

Sleep, the Master Regulator of Health

A sleep deficit or disruption can create wide-ranging havoc, compromising our immune system, causing inflammation, and damaging our genes. Losing just an hour of sleep a night increases risk of cancer, heart attack, stroke and type 2 diabetes. Lack of sleep can also lead to memory loss, negatively affect people's reflexes and decision-making skills, cause hearing loss and psychiatric disease, and impede sexual function.

And it's not just people who suffer from sleep disorders like insomnia and sleep apnea who have to worry, at least seven out of 10 Americans aren't getting enough sleep and they're at risk for serious health problems, as well. People devalue sleep and are completely unaware of what happens to them when they have a deficit. As a society we are so habituated to low levels of sleep that most of us don't know what it feels like to be fully alert and awake.

We sacrifice sleep for work, entertainment or some other lifestyle choice. In large part, we do this because it can take months or even years for a disease caused by sleep deficit to fully emerge.

Inflammation Nation. Researchers have traced sleep apnea to cognitive and psychiatric impairments, high cholesterol and atherosclerosis, high blood pressure, obesity, and type 2 diabetes, to name a few. These apnea findings were applicable to adults who were burning the candle at both ends, whether they had apnea or not. Disturbances in sleep lead to a surge of pro-inflammatory molecules — from dangerous cytokines to C-reactive protein — that cause massive damage throughout the body. For example, in adipose tissue (body fat), these pro-inflammatory molecules set the stage for obesity and type 2 diabetes; in the cardiovascular system, heart disease; in the brain, neuronal loss.

Fortunately, it's possible to reverse the damage caused by sleep loss. The pro-inflammatory state caused by sleeplessness makes those who are already at genetic risk for certain maladies far more vulnerable to triggering them into an active disease state.

The Weight of the Matter. Researchers have found that your risk of weight gain can be influenced almost as much by your sleep as by your eating habits. Two hormones that regulate appetite change radically when you sleep less: **Leptin**, which signals the brain to feel full and stop eating, decreases by 18 percent, and **ghrelin**, the hunger hormone, increases by 28 percent. Sleep deficits are capable of triggering a damaging hormone cascade. Researchers report that those who regularly sleep just four hours per night were 73 percent more likely to become obese than those sleeping between seven and nine hours. (Even people sleeping a more respectable six hours were 23 percent more likely to become obese.)

Sleep loss has been shown to trigger the area of the brain associated with hunger and the desire to eat. And sleep restriction disrupts the daily drop-off of the damaging stress hormone, **cortisol**, which should be at its lowest levels right before bedtime and which is implicated in weight gain.

While You're Not Sleeping. Anyone who's ever pulled an all-nighter to meet a deadline or study for a test knows the day-after results aren't pretty: The body feels sluggish, the mind fogged or frenetic. Recent research shows that a chronic lack of sleep is far more damaging than previously assumed by many experts. Sleep deficits as small as an hour a night can increase the risk of a wide range of conditions. Why? Because when we don't get enough sleep, our immune systems go into overdrive, which causes systemic inflammation and turns on dangerous genetic switches.

Everyone's immune system is unique, so how sleep deprivation affects you might be different from how it affects another person. Here are just some of the ways chronic skimping on sleep can affect your health:

- Increased food cravings and hunger, disrupted metabolism, weight gain and obesity
- High blood pressure, Insulin resistance, type 2 diabetes, heart disease
- Cancer
- Neuropsychiatric disorders, impaired alertness and cognition, and headaches
- Vision problems, including blurred vision, floppy eyelid syndrome, glaucoma, even temporary blindness
- Increased levels of cortisol, a hormone associated with stress
- Difficulty with sexual functioning
- Hearing loss
- Muscle weakness and decreased athletic performance
- Skin problems and rashes, including eczema as well as hair

Healthy Sleep Tips

Healthy sleep habits can make a big difference in your quality of life. Having healthy sleep habits is often referred to as having good “sleep hygiene.” Try to keep the following sleep practices on a consistent basis:

1. **Stick to the same bedtime and wake up time, even on the weekends.** This helps to regulate your body's clock and could help you fall asleep and stay asleep for the night.
2. **Practice a relaxing bedtime ritual.** A relaxing, routine activity right before bedtime conducted away from bright lights helps separate your sleep time from activities that can cause excitement, stress or anxiety which can make it more difficult to fall asleep, get sound and deep sleep or remain asleep.
3. **Avoid naps, especially in the afternoon.** Power napping may help you get through the day, but if you find that you can't fall asleep at bedtime, eliminating even short catnaps may help.
4. **Exercise daily.** Vigorous exercise is best, but even light exercise is better than no activity. Exercise at any time of day, but not at the expense of your sleep.
5. **Evaluate your room.** Design your sleep environment to establish the conditions you need for sleep. Your bedroom should be cool – between 60 and 67 degrees. Your bedroom should also be free from any noise that can disturb your sleep. Finally, your bedroom should be free from any light. Check your room for noises or other distractions. This includes a bed partner's sleep disruptions such as snoring. Consider using blackout curtains, eye shades, ear plugs, "white noise" machines, humidifiers, fans and other devices.
6. **Sleep on a comfortable mattress and pillows.** Make sure your mattress is comfortable and supportive. The one you have been using for years may have exceeded its life expectancy – about 9 or 10 years for most good quality mattresses. Have comfortable pillows and make the room attractive and inviting for sleep but also free of allergens that might affect you and objects that might cause you to slip or fall if you have to get up during the night.
7. **Use bright light to help manage your circadian rhythms.** Avoid bright light in the evening and expose yourself to sunlight in the morning. This will keep your circadian rhythms in check.
8. **Avoid alcohol, cigarettes, and heavy meals in the evening.** Alcohol, cigarettes and caffeine can disrupt sleep. Eating big or spicy meals can cause discomfort from indigestion that can make it hard to sleep. It is good to finish eating at least 2-3 hours before bedtime.
9. **Wind down.** Your body needs time to shift into sleep mode, so spend the last hour before bed doing a calming activity such as reading. For some people, using an electronic device such as a laptop can make it hard to fall asleep, because the particular type of light emanating from the screens of these devices is activating to the brain. If you have trouble sleeping, avoid electronics before bed or in the middle of the night.
10. **Use your bed only for sleep and sex.** This will strengthen the association between bed and sleep. It is best to take work materials, computers and televisions out of the sleeping environment. If you associate a particular activity or item with anxiety about sleeping, omit it from your bedtime routine.

If you're still having trouble sleeping, don't hesitate to speak with your doctor or to find a sleep professional as you might have an underlying medical condition. You may also benefit from recording your sleep in a Sleep Diary to help you better evaluate common patterns or issues you may see with your sleep or sleeping habits.

Be your best

A good night's sleep sharpens your focus and keeps your mind agile.

Take heart

Cheating your sleep may lead to chronic conditions such as heart disease, high blood pressure and diabetes.

Slim down

Solid sleep may curb daytime food cravings and help you lose weight.

Live longer

People who get just enough sleep tend to live longer.

Drive safely

Sleepiness causes 8,000 fatal car crashes each year and half a million injuries.

Fight sickness

A full night's sleep aids your immune system so you're less likely to get sick.

Study and learn

Even a brief nap can boost the brain's ability to absorb and remember information.

Up your game

Peak performance on the court or field requires a good night's sleep.

Look healthy

New skin cells form as we sleep, and that means a fresher face in the morning.

Stay happy

Over time, inadequate sleep can up your risk of depression

Recommended Books

"Why We Sleep" by Matthew Walker