

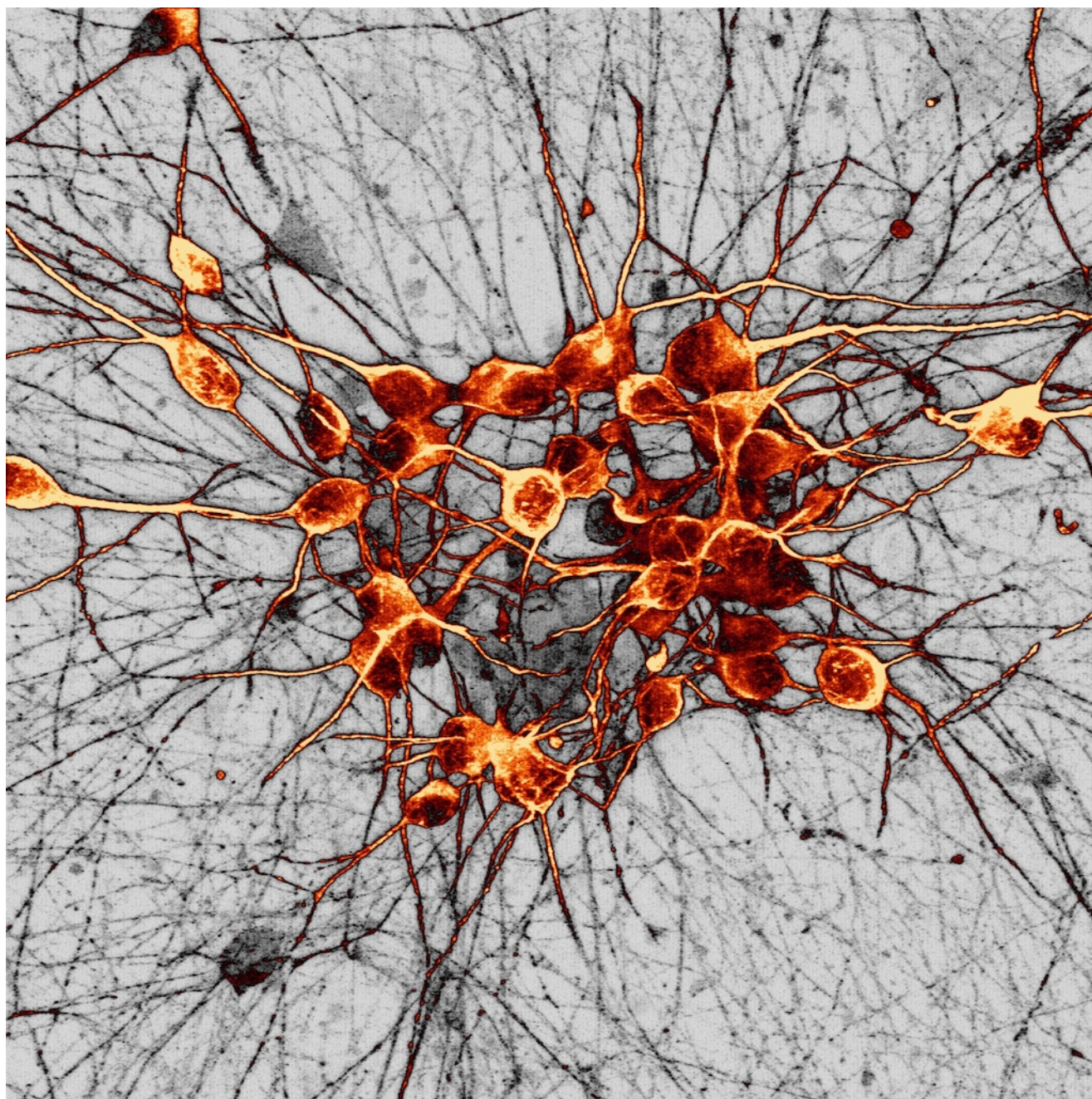
Here's what dopamine, the 'happy hormone,' actually does

nationalgeographic.com/science/article/science-behind-dopamine-function

Katie Camero

Dopamine doesn't actually make you feel good—here's the science behind the 'happy hormone'

Dopamine rushes, withdrawals, and detoxes are trending among wellness gurus online. But experts say the science behind the trendy phrases doesn't hold up.



ByKatie Camero

February 4, 2025

Dopamine is widely known as a “feel-good” hormone, a major reason why we may feel happy after a shopping spree or eating pizza.

Thousands of [TikTok videos](#) reveal how interested people have become in boosting or lowering their daily doses of dopamine—whether through dopamine “rushes” and “withdrawals,” or dopamine “fasts” and “resets.”

But now that the chemical has become an obsession among wellness gurus, scientists who study it want to make it clear: Dopamine can do a lot of things, but making us “feel good” isn’t one of them.

Dopamine doesn’t work like that, and it’s certainly not a “catch-all term for happiness,” says [Daniel Dombeck](#), a neurobiology professor at Northwestern University who studies the molecule.

Dopamine is a sophisticated neurotransmitter that also acts like a hormone and plays critical roles in learning, movement, memory, attention, mood, and motivation. While dopamine contributes to our feelings of pleasure, it doesn’t directly cause them—and it definitely doesn’t act alone.

“There’s a lot of ignorance about what dopamine does and how the brain functions,” says [Anne-Noël Samaha](#), an associate professor of pharmacology and physiology at the University of Montreal who studies the science of rewards and motivation. But in a nutshell, “it’s one of the molecules that allows us to stay alive.”

