### How much coffee is OK for me to drink in a day? I asked the experts

The morning brew has a 'bad boy reputation' but is it really harmful? A breakdown of the benefits and hazards.

People have a love-hate relationship with coffee.

A 2023 report from the National Coffee Association found that 63% of Americans drink coffee every day – that's more than any other beverage, except water. That same year, coffee reportedly overtook tea as the UK's favorite drink; according to the British Coffee Association, the UK consumes about 98m cups of coffee a day.

On the other hand, many people seem to feel uneasy with how much brew they consume. An abundance of articles detail people's quests to quit their coffee habits. And companies like MUD\WTR – which makes mushroom-based beverages – have advertised themselves as "healthier" alternatives to the regular cup of joe.

"Coffee has a bit of a bad boy reputation," says Dr Peter Hayes, professor of hepatology at the University of Edinburgh. Current concerns about coffee, he notes, often reference the nebulous concept of "detoxing", which is difficult to measure.

"Everybody talks in very vague terms," he says, adding that coffee is not a toxin.

What is one to make of this? How much coffee is too much? Should we be trying to cut back?

We asked experts to break down the effects of our morning brew.

## What happens when we drink coffee?

The main active ingredient in coffee is caffeine, explains Dr Sander Kersten, a professor of molecular nutrition at Cornell University.

Anyone who has guzzled a morning mug will be familiar with the effects. As a stimulant, caffeine makes one feel more alert, Kersten says. People's reaction times are quicker, they are better able to concentrate, and they have increased

endurance. Studies have found that caffeine consumption is linked to improved athletic performance.

According to Karsten, these effects usually kick in within half an hour and last up to two hours. "That's probably the reason people tend to keep drinking coffee over the day," he says. "It doesn't last a long time."

### What are the health benefits of drinking coffee?

Experts agree that there are myriad benefits to our morning java. Coffee contains "hundreds if not thousands of components", says Dr Edward Giovannucci, professor of nutrition and epidemiology at Harvard University's TH Chan School of Public Health.

Some of these components "may have a range of beneficial effects, which might improve health over the long run", he notes.

Certain compounds, for example, have strong anti-inflammatory and antioxidant properties, Giovannucci explains. Others reduce insulin resistance, which is a risk factor for diabetes.

In a meta-analysis of the effects of coffee consumption on health, Hayes and his colleagues found that drinking three to four cups a day was associated with lower risks of cardiovascular mortality, certain cancers and neurological, metabolic and liver conditions.

The liver in particular seems to thrive on coffee. One cup of coffee a day can reduce the risk of cirrhosis by 20%, and five cups a day can reduce the risk by 80%, Hayes says.

Hayes also notes that "it's important to differentiate coffee from caffeine". For example, a drinker can see these benefits even with decaffeinated coffee. "So there's something in the coffee, and it's not the caffeine, that is protective to the liver," he says. "Apart from the liver, the more the better is not true."

# What are the drawbacks of drinking coffee?

High coffee intake can increase blood pressure, says Giovannucci.

Additionally, some people might be more sensitive to the effects of caffeine than others. "The stimulant effect of coffee can cause anxiety in sensitive people and could disturb sleep," says Giovannuci.

In order to mitigate its disruptive effects on sleep, experts advise limiting caffeine intake to before 5.00pm, says Dr Kera Nyemb-Diop, a nutrition expert, food researcher and nutrition coach.

But the exact time will depend on your own sleep schedule and your body's sensitivity to caffeine. Nyemb-Diop points to one study that found that consuming caffeine even six hours before bedtime can significantly disrupt sleep and reduce our total slumber time by more than one hour.

Some people, including pregnant women and those with severe cases of osteoporosis, should limit their coffee intake, Hayes says.

#### Is there a limit to how much coffee one should drink in a day?

Up to 400mg of caffeine a day seems to be safe for most adults, according to the Mayo Clinic. One eight-ounce cup of brewed coffee contains about 95mg of caffeine, says Giovannucci, so that's the equivalent of about four cups of joe.

Above these levels, Giovannucci says, people may experience nervousness and an elevated heart rate – "symptoms that can be felt during an anxiety attack", he says. Individuals with an underlying panic or anxiety disorder are at particular risk of experiencing these negative side effects.

Two to three cups a day generally seems to be the sweet spot for reaping coffee's benefits without experiencing its drawbacks, says Hayes. But the ideal amount is different for different people.

"It's essential to listen to your body," says Nyemb-Diop. People have different levels of sensitivity to caffeine, she says, and some might feel jittery after one cup, while others might feel best after three cups.

Extreme caffeine intake can have much more serious effects. According to the Food and Drug Administration, toxic effects of caffeine, like seizures, have been observed with the rapid consumption of 1,200mg of caffeine at once. As such, the organization notes that pure and highly concentrated caffeine products,

such as those in caffeinated powders or energy drinks, "present a significant public health threat".

## Why is coffee intake so controversial?

This isn't just a modern phenomenon. According to a report from NPR, rulers in the Ottoman Empire, Germany and England tried to discourage or ban coffee drinking because of its potential to energize political dissidents.

In the book The Devil's Cup: Coffee, the Driving Force in History, author Stewart Allen writes that upon visiting a coffee house in Istanbul, one Ottoman Grand Vizier "observed that the people drinking alcohol would just get drunk and sing and be jolly, whereas the people drinking coffee remained sober and plotted against the government".

Hayes acknowledges that caffeine can be addictive. "Folks do get used to it," he notes, though he adds that gradually increasing intake has limited side effects, compared with a sudden significant increase, like going from zero cups to six.

Still, he knows of no evidence that cutting out coffee is beneficial.

"Coffee is one of nature's gifts," he says.