

Risks of Short Sleeping

Recent Studies Expose Dangers in Chronic Sleep Deprivation



March 30 — Tens of millions of Americans suffer from a condition that until recently, most health professionals did not take seriously. It can accelerate the aging process, lead to obesity and increase the risk of some diseases. It's garden-variety sleep deprivation and it might be more of a problem than you think.

For the first time, scientists are looking seriously at what happens to our bodies when we live on five, six or seven hours of sleep a night and what they're finding is shocking.

Upsets Blood Sugar

Dr. Eve Van Cauter is a sleep science trailblazer whose research team at the University of Chicago recently published the first study to specifically examine the physical health impact of ordinary sleep deprivation. She calls the impact of sleep debt on the body, "astonishing."

After four hours of sleep for six consecutive nights, healthy young men had blood test results that nearly matched those of diabetics. Their ability to process blood sugar was reduced by 30 percent, they had a huge drop in their insulin response, and they had elevated levels of a stress hormone called cortisol, which can lead to hypertension and memory impairment.

"We had results that were more compatible with individuals 60-years-old than with young, fit men in their early '20s," Van Cauter explains.

Perhaps equally incredible is that until Van Cauter's study, most scientists believed that sleep debt did not cause any significant physical problems. "The concept that sleep is for the mind not the body prevailed and so no one was really looking at the possibility that sleep loss has an impact on health," Van Cauter says.

Though subjects in the study slept only four hours a night, Van Cauter says sleeping six or seven hours might be just as dangerous. "Six hours instead of four hours, would have a similar impact but would just take a longer period of time," she says.

After the experiment, the six men could make up for their sleep debt. It is unclear, however, how sleep debt affects the body over long periods of time. Van Cauter's early findings suggest that chronic short sleepers have a hard time keeping their blood sugars stable, which makes them prone to insulin resistance and obesity. Experts are now speculating that lack of sleep could be the missing link in understanding America's obesity epidemic.

Slows the Mind

The military's leading sleep expert, Colonel Gregory Belenky has long been concerned about the effect of sleep deprivation on America's hi-tech warriors. Now he is looking beyond safety and performance to uncover the biological damage that might result from sleep deprivation. His research shows that "brain function is degraded by prolonged waking."

Belenky's high-tech brain images show that sleep debt decreases the entire brain's ability to function — most significantly impairing the areas of the brain responsible for attention, complex planning, complex mental operations, and judgement.

What most surprised Belenky, however, is the difficulty with which the brain recovers from sleep deprivation. Even after four eight-hour recovery nights of sleep, Belenky's subjects were still making more errors than when they started.

Trying to Cheat Nature

The United States is becoming a nation of chronic short sleepers. In 1910, most Americans slept nine hours per night. Now, the average night's sleep is seven and a half hours and the trend shows no signs of flattening. Though millions of Americans routinely get fewer than six hours, the vast majority needs at least 8 hours per night.

Dr. David Dinges, chief of the Division of Sleep and Chronobiology at the University of Pennsylvania, estimates that only 10 percent of Americans can consistently sleep fewer than eight hours per night without harmful effects on one's health. Many people, he says, need as many as 10. "If you're a nine or a nine and a half-hour need, and you're sleeping eight, you're developing a sleep debt — there's no way to cheat Mother Nature," says Dinges.

Fighting Fatigue

Though you cannot cheat Mother Nature, many people try by guzzling cup after cup of coffee. Dinges explains that the lift a cup of coffee gives is in fact an extra boost of stress. "When you use caffeine heavily during sleep deprivation, you have an elevated level of stress hormones occurring in the body and that's not particularly good," Dinges says.

Other people who suffer from sleep debt blame their environment, saying that their meeting or lecture is too boring to keep them awake. Dinges says this is denial: "If you're bored, you're awake, you're just bored. If you're bored and you fall asleep, you've got a sleep debt."

How Much Is Enough?

So, how do you figure out what's the right amount of sleep for you personally? Dr. Belenky suggests paying attention to how much you sleep while on vacation — when you can sleep as long as you want. For the first few days you are likely to sleep a lot, but as you pay off your sleep debt, you will reach a natural equilibrium. At the end of the first week you will probably be sleeping the number of hours you need on a regular basis.

Recovery Sleep

If you do have a sleep debt, sometimes you can pay it off by napping. All stages of sleep are important, but the sleep that helps the body to recover happens quite soon after falling asleep. "You get a terrific return from the first 20 or 30 minutes of sleep relative to any other 20 to 30 minutes of sleep — so naps pack a lot of power," says Dinges.

Dinges says the best time to take a nap is from noon to 6 p.m. and the peak time is from 1 p.m. to 3 p.m. It is also critical that you lie down completely. Finally, it is more efficient to nap in advance of anticipated sleep debt — rather than the next day.