

Here's What Losing Sleep Does to Your Heart

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STORY AT-A-GLANCE

- › Significant heart strain, a precursor to heart problems, was noted following sleep deprivation in emergency medical workers
- › Other concerning changes, including an increase in blood pressure, heart rate and thyroid hormones, which is indicative of a stress response, were also noted following lack of sleep
- › People who sleep less than seven hours a night have an increased risk of heart disease, and this is true regardless of other factors that influence heart health, like age, weight, smoking and exercise habits

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Losing sleep is detrimental to your health, and research continues to pinpoint exactly why your body suffers when deprived of enough quality sleep. Many are at risk, including those who struggle with [insomnia](#) as well as people who work long, erratic hours or night shifts. Emergency medicine personnel often fall into the latter category, and research revealed the toll it takes on their hearts.

In a 2016 study, researchers from the University of Bonn in Germany took images of radiologists' hearts before and after a 24-hour shift, during which they got only about three hours of sleep. Significant heart strain, a precursor to heart problems, was noted following the sleep deprivation.¹

Other concerning changes, including an increase in blood pressure, heart rate and thyroid hormones, which is indicative of a stress response, were also noted.

What Happens to Your Heart When You Don't Get Enough Sleep?

People who sleep less than seven hours a night have an increased risk of heart disease,² and this is true regardless of other factors that influence heart health, like age, weight, smoking and exercise habits. According to the National Sleep Foundation (NSF):³

"An observational study of over 400,000 people found strong associations between sleeping problems and heart failure.

In that study, people who slept less than seven hours per night had an elevated risk of heart failure. Heart failure was also more common in people who had other indicators of unhealthy sleep including insomnia symptoms, daytime sleepiness, snoring, and being an evening person. The more of these signs of unhealthy sleep that one person had, the higher their likelihood of heart failure."

It's no coincidence, meanwhile, that people who struggle with sleep apnea, which causes frequent nighttime awakenings, often have heart troubles.

Women with sleep apnea tend to have higher levels of the protein troponin T, which is a marker for heart damage, and are more likely to have an enlarged heart, which is a risk factor for heart disease.⁴ This also increases the risk of high blood pressure and heart problems.

However, it's not only people with a sleep disorder like sleep apnea who are at risk. Sleep disruptions due to insomnia, poor sleep habits or work schedules also puts your heart health at risk.

One study found that even among children, shorter sleep duration is associated with increased arterial stiffness, a risk factor for heart disease and stroke.⁵

Skimping on Sleep Quadruples Your Risk of Car Accidents

When you don't get enough sleep, your problem-solving skills dwindle and your reaction time slows. Long lapses in attention and decreased response accuracy, which are especially problematic while driving, also occur.

In a report released by the AAA Foundation for Traffic Safety, researchers compared driving drowsy to driving with a blood alcohol concentration considered legally drunk.⁶

Lack of sleep, even by one or two hours, nearly doubled study participants' risk of a car accident the following day. If sleep deprivation increased, with participants sleeping just four or five hours a night, their risk of a car crash quadrupled.⁷ According to the AAA Foundation for Traffic Safety:⁸

"Previous research by the AAA Foundation for Traffic Safety has estimated as many as 7% of all crashes, 13% of crashes that result in hospital admission and 21% of fatal crashes involve driver drowsiness."

Sleep Deprivation Is a Disaster Waiting to Happen

Sleep deprivation has played a role in many catastrophic events, including Chernobyl, Three-Mile Island, the Challenger explosion and more.

It's not surprising, since it's well-known to cause blunted reactions, but researchers have also found lack of sleep to be particularly problematic for decision-making involving uncertainty and unexpected change. They concluded:⁹

"Blunted reactions to feedback while sleep-deprived underlie failures to adapt to uncertainty and changing contingencies. Thus, an error may register, but with diminished effect because of reduced affective valence of the feedback or because the feedback is not cognitively bound with the choice."

This has important implications for understanding and managing sleep loss-induced cognitive impairment in emergency response, disaster management, military operations and other dynamic real-world settings with uncertain outcomes and imperfect information."

