

The New York Times: -We Have a Dopamine Problem- [C2]

In una società afflitta dalle dipendenze e dalla scarsa motivazione, questo neurotrasmettitore è diventato il principale responsabile del nostro sconforto. Ma la realtà è molto più complessa.

The neurotransmitter dopamine is [eliciting](#) a lot of panic these days. According to books, articles and social media posts, our [urge](#) for a quick dopamine hit is why [we crave](#) cookies and spend too much time on Instagram. If we keep [giving in](#) to these desires, [the rationale goes](#), we'll never be able to stop ourselves. "We've transformed the world from a place of [scarcity](#) to a place of overwhelming abundance," Dr. Anna Lembke, a Stanford University psychiatrist, wrote in her bestselling book Dopamine Nation. Consequently, we're all at risk for "compulsive overconsumption." A self-improvement trend often called 'dopamine [fasting](#)' that emerged in 2019 revolves around abstaining from anything that causes the release of the chemical. The premise is that modern-day entertainments [rewire](#) the brain so that [slower-paced](#) pastimes are no longer pleasurable. Videos tagged #dopamine, many claiming to teach viewers how to manipulate the brain chemical, have more than seven hundred million views on TikTok. One influencer offers a "free list of things [that numb](#) dopamine" so that you can "reclaim control over your life!" Parents are even advised to prevent children from experiencing [spikes](#) in dopamine (meaning not to let them play video games or eat junk food) [lest](#) the insatiable need for the neurotransmitter increase bad behaviour. Scientists who study dopamine say these concerns have been [blown out of proportion](#). They "are not necessarily based on actual science of what we know about dopamine," said Vijay Namboodiri, an assistant professor of neurology at the University of California, San Francisco. Before you [swear off](#) dopamine — and the prospect of any joy in life — it's important to understand the biggest [misconceptions](#) about the neurotransmitter and what the research shows.

NOT GOOD NOR BAD

The idea that dopamine produces feelings of pleasure came from early experiments in [rodents](#), and later humans, that found the dopamine system was activated when animals encountered a [reward](#). Food, sex, drugs and social interactions all [set off releases](#) of dopamine in the brain, suggesting the neurochemical is linked to any feel-good [outcome](#). But upon further study in the 1990s, scientists realized that dopamine is more closely related to the anticipation of a [reward](#) than to its receipt. Dopamine causes the wanting of something and the motivation to go and get it, not the enjoyment of it. “What we think it maybe does is something like desire,” said Talia N. Lerner, an assistant professor of neuroscience at Northwestern University. “It teaches your brain how to predict your needs and try to align your behaviours with those needs.” A neurochemical that controls desire can sound sinister, but pursuing [rewards](#) is not inherently a problem; it all depends on the context. Animals, from honeybees to humans, developed dopamine systems to motivate them to [seek out](#) food and sex in order to survive and procreate. “It’s an important part of why we’re here today,” said Kent Berridge, a professor of psychology and neuroscience at the University of Michigan. “We wouldn’t have evolved and we wouldn’t have survived, our ancestors, without dopamine.” Dopamine is also essential for learning. In this context, the key element that causes dopamine neurons to fire is surprise, [regardless](#) of whether the [outcome](#) is [rewarding](#) or disappointing. “Dopamine tells you not when something is good or bad, per se, but when it’s better or worse than you expected it to be,” Lerner said. That [surge](#) of dopamine helps you update your expectations and potentially modify your behaviour for the future.

REWIRE THE BRAIN

Because of dopamine’s role in motivation and learning, the worry is that [highly](#) stimulating activities will [hijack](#) the neurotransmitter system, such that it no longer works for smaller, everyday [rewards](#). For someone [hooked on](#) video games, the thinking goes, Monopoly might be less [rewarding](#). This concern is partly based in science. Prolonged use of drugs that cause huge [surges](#) in dopamine, such as cocaine and amphetamine, can

