

Is caffeine a friend or foe?

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Caffeine jump-starts your day and puts a bounce in your step. It can help you focus, improve your mood and maybe even help you live longer.

But how much is too much?

Caffeine, a natural stimulant, can be found in a variety of foods, such as [coffee beans](#), tea leaves, cacao beans, guarana berries and yerba maté leaves. It also can be synthetically created and added to beverages such as soda and energy drinks. Research shows that about 90% of U.S. adults consume some form of [caffeine](#) every day.

One of the most popular ways people consume it is through coffee. Because of that, most caffeine research centers around this drink, said Dr. Greg Marcus, associate chief of cardiology for research and a professor of medicine at the University of California, San Francisco.

"The literature on the whole shows that [coffee consumption](#) is generally not a detriment to health," he said. "But I am very reluctant to recommend anyone begin drinking coffee if they aren't otherwise doing so, or to increase consumption for any health benefit."

Studies have found caffeine can do both good and harm. People who regularly drink coffee may be less likely to develop chronic illnesses, such as cardiovascular disease, diabetes, Parkinson's disease and some cancers. A few studies suggest they are less likely to die from [heart disease](#) and other illnesses.

According to the Food and Drug Administration, as much as 400 milligrams of caffeine a day—equal to four or five cups of coffee—is considered safe for [healthy adults](#). An 8-ounce cup of green or black tea has 30-50 mg of caffeine. Energy drinks may contain 40-250 mg for every 8 ounces, and a 12-ounce can of caffeinated soda contains 30-40 mg.

In moderate doses—up to two 8-ounce cups of coffee—caffeine can make people less tired and more alert. Some studies suggest it can

reduce appetite and lower the risk for depression. But high doses—12 cups or more—can make people feel anxious, raise [blood pressure](#) and lead to heart palpitations and trouble sleeping. For people who consume caffeine regularly, stopping consumption abruptly can lead to symptoms of withdrawal, such as headaches, fatigue and depressed mood.

Determining how much is too much can be tough. A moderate amount of caffeine for one person may feel like a high dose for someone else. That's because some people metabolize caffeine faster than others, Marcus said. Factors such as how much someone weighs and what medications they take also can play a role. The bottom line is, caffeine affects everyone differently.

"The compound is complex, and we need to recognize that not only might there be benefits and harms, but this may vary from one person to another," Marcus said.

He and his colleagues recently completed one of the few randomized studies on caffeine consumption, which he presented at the American Heart Association's Scientific Sessions last year. The researchers asked participants to drink—or refrain from drinking—coffee for no more than two consecutive days each for two weeks.

The findings, which are considered preliminary until the full results are published in a peer-reviewed journal, showed that people were more physically active and slept less on days they drank coffee than on days they went without. They also had more irregular heartbeats from the lower chambers of the heart but fewer episodes of abnormally rapid heartbeats from the upper chambers.

Marcus said one limitation of the study was that people were starting and stopping caffeine consumption, which could be causing an exaggerated reaction in people who were used to drinking it every day. "The effects

of caffeine are attenuated when you drink it regularly," he said. "The body adapts to that caffeine level. And more regular consumption of caffeine can speed up the metabolism."

People who metabolized caffeine faster had fewer problems sleeping than those whose bodies broke it down more slowly, he said.

In his cardiology practice, Marcus tells patients who are having trouble sleeping or experiencing [abnormal heart rhythms](#) to see what role caffeine might be playing. "I generally advise that it is reasonable for patients bothered by trouble sleeping or with palpitations to experiment with their caffeine consumption. Take some time off of caffeine to see if it makes a difference." But he does not give a blanket recommendation to avoid caffeine.

Marcus doesn't distinguish between the caffeine that people get from [coffee](#) versus hot or iced tea. "There may be health differences between the two, but they haven't been studied yet," he said.

He is less flexible about the consumption of energy drinks, which typically have a higher concentration of caffeine, as well as added sweeteners or carbohydrates and no evidence they provide any health benefits. Research has found energy drinks can cause abnormal electrical activity in the [heart](#) and higher blood pressure that persists for several hours.

"In general, I would caution against the use of [energy drinks](#)," Marcus said.

There are other ways to stay alert.

"The best strategies and overall most healthy strategies to boost alertness are long-term healthy habits," such as getting a good night's sleep and

exercising regularly, Marcus said. He recommends people who have trouble staying awake consult a physician to see if they have sleep apnea or another sleep disorder.

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