

1. **Mark your confusion.**
2. **Show evidence of a close reading.**
3. **Write a 1+ page reflection.**

Sacrificing Sleep? This Is What It Will Do to Your Health

Source: Sandee Lamott, CNN.com, August 17, 2017

We are one groggy, cranky, sleep-deprived population.

Depending on our age, we are supposed to get between seven and 10 hours of sleep each night. But according to the US Centers for Disease Control and Prevention, a third of us get fewer than seven hours of sleep per night. In addition, 50 million to 70 million Americans suffer from sleep disorders such as sleep apnea, insomnia and restless leg syndrome, which can ruin a good night's shuteye. And we're not alone. In bedrooms around the globe, men, women and children are tossing and turning. According to World Sleep Day statistics, sleep deprivation is threatening the health of up to 45% of the world's population.

Risking life and money

Science has linked poor slumber with high blood pressure, a weakened immune system, weight gain, a lack of libido, mood swings, paranoia, depression and a higher risk of diabetes, stroke, cardiovascular disease, dementia and some cancers.

Car crashes, industrial disasters, and medical and occupational errors also increase as we tire, not to mention a decrease in work productivity and efficiency. A study by RAND Europe found that the United States loses an estimated \$411 billion each year from workers who sleep fewer than six hours a night. That's about 2.28% of US gross domestic product. Japan comes next, with \$138 billion, or 2.92% of GDP, followed by Germany (\$60 billion; 1.56% of GDP) and the United Kingdom (\$50 billion; 1.86% of GDP).

But guess what would happen if those same people added an hour of pillow time? The US could add \$226.4 billion back to the economy, the study said, and Japan would recover \$75.7 billion, while Germany and the UK would be blessed with an additional \$34.1 and \$29.9 billion.

Consequences on your body

Exactly how does a lack of sleep affect the body? There are the obvious signs: irritation, moodiness, dull reflexes and a fuzzy mind. As you can imagine, how those continue to affect us depends on whether the deprivation is short-lived or long-term and chronic.

Weakened reflexes

Studies show that after 17 to 19 hours without sleep, you'll be functioning as if you've been drinking enough to raise your blood alcohol concentration to 0.05%. Skip a full 20 to 25 hours of sleep, and you'll soon be at 0.1% -- well over the US legal driving limit of 0.08. In other words, a lack of sleep for one night can impair your reflexes and decision-making to the same extent as being over the limit.

But sleeping less than the recommended amount on a regular basis can be almost as bad. A lab-based sleep study found that people who were sleeping fewer than six hours a night for two weeks -- and who thought they were doing just fine -- functioned as badly on cognitive and reflex tests as people who were deprived of sleep for two full nights. This is evident in traffic statistics. The National Highway Traffic Safety Administration estimates that at least 100,000 accidents reported to US police are the result of drowsy driving. This results in an estimated 1,550 deaths, 71,000 injuries and \$12.5 billion in monetary losses, according to the National Sleep Foundation.

An unfocused mind

While you sleep, your brain is busy. It's preparing for the next day, sorting your experiences and making new pathways for learning. To capture newly acquired information, absorb fresh skills and

form key memories -- as well as to retrieve them later -- you need plenty of sleep time to let your brain do its work. A lack of sleep therefore impacts your ability to pay attention, learn new things, be creative, solve problems and make decisions.

A chronic lack of sleep is also closely tied to anxiety and depression, as the body struggles to cope with the stress of sleepiness. Some studies have found a connection between sleep apnea, a disorder with which you actually stop breathing for up to a minute, and cognitive impairment, and insomnia has been associated with reduced brain size. There's even growing evidence that poor sleep early in life can lead to the development of the plaques and tangles that cause Alzheimer's and other kinds of dementia.

A study published this month in the journal *Brain* found that healthy middle-age adults who slept badly for just one night produced an abundance of the protein beta amyloid, responsible for the plaques characteristic of Alzheimer's. A week of disrupted sleep upped the amount of tau, another protein responsible for the tangles associated with Alzheimer's, frontal lobe dementia and Lewy body disease. If that's not enough, a study in mice by the University of Pennsylvania found that prolonged periods without sleep actually killed brain cells.

Continued sleep deprivation can also lead to wide swings in mood, increasing paranoia and even hallucinations. The chronically sleep-starved will also become less able to tolerate pain and resist coercion, which makes it one of the military's favorite tools for torture.

Poor repairs

Deep sleep, the kind that comes only after a full cycle, is necessary for the body to release hormones designed to repair cells and build tissue in the body and brain, especially in children and teens. Unfortunately, although preteens and teens need the most sleep of any age group -- at least nine hours a night -- they are the least likely to get enough rest.

