleep drives cancer has to do with **melatonin**, production of which is disturbed by lack of sleep.

This is extremely problematic, as melatonin inhibits the proliferation of a wide range of cancer cell types as well as triggers cancer cell apoptosis (self-destruction).

Even Children Gain Weight Due to Insufficient Sleep

With rates of overweight and obesity among children skyrocketing, addressing sleep issues is incredibly important. Even relatively small changes in sleep habits, such as increasing or decreasing sleep by 1.5 hours a night, have an impact.

For instance, in one study, children aged 8 to 11 either increased or decreased their time in bed by 1.5 hours a night for one week, then reversed the schedule for another week. When the children slept more, there were significant benefits reported, including consuming an average of 134 fewer calories per day and weighing one-half pound less.¹²

In 2011, researchers similarly found that each additional hour of sleep per night at ages 3 to 5 was associated with a 61% reduction in the risk of being overweight or obese at age 7.¹³ And, significantly, the increases in weight were due to increases in fat mass, specifically.

In 2013, separate research also showed that getting just one extra hour of sleep a night was linked to a 28% lower risk of being overweight and a 30% lower risk of being obese.¹⁴

What to Do if You're Unable to Get Enough Sleep – Optimize Light Exposure

If you're having trouble sleeping, take a quick inventory of your light exposure. Do you spend daytime indoors, with mostly artificial light exposure, and nighttime in front of more artificial lighting, including that from your TV, computer or cell phone?

Tweaking these exposures so that you have exposure to bright natural light in the morning and no exposure to blue light at night is critical to healthy sleep. In the morning,

bright, blue light-rich sunlight signals to your body that it's time to wake up. At night, as the sun sets, darkness should signal to your body that it's time to sleep.

Ideally, to help your circadian system reset itself, get at least 10 to 15 minutes of natural light first thing in the morning. This will send a strong message to your internal clock that day has arrived, making it less likely to be confused by weaker light signals later on.

Then, around solar noon, get another "dose" of at least 30 minutes' worth of sunlight. A full hour or more would be even better. If your schedule is such that you have to get up and arrive at work before sunrise, aim to get at least that half hour of **bright sunlight** sometime during the day.

In the evening when the sun begins to set, put on amber-colored glasses that block blue light. Also, dim your lights and turn off electronic devices to reduce your exposure to light that will stifle your melatonin production.

After sundown, shift to a low-wattage bulb with yellow, orange or red light if you need illumination. A salt lamp illuminated by a 5-watt bulb is an ideal solution that will not interfere with your melatonin production.

If you'll be using a computer or smart phone in the evening, install blue-light-blocking software like f.lux, which automatically alters the color temperature of your screen as the day goes on, pulling out the blue wavelengths as it gets late. However, as mentioned, the easiest solution is to put on **blue-light-blocking glasses** so you get no exposure to blue light after sunset.

A Precaution Before You Bask in Sunlight

Sunlight exposure is the best way to optimize your circadian rhythm, as well as your vitamin D levels. However, there are some precautions to remember, especially if you're eating a diet high in linoleic acid (LA), an omega-6 fat that is one of most pernicious toxins in the Western diet.

The issue with LA is that it becomes embedded in your skin, and when it's exposed to sunlight, inflammation and DNA damage occurs. To prevent this from happening, I strongly recommend avoiding sun exposure during peak noon until you've eliminated all seed oils and processed foods from your diet for four to six months.

Over time, your body will rid itself of LA, and you'll be able to resume getting sunlight exposure at peak noon. But during the interim period, you should avoid intense sunlight at noon, and only get sun exposure preferably during early morning and late afternoon (a few minutes at a time) when the ultraviolet rays will do the least amount of damage.

How Many Hours of Sleep Are Enough?

If you jump out of bed in the morning feeling well-rested and alert, you're getting enough sleep. If you're sluggish and suffer from daytime fatigue, you could probably use more. The exact number of hours an individual needs to sleep varies, depending on factors like age and health status.

In February 2016, the U.S. Centers for Disease Control and Prevention (CDC) reported that 1 in 3 U.S. adults don't get enough sleep.¹⁵ In this case, "enough" sleep was defined as seven or more hours per night, but many adults need closer to eight hours per night (and thus lack of sleep affects even more than one in three adults).

If you're not sure how long you're sleeping each night, a wearable fitness tracker will help by monitoring your [actual time spent asleep](#) (not the time you spend lying awake) so you can adjust your schedule accordingly. If you need more sleep and you have a set wake-up time, you'll need to go to bed earlier.

In addition to adjusting your light exposures, proper "sleep hygiene" is also important. Toward that end, to achieve more restful, restorative sleep I suggest you read through my full set of [33 healthy sleep guidelines](#) for all of the details.

Sources and References

- [Forbes November 2, 2016](#)

- ¹ European Journal of Clinical Nutrition November 2, 2016
- ² The New York Times November 2, 2016
- ³ Am J Clin Nutr. April 2012 vol. 95 no. 4 818-824
- ⁴ Sleep. 2016 Mar 1;39(3):653-64
- ⁵ Reuters March 3, 2016
- ⁶ Sleep. 2013;36(7):981-990
- ^{7, 8} Findings presented at The Obesity Society Annual Meeting, November 5, 2015, Los Angeles, CA
- ⁹ Cancer Epidemiol Biomarkers Prev. May 2013 22; 872
- ¹⁰ Science Daily August 27, 2012
- ¹¹ Cancer. February 15, 2011; 117(4): 841–847
- ¹² Pediatrics December 1, 2013
- ¹³ BMJ 2011;342:d2712
- ¹⁴ Pediatric Obesity September 7, 2012
- ¹⁵ U.S. Centers for Disease Control and Prevention February 18, 2016