

LACK^{of} SLEEP

A WAKE-UP CALL

Some new health warnings about serious diseases linked to too few Z's may inspire you to get more.





By Janet Carlson

If you ever felt wimpy about needing the standard eight hours of sleep while everyone around you seemed to be boasting about getting by on only five or six, now's the time for you to stand by your instinct: You'll probably live longer because of it. Recent research sponsored by the National Institutes of Health (NIH) and other institutions around the world have provided strong epidemiological evidence that sleep disorders and inadequate sleep are linked to heart attack, stroke, obesity, and diabetes – in addition to well-known behavioral consequences such as memory problems and ADHD.

Michael Twery, Ph.D., director of the National Center on Sleep Disorders Research at the National Heart, Lung and Blood Institute of the NIH says, "Insufficient sleep isn't a disease. There's no diagnostic code for the misery, no reimbursement code for sleep deprivation. But there's a demonstrated association between your sleep deficit and your own risk of disease. So where does sleep fit in medicine?" The research is now providing some answers.

The new data express with numbers what your mother meant when she exhorted, "Get your sleep so you don't get sick." We've long known she was right. Now scientists can create a picture of a brain under the influence of sleep deficit and can explain the mechanism by which you increase your risk of certain illnesses. In basic physiological terms, inadequate sleep leads to a cascade of changes in the way your metabolism functions, and these changes can trigger diseases such as obesity and diabetes.

"Every life form on the planet, from a whale to a fly to a human to a plant, is dependent on regular biological rhythms," Twery explains. "Optimal physical health is as-

sociated with these rhythms." Disruption of the circadian processes contributes to a disease condition. Twery tells of lab rats deprived of adequate sleep. "They get fat and live only half their normal life span."

Do you treat your car better than you treat yourself?

Twery likens human physiology to an orchestra, "with parts like hormones in intricate balance. When one element is changed or removed, other things start to go wrong." He shifts to automotive imagery to get at the macropicture of sleep-deprived humans running on empty: "If your car engine's timing is off, the car still runs, but not optimally, and driving the car wears down the engine more. A poorly tuned engine doesn't last as long. And then, it becomes a matter of what fails first."

Insufficient or interrupted sleep affect the cardiovascular system. Sleep deprivation and apnea seem to be associated with high blood pressure, inflammation, and deposits in the arteries. Stroke and sleep apnea (a condition in which