Early start times for school, combined with today's technology lures, high stress levels and late-to-bed habits, are creating a nation of sleep-starved youngsters. Over 90% of US high school students are chronically sleep-deprived, with 20% getting fewer than five hours a night, according to a Sleep in America poll. According to a study from the CDC, this sets teens up to engage in more risky behavior, such as drinking or texting while driving or not wearing a seat belt or helmet, compared with those who get at least nine hours a night. Previous studies on teen sleep found that fewer than eight hours a night was also associated with obesity, migraines, substance abuse, lack of exercise, sexual activity, feelings of depression and thoughts of suicide.

The teen sleep problem is so bad that in 2014, the American Academy of Pediatrics issued a policy statement asking schools across the country to delay the start of middle and high school to no earlier than 8:30 a.m. Even though some schools are heeding that call, the advocacy group Start School Later says that more than four in five start classes earlier than the recommended time.

Weight gain

Studies show that poor sleep leads to an increase in hunger and weight gain. That's partly due to the connection between sleep and the peptides that regulate your appetite: ghrelin and leptin. Ghrelin, which makes you hungry, goes up when you don't get enough sleep. At the same time, leptin, which sends "full" signals to the brain, decreases. A lack of sleep is known to increase stress, which pumps up the body's primary stress hormone, cortisol. Among other things, cortisol helps control blood sugar levels and regulates metabolism. During times of stress, the increased cortisol causes higher insulin levels, which in turn drops your blood sugar and results in cravings for fatty, sugar-filled foods.

Shorter, unhealthier lifespan

Getting less than the recommended amount of sleep each night on a regular basis raises your risk of dying. In a longitudinal study of 10,308 British civil servants published in 2007, researchers found that those who reduced their sleep from seven to five hours or fewer a night were almost twice as likely to die from all causes, especially cardiovascular disease.

Here's the worst news: As you head toward death, your chances of developing a major disease or medical condition are also much higher if you don't get enough sleep. That's because during sleep, your body is literally repairing and restoring itself on a cellular level. Studies show a significant association between a lack of sleep and cardiovascular disease. Weight gain can lead to obesity and type 2 diabetes. Your immune system takes a hit, making you more vulnerable to colds, flu and all sort of viruses and other infectious diseases.

It may even mess with your genes. A small study of 15 men looked at the impact of sleep deprivation on "clock genes" that regulate circadian rhythm. They found that the loss of a single night's sleep could alter those genes in key metabolic tissues. Whether that change is permanent is unknown.

Changing your sleep habits

The good news is that you can do something about your sleep deficit. You can train your brain to seek better sleep just as you train it to learn and accomplish other skills. One of the first tasks is to set up your sleep environment and establish a relaxing bedtime routine. It's that repetition that will train your brain to recognize that its time to relax and sleep.

Cool temperatures

Start with the bedroom. Make sure your bed and pillows are comfortable and the room is cool: Between 60 and 67 degrees is best. Don't watch TV or work in your bedroom; you want your brain to think of the room as only for sleep.

Mood lighting

Be sure to eliminate all bright lights, as even the blue light of cellphones or laptops can be disruptive. If that's hard to accomplish, think about using eye shades and blackout curtains to keep the room dark. Try to eliminate disturbing sounds as well. Earplugs or white noise machines can be very helpful, but you can create your own with a humidifier or fan. During the day, try to get good exposure to natural light, as that will help regulate your circadian rhythm.

Develop a routine

Then, establish a bedtime routine you can follow each night. Taking a warm bath or shower, reading a book, listening to soothing music, meditating or doing light stretches are all good options.

Food and drink to avoid

Other suggestions for good sleep include avoiding stimulants such as nicotine or coffee after midafternoon, especially if you have insomnia. Alcohol is another no-no. You may think it helps you doze off, but you are more likely to wake in the night as your body begins to process the spirits.

Get moving

Exercise is key to promoting good sleep. According to the National Sleep Foundation, as little as 10 minutes a day of walking, biking or other aerobic exercise can "drastically improve nighttime sleep quality."

Follow all these steps, and you'll be well on your way to closing your sleep deficit and improving your health.

Possible Response Questions:

- Reflect on your sleeping habits. Are they healthy? Explain.
- What might you do to improve your sleeping habits? Explain.
- Discuss a "move" made by the writer in this piece that you think is good/interesting. Explain.
- Pick a passage from the article and respond to it.