

# Sleep More, Weigh Less?

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## STORY AT-A-GLANCE

- › Research shows the longer a person slept, the smaller their waist and lower their BMI were likely to be
- › People who slept for an average of six hours a night had a waist circumference more than 1 inch (3 centimeters) larger than those who slept for nine hours a night
- › Shorter sleep was also linked to lower levels of beneficial HDL cholesterol, disruptions to thyroid hormones and increases in inflammatory markers

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It's estimated that 73.6% of U.S. adults aged 20 and over are overweight and obese. Among children, 22.2% of 12- to 19-year-olds are considered obese, along with 20.7% of 6- to 11-year-olds and 12.7% of 2- to 5-year-olds.<sup>1</sup> Exercise and, particularly, diet, definitely play a role in this epidemic, but there's another often-overlooked factor that may help people to keep their weight in check with little added effort. In fact, it requires nothing but getting more sleep.

Like overweight and obesity, insufficient sleep is a public health problem in the U.S. — and it could be that the two are related. The U.S. Centers for Disease Control and Prevention (CDC) reported that 50 million to 70 million adults have sleep or wakefulness disorder, while more than 35% said they sleep fewer than seven hours during a typical 24-hour period.<sup>2</sup>

Meanwhile, this lack of sleep is having serious consequences, like unintentionally falling asleep during the day (reported by 38% of survey respondents) or nodding off while driving (reported by nearly 5%). Your weight, however, will also suffer.

## **Sleeping Well Associated with Smaller Waist, Lower Weight**

U.K. researchers looked into the connection between how long you sleep (sleep duration), diet and metabolic health among more than 1,600 adults.<sup>3</sup> Past research has linked not enough sleep with an increased risk of **metabolic diseases**, including obesity, and this study found similar results. Sleep duration was negatively associated with body mass index (BMI) and waist circumference, which means the longer a person slept, the smaller their waist and lower their BMI were likely to be.

Specifically, people who slept for an average of just six hours a night had a waist circumference more than 1 inch (3 centimeters) larger than those who slept for nine hours a night.<sup>4</sup> Shorter sleep was also linked to lower levels of beneficial HDL cholesterol,<sup>5</sup> and researchers noted, "[O]ur findings show that short-sleeping U.K. adults are more likely to have obesity, a disease with many comorbidities."

Along these lines, a study published in the journal *Sleep* even found that sleeping in longer on weekends — also known as "catch up sleep" (CUS) — positively impacts your weight. On average, the group of participants who slept up to two hours longer on weekend days than weekdays had a significantly lower BMI than the non-CUS group.<sup>6</sup> Lack of sleep influences hormone levels, including increasing the "hunger hormone" ghrelin and decreasing leptin, which is involved in satiety.

By activating your endocannabinoid system, which is involved in modulating appetite and food intake, sleep deprivation even gives you the munchies, similar to marijuana use. In the featured study, while the researchers hypothesized that shorter sleep may lead to increased unhealthy eating, they found no such link in this case.

## **How Does Sleep Affect Your Waistline?**

Sleep is intricately involved in your body's ability to function properly. Skimp on it, and your self-control will suffer, as will your willpower to make healthy eating choices. On a biological level, however, lack of sleep also disrupts important hormones – like, as mentioned, ghrelin and leptin – and metabolic function. Losing as little as 30 minutes of sleep each night already disrupts your metabolism enough to cause weight gain.

In fact, each half-hour of sleep debt incurred during weeknights raised one study's participants' risk for obesity and **insulin resistance** by 17% and 39% respectively after one year.<sup>7</sup> What this means is that if you need eight hours of sleep but consistently only get seven, your risk of obesity goes up by about 34% and simultaneously jacks up your chances of insulin resistance – which is a hallmark of most chronic diseases, including Type 2 diabetes – by 78%.

In another revealing study, people who slept only five hours a night gained nearly 2 pounds a week while consuming extra calories, primarily late at night. On the contrary, people who slept nine hours a night maintained their weight and tended to eat fewer refined carbohydrate foods and unhealthy fats.<sup>8</sup> The results are true even among children, which research revealed that children with the least amount of sleep are 4.2 times more likely to be obese.<sup>9</sup>

If you're trying to lose weight, getting adequate sleep will make or break your results, with research from the University of Chicago showing that dieters who slept for 8.5 hours lost 55% more body fat than dieters who slept 5.5 hours.<sup>10</sup> "Lack of sufficient sleep may compromise the efficacy of typical dietary interventions for weight loss and related metabolic risk reduction," the researchers wrote, continuing:<sup>11</sup>

*"The neuroendocrine changes associated with sleep curtailment in the presence of caloric restriction, however, raise the possibility that lack of sufficient sleep may compromise the efficacy of commonly used dietary interventions in such individuals. For instance, higher ghrelin concentrations may facilitate the retention of fat and increased hunger could compromise adherence to caloric restriction."*