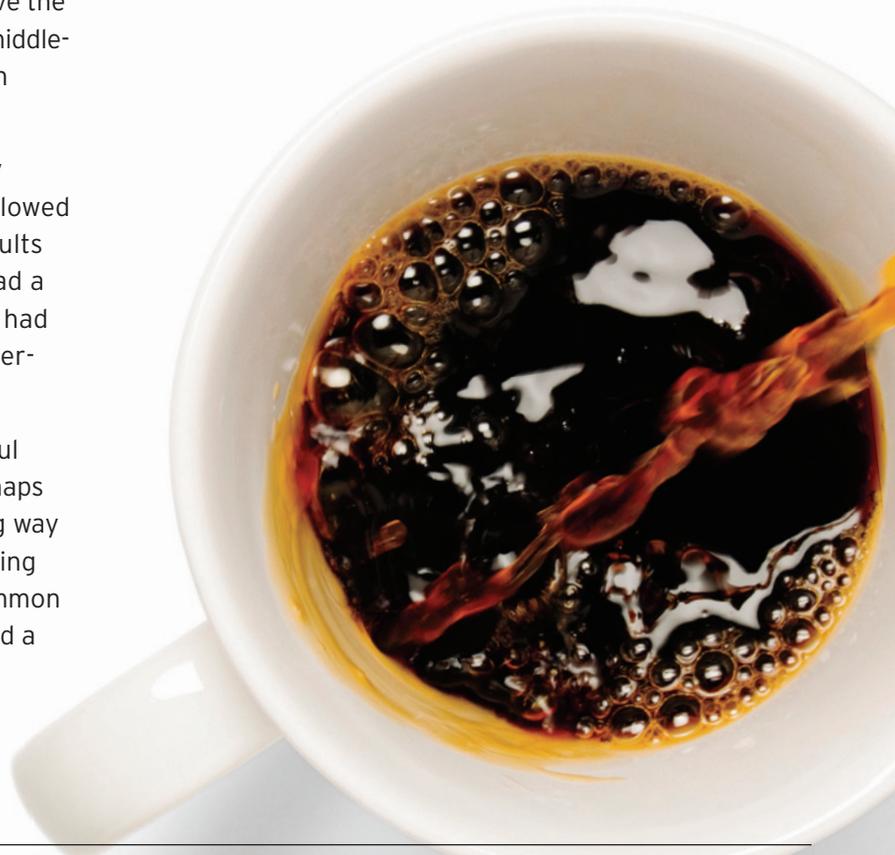




breathing stops briefly and repeatedly during sleep) have the most demonstrable connection. “In a 14-year study of middle-aged men, those with apnea had a three-fold increase in stroke risk,” Twery says.

The Norwegian Institute of Science and Technology studied 52,610 people who had sleep troubles and followed them for 11 years. (*Circulation*; October, 2011.) The results showed that those who had difficulty falling asleep had a 45 percent increased risk of heart attack. Those who had difficulty staying asleep through the night had a 30 percent increased risk.

Young people tend not to pay attention to such useful information about protecting their heart health – perhaps because they feel invulnerable and death seems a long way off. “They don’t realize that even then, at their age, going without sleep is putting a burden on their health.” Common effects of sleep deprivation in teens are depression and a dramatically increased risk of suicide.





When sleep eludes

Young or old, many people struggle with insomnia. Devin Traineau, a New York City photography editor, started experiencing severe insomnia due to anxiety and depression in connection with fertility issues and narrowing treatment options. Some anxiety medications exacerbated her insomnia. One caused her to spend a nightmarish 52 hours awake. When she did sleep, Traineau would wake up during the night gasping for air. Ultimately, her dentist diagnosed sleep apnea and she is now hoping her insurance will cover the nighttime treatment device. (Fortunately, her insomnia abated as soon as she had her first baby.)

Other people don't mind not sleeping. The I-can-get-by-on-four-or-five-hours-of-sleep-and-be-fine attitude may work, but only in terms of how they function the next day. Twery makes a key and subtle distinction: "The amount of sleep an individual needs to maintain vigilance and function during the day is different from the amount needed to maintain physical health."

One sleep study looked at healthy adults in a lab, limiting them to four hours of sleep a night. The study saw changes in their eating preferences, most notably a pronounced increase in consumption of high-fat foods, which help maintain wakefulness. Similarly, insufficient sleep stimulates the production of stress hormones, which, Twery says, "tell your body to work harder and to make sugar more available. In studies of tens of thousands of people worldwide, those who report shorter sleep duration have higher BMIs (body-mass index)."



Investing in more and better sleep

Sleeping more doesn't make you skinny, but it does give your body its best chance for good health over the long haul. Most people, however, are tempted by quick-fix solutions – the five-hour energy drinks and nutritional supplements to help them function on less sleep. “Unfortunately, the person drinking 10 cups of coffee or buying a case of caffeinated energy drinks to mitigate symptoms now isn't thinking there's a problem with his lifestyle, so when he has a heart attack 20 years later, he's not going to tie it back to not sleeping enough 'back then,’” Twery says. “But there is a link.”

Getting more and better sleep is a long-term investment, like sound nutrition and regular exercise. “We can party all night now and then,” Twery allows. “You have choices – whether you smoke or drink – sleep is another lifestyle choice that you can't evade. It's your responsibility.” ■

To find a sleep center near you, visit:

www.sleepcenters.org

For more information about healthy sleep, insomnia, and sleep disorders, visit:

www.nhlbi.nih.gov/health/public/sleep/