How dopamine works in the body

Dopamine acts as a chemical messenger, allowing neurons in different parts of your brain to communicate with each other. How it affects you depends on where it’s acting in your brain, Samaha says.

“In some regions [of the brain], an increase in dopamine can help people focus,” Samaha says. “In others, it could make people more impulsive.”

A lack of dopamine in certain areas of the brain can also negatively impact functions like concentration and movement, and is associated with conditions like attention deficit hyperactivity disorder, Parkinson’s disease, and addiction.

So why is dopamine mostly known for its part in our pleasure and reward system? Dombeck says that’s because it was the subject of early [research](#) in the 1980s that found our brains release the molecule when we receive food or another reward. As a result, experts generally

accepted that dopamine mediates pleasure.

But in the 90s and early 2000s, mounting evidence challenged that idea. Turns out that when you shut down an animal's dopamine system, they enjoy their rewards just as much but lose all motivation to seek more.

In other words, dopamine doesn't make you *like* something, it makes you *want* it.

"It's not the molecule of pleasure," Samaha says. "It's the molecule of the pursuit of pleasure."

This is why you may want to stop doomscrolling before bed—or using drugs or drinking alcohol—but can't bring yourself to quit even when it makes you feel terrible. Every time you swipe past funny, shocking, or otherwise engaging content, your brain releases dopamine and records the details about the moment in an attempt to boost the likelihood you repeat it whenever you're exposed to cues like the ping of a notification on your phone, Dombeck says.

This was an evolutionary advantage for humanity. Today, most things we want and need are incredibly accessible for people in wealthy countries. But our ancestors needed dopamine to make them want to walk several miles for a meal or spend months building shelter with their hands.

"We evolved in environments where we had to mobilize our energy and attention to seek out things that were necessary for our survival," Samaha says, including safety, shelter, and social connection—and dopamine helps us do that.

Dopamine 'rushes' are more than just dopamine

Yes, dopamine levels do rise when you engage in enjoyable activities like listening to your favorite song. But to call that surge in positive feelings a "dopamine rush" is "more than an oversimplification," Samaha says, "it's just plain wrong."

Those activities also elicit a rise in levels of other neurotransmitters that affect mood like serotonin and oxytocin, as well as endorphins, Dombeck says. How and where these molecules interact with each other determines how you feel.

"At the time of a positive outcome, there's a rush of activity throughout the brain," Dombeck says. "To call the whole thing a dopamine rush is underselling what's actually happening."

These peaks in dopamine aren't inherently good or bad, Samaha says—what matters most is that they aren't extreme. Too much dopamine is associated with conditions like mania, while too little is linked to depression. In most scenarios, though, "dopamine is just neutral," Samaha says, and is around to "keep us alive."

Dopamine withdrawals are complicated too

Just because you feel temporarily irritated or anxious after losing access to something that brings you joy, it doesn't mean you're experiencing a dopamine withdrawal, Samaha says.

"Anytime people have to change their habits, there's always an adjustment period that's accompanied by some level of anxiety and stress," Samaha says. "That doesn't mean dopamine levels have greatly decreased and they're now dangerously low.

There is a real condition called dopamine agonist withdrawal syndrome, but that only happens to some people who take medications that mimic dopamine to treat conditions such as Parkinson's disease and restless leg syndrome. If they suddenly reduce their dose or stop taking their meds, they may experience symptoms similar to drug withdrawal such as agitation, excessive sweating, nausea, and pain.

But a post-vacation gloomy mood, for example, might just be a sign that you've gotten used to the high of that stress-free life—not a full-blown dopamine deficit. "It'll take time for your dopamine system to kind of recalibrate and come back down to a normal threshold where other parts of your daily life could activate it," Dombeck says.

The 'dopamine fasting' trend isn't literal

"Dopamine fasting" is another buzzword that, according to the psychologist who coined the term in 2019, is meant to be an "antidote" to our highly stimulating society: Easy access to activities that give us quick dopamine hits are, as the theory goes, numbing us to the pleasures of slower activities like reading or creating art.

Now that we can do most things with a tap on a touchscreen, we're bombarding our dopamine systems with "very potent rewards that require almost no upfront work," says Anna Lembke, professor of psychiatry and addiction medicine at the Stanford University School of Medicine and author of *Dopamine Nation*. As a result, the things we like don't satisfy us as much, but we still crave them in an "attempt to bring baseline dopamine levels back up to normal, healthy firing."

Some people, however, have taken the concept of dopamine fasting too literally. Rather than asking you to stop doing everything that might stimulate dopamine in your brain, dopamine fasting is about limiting or completely refraining from impulsive and problematic behaviors.

Besides, there's no way to actually drain yourself of dopamine, Samaha says. "It's not like Dry January where you decide for a whole month that you won't drink alcohol because it's good. You can't have a dry dopamine day, it's not possible," Samaha says. "Dopamine is an ancient molecule...that has been conserved across evolution. It certainly has not evolved to be influenced by social media or people's phone habits."

Furthermore, although habits like checking social media or gambling can be addictive, there's no direct evidence that they can dramatically rewire your brain like drug abuse can, Lembke says.

The bottom line? Avoiding harmful habits are bound to benefit you, but you don't have to avoid the things that make you happy.

"Trust that your dopamine is going to do what it does," Samaha says, "and just leave it alone."