# How to Gauge if Your Health Is at Risk from Not Enough Sleep

Worldwide, the average sleep duration on weekdays has declined by about 37 minutes over the last 10 years.<sup>12</sup> Meanwhile, an estimated 83.6 million adults in the U.S. are **sleep-deprived**.<sup>13</sup>

In addition to weight gain, too little sleep has been linked to Type 2 diabetes and metabolic syndrome. The featured study also revealed that short sleep also interferes with thyroid hormones and raise C-reactive protein levels (CRP), which promotes inflammation and increase the risk of Type 2 diabetes.<sup>14</sup>

Aside from chronic disease, sleep deprivation has the same effect on your immune system as physical stress or illness,<sup>15</sup> which explains why lack of sleep is tied to an increased risk of numerous chronic diseases and acute illnesses like colds and flu. In fact, research shows adults who sleep less than six hours a night have a four times higher risk of catching a cold when directly exposed to the virus than those who get at least seven hours.<sup>16</sup>

**Sleeping less than five hours per night** resulted in a 4.5 times higher risk. The study found that sleep was more important than any other factor when it came to protecting against the cold virus, including stress levels, age and smoking.

You probably already know if you're sleep-deprived, but in case you're not sure, the late Professor Emeritus Nathaniel Kleitman, physiologist and sleep researcher, came up with one of the simplest tests to determine if you're sleep-deprived – and as a pioneer in sleep research, he was well qualified to know.

Here's how it works – In the early afternoon, grab a spoon and head off to your darkened bedroom to take a nap. Place a metal tray on the floor beside your bed, and hold the spoon over the tray as you attempt to fall asleep. Be sure to check the time as well. Next, when you inevitably fall asleep and the spoon crashes down onto the tray, waking you up, immediately check the time again and note how much time has passed.

If you fell asleep within five minutes, it means you're severely sleep-deprived, according to Kleitman. If it took you 10 minutes to fall asleep, this is still a sign that you could use more sleep. If, however, you managed to stay awake for 15 minutes or more before falling asleep, you're probably well-rested.<sup>17</sup> If you don't happen to have a spoon and metal tray handy, you can still take this test by setting an alarm for 15 minutes to see if you fall asleep before it goes off.

## **Most Adults Need Eight Hours of Sleep a Night**

Sleep needs vary depending on your age, activity levels and health status, but the studies are quite clear — and most experts agree — that eight hours of sleep a night is ideal. Keep in mind, however, that eight hours of sleep is not eight hours in bed. If you go to bed at 10 p.m. and get out of bed at 6 a.m., you might say you've slept for eight hours. In reality, you probably spent at least 15 to 30 minutes falling asleep and may have woken during the night one or more times.

With the advent of fitness-tracking devices, however, we now have access to actual sleep data (and more) from wristband users. The data is quite useful on a personal level and will help you determine when you need to get into bed to realize a full eight hours of sleep. If your problem sleeping is less about when to go to sleep and more about having trouble sleeping once you're in bed, turn your attention to sleep hygiene.

Perhaps the most important natural "trick" of all for [improving your sleep](#) is to make sure you're getting proper exposure to bright light during the day and no exposure to blue light at night. 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. You can also dim your lights and turn off electronic devices to reduce your exposure to light, which stifles your melatonin production. Better still, swap out [LEDs](#) for incandescent or low-voltage incandescent halogen lights. After sundown, you can also 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. Candlelight also works well. If you've already optimized your light exposure and are still struggling with sleep, see my [33 healthy sleep secrets](#) for a more comprehensive list of strategies for a better night's rest.

## Sources and References

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- <sup>2</sup> National Council on Aging, ["Sleep Statistics and Facts"](#)
- <sup>3, 12, 14</sup> [PLOS One July 27, 2017](#)
- <sup>4</sup> [Forbes July 30, 2017](#)
- <sup>5</sup> [The Telegraph July 28, 2017](#)
- <sup>6</sup> [Sleep May 19, 2017 \(Epub ahead of print\)](#)
- <sup>7</sup> [Endocrine Society, March 5, 2015](#)
- <sup>8</sup> [Proceedings of the National Academy of Sciences of the USA April 2, 2013;110\(14\):5695-5700](#)
- <sup>9</sup> [Adolesc Med State Art Rev. 2010 Dec;21\(3\):480-90, viii-ix](#)
- <sup>10, 11</sup> [Ann Intern Med. 2010 Oct 5;153\(7\):435-441](#)
- <sup>13</sup> [CDC, February 19, 2016](#)
- <sup>15</sup> [Sleep 2012;35\(7\):933-940](#)
- <sup>16</sup> [Sleep September 2015;38\(9\):1353-1359](#)
- <sup>17</sup> [Independent October 25, 2016](#)