

Microdosing LSD: can it help or harm mental health?

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Microdosing has become trendy in the era of drug legalization, with TV shows like "Nine Perfect Strangers" promoting the potential positives of regularly taking tiny amounts of psychedelics.

But a new study finds that short-term microdosing of one hippy-era psychedelic, LSD, doesn't appear to cause any lasting or dramatic improvements to a person's disposition or brainpower, researchers report in the journal [Addiction Biology](#).

"The results were a little bit disappointing in that we didn't see any dramatic improvements in mood or cognition, or really any lasting changes on any of the measures that we looked at," said lead researcher Harriet de Wit, a professor of psychiatry and behavioral neuroscience at the University of Chicago.

In the study, 56 participants were randomly chosen to repeatedly receive either a placebo or an extremely low dose of LSD, 13 or 26 micrograms.

In comparison, people take doses as large as 100 to 200 micrograms to induce a [hallucinogenic](#) trip, de Wit said. LSD, short for [lysergic acid diethylamide](#), was first synthesized in the 1930s and the U.S. Central Intelligence Agency employed it during the Cold War in mind control experiments. In the 1960s, it emerged as a counterculture symbol.

Participants in the new study were provided their microdoses during four separate five-hour sessions in a laboratory, with three or four days in between. They weren't told what sort of drug was being tested, to keep their personal expectations from affecting the study results, de Wit said.

To assess their mood and [mental performance](#), participants completed brain tests and emotional tasks during their microdose sessions and at a drug-free follow-up session.

[The study](#) did find that microdosing LSD is safe, with no [negative effects](#) to heart rate, blood pressure or other vital signs.

But participants appeared to build a tolerance to LSD over the course of

the study, with the drug effect appearing to diminish during each subsequent session.

"We did see some effect of the drug when people first got it," de Wit said. "They felt more stimulated. They felt more awake and energetic. But that effect kind of declined a little bit across the four sessions."

Although LSD is considered a Schedule 1 drug (substances with no currently accepted medical use and a high potential for abuse) by the U.S. Drug Enforcement Administration, microdosing has been promoted as a way to improve creativity, make one smarter or sharper, improve mood and sharpen social skills, experts said.

"You will find a claim of everything, probably up to and including improving your golf swing," when discussing the rumored benefits of microdosing, said Matthew Johnson, director of the Johns Hopkins Center for Psychedelic and Consciousness Research in Baltimore.

There's solid biological reason to suspect that microdosing LSD could have an effect on the brain, de Wit and Johnson said.

"LSD works on the serotonin system, and the serotonin system is also the same neurotransmitter where antidepressants like SSRIs work, so there's some neurobiological reason for thinking there might be some validity to it," de Wit said.

Unfortunately, the new research "adds to a line of a handful of studies that suggest that this phenomenon of microdosing is surely at least partially placebo effect," Johnson said. That's when a person's condition appears to improve after a dummy treatment.

"The relevant question is whether it's all placebo effect," he continued. "So far, no study has found really any evidence to pick up even a little

signal of the benefits of microdosing."

The concept of microdosing actually runs counter to modern [psychedelic drug](#) research, which is "based on this model of these high overwhelming doses causing this very overt psychedelic experience," Johnson said.

Studies using big doses of [psilocybin and other psychedelic substances](#) "are showing real promising effects for treatment," Johnson said.

Despite all this, neither de Wit nor Johnson is willing to say definitively that microdosing doesn't work at all, based on the results from research thus far.

Longer studies might eventually see a result from frequent microdosing, de Wit said, or researchers might find more of an effect in people suffering from a mood disorder like anxiety or depression.

"So many people swear by this that there might well be something there and we just missed it," de Wit said.

Johnson expects that depression treatment would be the most likely benefit that could come from [microdosing](#) LSD.

"It wouldn't be surprising at all that if a [drug](#) that affected your serotonin system could help your depression," Johnson said. "That's been the basis of typical antidepressant drugs for the last 70 or 80 years."

More information: Harriet Wit et al, Repeated low doses of LSD in healthy adults: A placebo-controlled, dose–response study, *Addiction Biology* (2022). [DOI: 10.1111/adb.13143](https://doi.org/10.1111/adb.13143)

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