

How to Fall Asleep

The most frequent cause of delayed sleep onset is worry. There are two kinds of worry that often interfere with sleep: 1) worry about things that have already happened, and 2) worry about things that are going to happen or might happen.

When worry about past events keeps repeating over and over in a series of variations like a musical fugue, it's called rumination. Rumination is a common cause of insomnia, especially so-called early insomnia – the type characterized by delayed sleep onset. The other cause of early insomnia is worry about things that are going to happen (or might happen). For example, worry about a job interview or exam the next day, or a presentation in front of a group.

Most people fall asleep within fifteen minutes from when they turn off the lights and lie still with eyes closed with the intention of sleeping. If it takes more than 30 minutes, it is usually felt to be too long and there are things you can do to increase the likelihood that you will fall asleep sooner.

First you need to notice what type of thoughts are you having. Are you reviewing events that happened earlier that day? Are you feeling regret over things you said or did? Are you recalling something that upset you, such as a mistake you made or something someone said to you? A criticism? An insult? Feelings of shame or embarrassment? Those experiences require time to process emotionally, but often can lead to non-productive worry if you just keep ruminating without any apparent purpose to the worry.

Rumination is best treated by using a bedside journal. Each night before retiring, write for a few minutes in your journal and list any major events that occurred, along with some comments about how they made you feel at the time and how you feel about it at the moment you are writing. The remedy for rumination is purposeful reflection and the goal is learning. Journaling is a catalyst for that process. It creates the opportunity for insight and offloads the conflict or injury by putting the thoughts and feelings into words and then by archiving them, allows your mind to rest.

Worry about things in the future requires a different approach. Anxiety is a normal emotional and cognitive response to uncertainty. Uncertainty is best managed by anticipation: a process in which you consider a range of possible events or outcomes that might occur, evaluate them for possible risk and opportunity, assess the probabilities of various occurrences and outcomes, and then use preparation and rehearsal to develop a strategy and practice it so that you are ready. This is not an activity that is compatible with sleep, and so the work needs to be done prior to sleep.

Although you could use your journal for this purpose as well, a planner or notepad is a better tool. If this kind of worry occurs often, it is helpful to form the habit of planning your next day

before bedtime. List the events that will occur the next day and what actions need to be taken to be prepared. Schedule time in your calendar or planner that is set aside the next day to address each of the events or goals that are coming up and likely to come to mind as you are trying to sleep. If you have anticipated them all, you will be unlikely to think about them once the plans have already been written down. Usually, however, a few last-minute ideas pop into your head as you're trying to fall asleep. These need to be added to the list so that you can offload them and "think about it tomorrow." But ideally, you don't want to turn the lights back on, so having a very low wattage night light (or a pen with a built-in light) is preferable.

Once you have done a worry brain dump, you are ready to go to sleep. But now what do you do with your mind while you lie there in the dark? Minds are naturally restless. Without a focus, they wander, and the risk is that your mind will uncover some remaining, half-hidden worry that leaks into your awareness. This can be avoided by one of several methods, and I find that it is best to have several tools available to try.

The simplest is basically a variant of "counting sheep." That may have made sense 200 years ago, but it lacks relevance today for most people. Instead, use your breathing to establish a natural sleep onset strategy.

- First, pay attention to your breathing and adjust it to a rate and depth that feels relaxing and comfortable.
- After a few breath cycles, start with the number 100 and with each out-breath, think the numbers silently and subtract one from the last number, repeating this silently to yourself.
- As you get further long as the numbers go down, you may notice that your mind wanders off to other thoughts. When you notice that has occurred, gently return to the last number you recall and don't worry if you're not sure.
- Just continue counting down with each out-breath restarting with a number somewhere around where you were. That process will keep happening; it is normal.
- Gradually you may notice that the distracting thoughts that have pulled your attention away from the countdown begin to take on an unreal or dreamlike quality. Once that starts to happen, you realize that you are your way to dreamland and slumber is around the corner.
- Just keep repeating the process until when you wake up and realize that the last number you recall was 64 or 42 or something like that. If you get to zero, don't worry, it doesn't work for everyone and there are other tools to use. You've only invested six or seven minutes to try this method out.

What do I do if I get to zero, and I am still awake?

If you got all the way to zero, counting breaths is unlikely to work. If you are drowsy you could try it a second time, but if not, we suggest using a method that grabs your attention more: listen to an audiobook or podcast.

Often people are advised if you can't fall asleep get out of bed and do something. That advice may work sometimes, but the downside to that approach is that it usually involves exposing your retina to light. That should be avoided if possible. For hundreds of thousands of years our ancestors set their circadian rhythm sleep clock by the sun, the moon and the stars. Since the advent of fire, and later electricity, humans have altered their natural circadian sleep rhythm. Even so, there is a strong biological foundation for going to sleep when it gets dark and awakening in the morning at dawn.

There is a complex neurochemical process that supports that well-established pattern and it involves the retina, the optic nerve, the hypothalamus, the pineal gland, and the pituitary. The chemical mediator of sleep onset is a natural hormone called melatonin, and it has a daily biological rhythm that is set by repeated cycles of light and dark leading to pulses of melatonin released in the evening at the end of each day. Along with behavioral cues, it is the clock that triggers sleep onset after the sun has gone down.