Case in point, when the Chernobyl reactor melted down in 1986, the engineers involved in the disaster had worked 13 hours or more before the meltdown. Likewise, the space shuttle Challenger exploded after its launch in January 1986, killing all seven on board.¹⁰

Managers involved in the launch had slept just two hours before reporting to work at 1 a.m., and the Presidential Commission on the accident noted:

"The willingness of NASA employees in general to work excessive hours, while admirable, raises serious questions when it jeopardizes job performance, particularly when critical management decisions are at stake."

Even 'Minor' Sleep Deprivation Is Harmful

What is perhaps most surprising is that it takes only slight changes in sleep to seriously alter your brain, body and behavior. As the AAA report noted, even sleeping one less hour per night increases your risk of a car accident the next day.

Daylight Saving Time (DST), the practice of moving clocks ahead one hour in the summer months and returning them back an hour in the winter, is also revealing in this regard.

In 2014, research presented at the annual scientific sessions of the American College of Cardiology revealed that the risk of having a **heart attack** on the Monday following DST in the spring (when one hour of sleep is lost) rose by 25% compared to other Mondays.

At the end of the summer, when clocks are turned back one hour so that people get an extra hour of sleep, the risk of heart attack fell by 21%.¹¹

In addition, a Washington University neuroscientist told CBS News that adjusting clocks forward one hour corresponds with a significant increase in traffic accidents and heart attacks over the next two to three days.^{12,13}

Research also shows that daylight saving time leads to increases in workplace injuries (frequency and severity) as well as delays in reaction time that affect performance.¹⁴

Trying to Function on Too Little Sleep Is Like Being Drunk

You probably wouldn't overconsume alcohol and then attempt to carry out your job or drive your car. Yet, virtually everyone has tried to function on too little sleep. Alarmingly, research continues to show that the two are basically the same.

One University of Michigan study (U-M), for instance, found even six hours of sleep a night is too little and leaves you functionally impaired, similar to being drunk. U-M mathematician and study author Olivia Walch said:¹⁵

"It doesn't take that many days of not getting enough sleep before you're functionally drunk ... Researchers have figured out that being overly tired can have that effect.

And what's terrifying at the same time is that people think they're performing tasks way better than they are. Your performance drops off but your perception of your performance doesn't."

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.¹⁶ 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 1 in 3 adults).

Beyond harming your heart and raising your risk of serious accident and injury, research has found that when participants cut their sleep from 7.5 to 6.5 hours a night, there were increases in activity in genes associated with inflammation, immune excitability, diabetes, cancer risk and stress.¹⁷ Interrupted or impaired sleep also:

- Increase your risk of cancer
- Harm your brain by halting new neuron production. Sleep deprivation increases levels of corticosterone (a stress hormone), resulting in fewer new brain cells being created in your hippocampus
- Contribute to a pre-diabetic, insulin-resistant state, making you feel hungry even if you've already eaten, which leads to weight gain

- Contribute to premature aging by interfering with your growth hormone production, normally released by your pituitary gland during deep sleep (and during certain types of exercise, such as high-intensity interval training)
- Increase your risk of dying from any cause

Do This Now for Better Sleep Tonight

If you have trouble sleeping, now is the time to take action to get a better night's rest. 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.

However, remember that if you've been eating a diet that's loaded with seed oils, you need to be extra cautious with sun exposure. Seed oils contain linoleic acid (LA), which is the most pernicious ingredient in our food supply. When sunlight interacts with the seed oils in your skin, the oil breaks down and causes inflammation and DNA damage. Hence, it's crucial to avoid sun exposure unless you've eliminated these seed oils from your diet for at least four to six months.

In the evening when the sun begins to set, put on amber-colored glasses that [block blue light](#). You can also dim your lights (whether they're LED, incandescent or compact

fluorescent lamps [CFLs]) and turn off electronic devices to reduce your exposure to light that stifles your melatonin production.

Better still, swap out LEDs for incandescent or low-voltage incandescent halogen lights (and please be sure to read my article on the [dangers of LED lights](#)).

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. Candle light 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.

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