cause the brain [to shut off](#) some of the receptors that the neurochemical acts on. This so-called tolerance means that more of the drug is required to achieve the same [high](#). Because video games and pornography can be [habit-forming](#), some researchers — including Lembke — have hypothesized that they might cause similar signs of tolerance in the brain. However, in an interview with The New York Times, she admitted that this theory is [inferred](#) from studies of stimulant drugs and that there isn't currently evidence to back it up. As a result, Berridge and others have critiqued the idea. One reason is that the amount of dopamine released in response to video games, pornography, social media and junk food is substantially lower than that released in response to addictive drugs. And while, for some people, video games cause a greater dopamine response than [board games](#) do, that doesn't mean the board game causes a smaller dopamine release than it used to, and it isn't because of an inherent change in the dopamine system, Namboodiri said. It also doesn't mean that video game lovers will never want to play [board games](#) again. The same goes for eating candy versus eating fruit or watching YouTube versus reading a book. Taking a break from video games or social media can be a good idea if you want to spend more time on other [pursuits](#). But that's not because you need to reset your dopamine system, Namboodiri said. (There is reason to believe that our digital lives have shortened our [attention spans](#), but that's a different story.) [“If the advice that someone's giving you about what you should do holds regardless](#) of whether dopamine is in play, it's probably useful advice,” Namboodiri said. But he noted that “as a field we are still pretty far from having a complete understanding” of dopamine and how to manipulate it in daily life.

DOPAMINE ADDICTION?

Some [rewarding](#) behaviours can cause problems in people's lives. Although activities like [gambling](#), watching pornography and playing video games don't stimulate as much dopamine release as drugs do, they can lead to patterns of behaviour similar to those seen in substance use disorder — [namely](#), continuing the activity despite severe negative consequences. But that is the exception, not the rule. Most people are not losing their jobs or

relationships or experiencing negative health impacts because of these activities. Roughly 2 per cent to 3 per cent of people who watch pornography report being addicted to the behaviour. Similarly, 2 per cent to 3 per cent of people who play online games qualify as having internet gaming disorder. "For some people, yes, this is a problem," Berridge said. "It's not a problem for most people. We can function in the world and enjoy this [reward](#)-rich world." As with most things related to health, the key is moderation. You don't have to deny yourself pleasure to be a good or healthy person. And while dopamine is involved in addiction, compulsions to use drugs or masturbate are more complicated than a single neurotransmitter. "To say that it's only dopamine is an oversimplification," Lembke said. In fact, experimental attempts to treat addiction by altering dopamine activity in the brain haven't worked. These types of compulsive behaviours are also often accompanied by other mental illnesses or extreme stress during childhood. "Unless you're using a drug like cocaine, which is probably [blanketly](#) unhealthy, there's not necessarily a healthy or unhealthy way to use dopamine," Lerner said. "It's just about learning. And you can always learn something good, you can always learn something bad." Or, as Berridge put it, "dopamine is our friend, not just our enemy." **Published in The New York Times on June 30, 2023. Reprinted with permission.**

Glossary

- **rewire** = rifare l'impianto elettrico di
- **spikes** = picchi
- **reward** = ricompensa
- **attention spans** = durata dell'attenzione
- **blown out of proportion** = esagerare
- **misconceptions** = idee sbagliate
- **inferred** = dedurre
- **blanketly** = in modo esteso
- **gambling** = gioco d'azzardo
- **the rationale goes** = secondo la logica
- **swear off** = smettere, rinunciare
- **hijack** = sequestrare, monopolizzare
- **board games** = giochi da tavolo
- **we crave** = bramare
- **slower-paced** = ritmo più lento
- **lest** = per timore che, affinché non
- **habit-forming** = che provoca dipendenza
- **set off releases** = provocare una liberazione
- **outcome** = conseguenza
- **hooked on** = andare in fissa per
- **high** = sballo, eccitazione
- **eliciting** = provocare
- **urge** = desiderio, urgenza
- **scarcity** = scarsità
- **fasting** = digiuno
- **If the advice that someone's giving you about what you should do holds** = se il consiglio regge
- **regardless** = in ogni caso, a prescindere
- **pursuits** = attività
- **giving in** = cedere
- **rodents** = roditori
- **seek out** = cercare
- **to shut off** = interrompere

- **that numb** = intorpidire
- **surge** = impennata
- **namely** = ossia, vale a dire