Technology has made it easy for humans to remain awake through the use of artificial light to permit extended or time-shifted work and by allowing entertainment when we should be asleep. But there is a price for these "advances" and that price is disrupted patterns of sleep and has contributed to the modern-day epidemic of insomnia. Furthermore, the cumulative lack of sleep leads to obesity, high blood pressure, diabetes, and inflammation, a causal factor in heart disease, depression and Alzheimer's disease. For young adults, the consequences are tied to performance: impaired concentration, fatigue, lower grades and poor athletic performance, among others.

The implications of these important biological relationships that if sleep onset can be achieved without disrupting your circadian rhythm, that step is the next thing to try. So, instead of reading a book or using a tablet, laptop or smartphone, better to insert your earbuds and turn on an audiobook or podcast using an audio player with a timer set to shut off after 15-30 minutes so your sleep isn't disrupted throughout the entire night while someone narrates *The Odyssey* for you while you dream about being caught between Scylla and Charybdis.

If you are bothered by a continuing stream of intrusive thoughts of the type described earlier, then you'll want to choose something that will hold your attention. A historical novel might be suitable. Ken Follett's historical fiction trilogies are perfect. If you chose a "page-turner" you may discover that it is hard to stop at the end of a chapter. Biographies are also good choices (e.g., Hamilton, Grant, Lyndon Johnson, Bruce Springsteen). Or chose a classic that you never read, like *War and Peace* or *Moby Dick*. Alternatively, podcasts like *Fresh Air*, *This American Life* and *the Moth* are engaging and not too long.

Sometimes the stories people choose are too engaging, interfering with sleep. In that case, music may be better. Something soothing. Handel, not the Flight of the Bumble Bee or the Clash. If your worries intrude, move up to a novel or a podcast. The trick is to adjust the level of

attention required to impede worrying while not being too stimulating. It's a trial and error process.

If after trying listening in the dark is not working, then rather than toss and turn, it's better to get up and do something to pass the time. Probably reading would be best, using the lowest intensity light available. Avoid television or surfing the Internet, especially the news or Facebook.

If none of these techniques prove to be helpful, check out the Relaxation Toolkit for other methods of learning how to relax.

Frequent Awakenings (Middle insomnia)

Managing frequent awakenings require two approaches: reducing the time to return to sleep after having awakened, and reducing the frequency of awakening in the middle of the night. Good sleep hygiene practices are essential to hasten sleep onset as well as to improve sleep maintenance. There are both behavioral and biological reasons for frequent awakenings. Worry is only part of the story.

What you eat and drink during the day and especially during the evening can affect the quality of your sleep. The disruptive effect of caffeine is well known. But less known are the effects of other substances in food that are natural stimulants: chocolate, fermented foods, pickled foods, yoghurt and soft ripened cheeses all contain varying amounts of substances that have stimulant-like properties. Mushrooms in large quantities can impact sleep. To learn more, Google "sleep and foods."

Alcohol is probably a bigger culprit than caffeine in disrupting sleep, especially when it leads to awakening in the middle of the night and making it difficult to fall back asleep. The biological properties of alcohol explain this common phenomenon.

Alcohol is a nervous system depressant and is the most widely used substance to suppress anxiety (especially social anxiety). Furthermore, it is often used inappropriately to self-medicate depression, usually making it paradoxically worse. The problem with alcohol when used to self-medicate anxiety or depression is that it is a drug that has two opposite mechanisms of action. Initially alcohol is a depressant and a relaxant and often those effects are initially appreciated. However, hours later, when metabolized in the body, it is broken down into compounds that combine with other substances to create compounds with stimulant properties. These effects disrupt sleep, reduce sleep efficiency and duration, and contribute to symptoms in the morning that leave the individual feeling more anxious. In those instances where someone feels badly enough the next day to want "a hair of the dog" to suppress the rebound anxiety, a vicious cycle can get set up that can lead to a cycle of repeated use that becomes alcohol dependence and even addiction.

The implications of these qualities of alcohol are that anyone who has frequent awakening during the night must commit to a trial period of at least one month of no use of any caffeine-containing beverages and no use of alcohol. Of course, other foods that are known to disrupt sleep must also be avoided during the evening as well.

Other factors that can cause frequent awakenings are pain (due to injuries, or medical problems), environmental problems (such as noise, heat, roommates, lights, sirens, etc.). Having a pitch-dark bedroom is helpful for most people. That may require putting black tape over the many LEDs that are widely used on all the electronics we use. Vibrating smartphones are also a problem. Phones need to be turned off and, frankly, shouldn't even be near the bed to reduce the temptation to check your mail, Instagram, Twitter or Facebook accounts if you awaken during the night.

There are a number of sleep disorders that can cause disruption of sleep during the night. Some of these conditions begin in childhood, such as night terrors. These are extremely intense nightmares in which a person does not necessarily realize that the terror was a dream when they awaken. Other sleep disorders begin during adulthood and lead to inefficient sleep and excessive daytime fatigue. The best known is obstructive sleep apnea (OSA), a condition in which upper airway obstruction during stages of deep sleep can lead to frequent awakenings known as microarousals which prevent sufficient sleep and cause episodic reductions in oxygen supply to the brain at night. Obesity is a known risk factor for OSA.

Reading about sleep hygiene and sleep disorders is very helpful. If you haven't already done so, the Mayo Clinic (www.mayoclinic.org) patient information website has excellent articles on Sleep Hygiene and Sleep Disorders.

Steven Locke, MD