



What causes insomnia?

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Henry Olders, an assistant professor of psychiatry at McGill University in Montreal who conducts sleep research, explains.

Most people encounter sleep difficulties from time to time, often related to stress or pain. Many of these bouts get better without treatment. Unfortunately, in a significant proportion of the population, sleep problems turn into insomnia, which is defined as the chronic inability to fall asleep or to enjoy uninterrupted sleep. Some research suggests that attitudes about sleep, and the sleep patterns and behaviors prompted by these attitudes, make certain individuals vulnerable to chronic insomnia. The good news is that behavioral treatments are highly effective.

Just how big a problem is insomnia? The National Sleep Foundation surveyed more than a thousand adults in 2002. Thirty-five percent said that, every night or almost every night of the previous year, they had at least one out of these four symptoms: difficulty falling asleep, waking a lot during the night, waking up too early and not being able to get back to sleep, or waking up feeling unrefreshed. About 15 percent of the survey group reported taking either a prescription sleep medication or an over-the-counter sleep aid at least a few times a month. A study of the Canadian population found that 24 percent of people ages 15 and older reported insomnia, defined in this study as a "yes" response to the question "Do you regularly have trouble going to sleep or staying asleep?" Some of the factors associated with insomnia in this study included being female, being widowed or single, having a low education level, low income, unemployment, smoking, life stress, physical health problems, and pain or activity limitation. Although age did not seem to be a factor in this survey, other studies have shown that insomnia increases with age. For example, 4 percent of a sample of older European adolescents met criteria for insomnia disorder as defined by the Diagnostic and Statistical Manual, 4th edition (DSM-IV) of the American Psychiatric Association. Compare this to a group of 330 elderly patients in a family practice, in which 57 percent met criteria for DSM-III-R insomnia disorder. What's worse, insomnia is not a benign problem. Difficulty falling asleep or staying asleep is associated with an increased risk of dying in the elderly. Many elderly insomniacs take naps during the day; in addition to making insomnia worse, naps are related to higher mortality in this age group.

Although many people believe that psychiatric disorders such as depression and anxiety cause insomnia, the reverse may actually be true. The National Institutes of Mental Health Epidemiologic Catchment Area study found the risk of developing a new depression was 39.8 times higher for insomniacs than for those without sleep problems. Other research, however, suggests that too much sleep--in particular too much rapid eye movement (REM) sleep--can bring on a depressive state. We can reconcile these two seemingly incompatible findings by asserting that insomniacs who become depressed are getting too much sleep. Unfortunately, this flies in the face of conventional wisdom that holds that insomniacs are sleep-deprived.

Whereas many people with difficulty sleeping believe that they're not getting enough sleep (an opinion shared by a number of sleep researchers), evidence is mounting that people with insomnia are in fact getting at least as much sleep as they require, and possibly more. What is known is that insomniacs tend to get into bed early, stay in bed late, sleep during the day, spend more time in bed than non-insomniacs, and that they underestimate the amount they actually sleep even though they sleep as much as those people without insomnia. The amount of daytime sleep a person experiences is directly related to overall sleeping problems. Finally, voluntarily extending sleep is known to cause insomnia. Conversely, reducing time in bed is a very effective treatment for sleeplessness. Thus the hypothesis that primary insomnia is caused by attempting to sleep more than you need.

Simply put, if you believe you need eight hours of sleep a night, you'll arrange your bedtimes and rising times to be in bed for eight hours. If your actual sleep requirement is only six hours, however, this schedule would result in two hours of tossing and turning each night. Even with sleep medication that might make you sleep an extra hour, that would still leave one hour of

tortured wakefulness.

Why would someone spend more time in bed than they actually need? Attitudes towards sleep seem to be very important. Charles M. Morin and colleagues at Virginia Commonwealth University found that insomniacs held stronger beliefs than good sleepers about the detrimental consequences of insomnia to physical and mental health, they made stronger attributions of mood disturbances and lack of energy to poor sleep, and they perceived their sleep as less controllable and predictable. Individuals with sleep-onset insomnia (that is, difficulty falling asleep as opposed to difficulty staying asleep) were more likely than those without insomnia to focus on worries, problems, and noises in the environment prior to sleep, and to think about not sleeping or about something that had happened during the day. For instance, if you believe that you cannot function adequately without having had a good night's sleep, then even one night of poor sleep may trigger behaviors such as staying in bed later or taking a long nap. These behaviors are likely to make the insomnia chronic.

So how much sleep do you actually need? And how can you tell if you are getting the right amount of sleep? Although eight hours per night is a figure repeated so often that it's become an article of faith, the reality is that sleep need is highly individual. Large-scale epidemiological studies have shown that sleeping seven hours per night is associated with lowest mortality risk compared to longer or shorter sleep. In addition, it is likely that as we age, sleep need decreases.

Many people believe that if they've had a good night's sleep, they will wake up automatically without an alarm, feeling rested and refreshed. Unfortunately, this is not true. Circadian rhythms studies show that a person is likely to be drowsiest early in the morning, even after a good night's sleep. But if you have great difficulty remaining awake during the day (excepting the mid-afternoon slump, when it is normal to be sleepy), then it most likely means you are not getting sufficient sleep. Alternatively, you may have a more serious condition such as obstructive sleep apnea or narcolepsy, or you may be experiencing side effects of medication. In any case, no matter what the cause of your daytime drowsiness, do not drive or operate dangerous machinery when sleepy. If your drowsiness is caused by insufficient sleep, brief naps of 10 minutes or so will most likely be refreshing, but longer siestas may impair your night-time sleep.

On the other hand, if you feel tired but can't fall asleep during the day, then your tiredness is more likely fatigue instead of sleepiness. Although many people, including researchers, use the terms fatigue, tiredness, and sleepiness interchangeably, they are different conditions. Most people can distinguish sleepiness or drowsiness such as that felt after being up out of bed all night waiting in the emergency room with a sick child, from the fatigue or weariness experienced after running a marathon. Such "acute" fatigue is different yet again from the "chronic" fatigue experienced by cancer patients, sufferers of chronic fatigue syndrome or fibromyalgia. Chronic fatigue is experienced even without exertion and does not improve with rest or sleep. One hypothesis suggests that chronic fatigue, like depression, may be caused by too much REM sleep. Experiencing this nondrowsy kind of tiredness together with insomnia strongly suggests a person is getting more sleep than he or she needs.

For worriers, the good news is that cognitive-behavioral therapy can modify dysfunctional attitudes about sleep. Insomniacs can be helped by practicing good "sleep hygiene," which includes paying attention to the effects on sleep of environmental factors such as noise, light, and temperature; avoiding behaviors that can lead to conditioned insomnia such as reading or watching TV in bed; avoiding alcohol, nicotine, caffeine, or certain medications before bedtime; and paying attention to the timing of exercise, snacks, and bedtime itself. Sleep restriction (which might more accurately be called restriction of time in bed) may also help. Together, these nonpharmacological treatments for chronic insomnia are more effective and longer-lasting than medications.

Finally, the longer you are awake, the more slow-wave (delta) sleep you will have when you do sleep. Slow-wave sleep is associated with feeling you have slept well, and with feeling refreshed. To sleep well, then, get up early, but avoid going to bed early. I can't express this any better than the following proverb, which predates Benjamin Franklin by more than 200 years: "At grammar-scole I lerned a verse, that is this, Sanat, sanctificat, et ditat surgere mane. That is to say, Erly rysyng maketh a man hole in body, holer in soule, and rycher in goodes." (Anthony Fitzherbert (1470-1538): *The Book of Husbandry*, 1523).

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