

HEALTH

Get a headache when you skip your morning coffee? Here's the science of caffeine withdrawal

ABC Health & Wellbeing / By [Shelby Traynor](#) for [What's That Rash?](#)

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Headaches are a common symptom of caffeine withdrawal. (*Getty Images: Anastasiia Krivenok*)

If you're a regular coffee drinker, you may have experienced the dreaded caffeine withdrawal headache.

It's a painful reminder that caffeine is a drug you can become dependent on — that it doesn't just perk you up, but changes your brain in the process.

"It is addictive," says Llew Mills, a drug and alcohol researcher at the University of Sydney.

"And it has a well-established withdrawal syndrome, as most people who have tried to stop for a little while would know."

Not everyone gets a headache from caffeine withdrawal, but if you do it's likely to set in 12 to 24 hours after your last cup of coffee.

And caffeine acts fast. Just [three days](#) of continuous coffee consumption is enough to give you withdrawal symptoms when you stop.

Caffeine withdrawal can cause more than just headaches.

In some people, it leads to impaired cognition, poor coordination, tremors and flu-like symptoms.

It has even been recognised as an official diagnosis in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).

Unlike other addictive substances, Dr Mills says when taken in [recommended amounts](#), caffeine is generally safe. Those amounts differ depending on age, health conditions and pregnancy.

But that doesn't mean regular coffee drinking doesn't have its downsides.



Missed your morning latte? Norman and Tegan explain why you might get a headache on What's That Rash?

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Inner workings of withdrawal headaches

Caffeine has a vasoconstrictive effect, meaning it narrows blood vessels and reduces blood flow to the brain.

It does this by stifling the effects of a brain chemical called adenosine.

Normally, adenosine helps widen or dilate blood vessels. But caffeine blocks these effects by latching onto the receptors adenosine binds to.

Because of caffeine's vasoconstrictive effect, it can help get rid of headaches caused by a surge in blood flow to the brain. It's even used in pain medications to [increase their effectiveness](#).

But when you stop drinking caffeine — and stop dosing yourself daily with this vasoconstrictor — there is a rebound effect.

That's because while caffeine has been busy blocking adenosine, your brain has been busy [creating more adenosine receptors](#).

When you stop drinking coffee, your adenosine suddenly has more receptors to bind to. This causes blood vessels to widen, and the corresponding boost in blood flow can trigger a headache.



st three days of consecutive coffee drinking can lead to withdrawal symptoms. (Getty Images: Alexander Spatari)

A simple cure for withdrawal headaches is ... a cup of coffee.

"There's nothing that cures withdrawal faster than taking the drug you're addicted to," Dr Mills says.

But if you aren't planning on running right back to the espresso machine, these headaches can last anywhere from two days to more than a week.

Giving up caffeine

If you're looking to give up caffeine for good, there are ways to ease the discomfort of this withdrawal period.

You can lower your dose over time, rather than stopping cold. The [amount of caffeine](#) you drink can determine the severity of your withdrawal symptoms.

Choose a replacement drink. Research suggests drinking decaf instead of your regular coffee can help.

Dr Mills and his team [tested this out](#) on heavy coffee drinkers. Two groups were given decaf and the control group was given a glass of water.

Even the participants who knew they were drinking decaf reported improvements to their withdrawal symptoms.

Dr Mills says some of this might be down to the simple act of making a hot drink.

"You've come to associate all the stimuli surrounding coffee drinking — the smell of it, the warmth of the cup, the taste — with having your withdrawal symptoms reduced."

(It should be noted Dr Mills' team used the best quality decaf coffee they could find for the study.)

So what if you don't want to stop drinking coffee? Is it possible to have a coffee-free day or two without a headache encroaching?

Unfortunately, if you're prone to withdrawal headaches, this is something you'll have to plan for.



caffeine can ease headaches because of its vasoconstrictive effect. (Getty Images: Wong Yu Liang)

The above tips might help you fend them off, but not even high-quality decaf killed all withdrawal symptoms.

At the end of the day caffeine is a stimulant — it increases activity in the brain and the nervous system. It can cure headaches and it can cause them.

It's not all pain and no gain though. In moderate doses, [there's evidence caffeine has a protective effect](#) on cardiovascular disease, diabetes, cancer and neurodegenerative diseases.

So, Dr Mills says, "if you're going to be reliant on any substance, caffeine is probably a pretty good one".

*Listen to Dr Norman Swan and Tegan Taylor [discuss caffeine withdrawal](#) on ABC RN's *What's That Rash?* And [subscribe to the podcast](#) for more.*

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