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A single dose of psilocybin has a lasting therapeutic effect on migraine headache, according to a new placebo-controlled study

by [Eric W. Dolan](#) — May 18, 2021 in [Psychedelic Drugs](#)



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Scientists have started to investigate whether psilocybin, the primary substance responsible for the psychedelic effects of “magic” mushrooms, could be helpful to those who suffer from migraine headache. Their new findings, published in *Neurotherapeutics*, provide preliminary evidence that the drug could provide long-lasting therapeutic benefits to migraine sufferers.

Anecdotal reports have circulated for years that psilocybin lessens migraine symptoms. But there has been little scientific evidence to back the claims. The newly published research is the first double-blind, placebo-controlled study to examine whether psilocybin affects migraine disease.

“As a headache medicine physician, I see the need for a better understanding of headache disorders, including migraine, and the need for more treatment options. I’ve also studied the neuropharmacology of psychedelics for a number of years and appreciate their ability to help us understand more about the workings of the human brain,” explained study author Emmanuelle A. D. Schindler (@eadschindler), an assistant professor of neurology at Yale School of Medicine.

“When I learned that patients with certain headache disorders reported lasting improvements after just a single or few doses of psilocybin or other psychedelics, it made me wonder whether these drugs couldn’t help us better understand the underlying pathology in headache disorders, as well as serve as a new form of treatment.”

In the study, seven women and three men who suffered from frequent migraines first consumed a placebo capsule. At least two weeks later, they consumed a capsule containing a low dose of psilocybin. Both the participants and the research staff were unaware of which capsule contained the placebo and which capsule contained psilocybin. Two weeks before their placebo dose, the participants started to maintain a daily diary of their headache symptoms. They maintained this diary until two weeks after the active dose of psilocybin.

Schindler and her colleagues found that psilocybin was associated with a greater reduction in the frequency of migraines compared to placebo in the two weeks after capsule ingestion. Psilocybin was also associated with reductions in both headache pain severity and migraine-related functional impairments.

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“This study is very preliminary and does not serve as a guide for how to manage migraine with psilocybin, but it does offer some important information. In this study, the effects of psilocybin on migraine (the disorder, not a single attack) were investigated. Psilocybin had a lasting effect on migraines, similar to the effect of taking a daily preventive medication, but psilocybin was only given a single time in this study,” Schindler told PsyPost.

“There is no other oral treatment that can do this. Furthermore, the dose in this study was a low dose, only minimally psychedelic, and people did not have to have a strong (or any) psychedelic experience when they took the drug to have a reduction in their migraine burden over the next couple weeks. This suggests that the acute effects of the drug while it’s in your body are not related to the improvement in migraine in the following weeks.”

The findings are in line [with another study](#), published in 2015 by Schindler and her colleagues, which found that psilocybin mushrooms were being used to prevent and treat another type of painful headache disorder known as cluster headache, and were rated as more effective than conventional treatments. “Importantly, the doses used in cluster headache are typically on the low end and patients frequently express a dislike of taking higher doses,” Schindler noted.

Despite the promising findings, Schindler said that “there is a lot more research that needs to be done.”

“Different doses need to be studied and the effects and safety of repeating drug administration also need to be investigated,” she explained. “Ultimately, we still need to identify the doses and regimens that are safe and effective in managing migraine over the long-term. Migraine is a disease that stays with patients for decades, so we have to consider whether and how psilocybin might have a role in such a condition.”

“Migraine is also one of over a hundred distinct disorders that involve head and face pain, so what is learned here does not necessarily apply to these other disorders,” Schindler added. “It’s important to remember that there is no silver bullet when it comes to headache management. There are so many factors that contribute to migraine, including the brain, body, immune system, genetics, and environment, and there is no single treatment that will address all of them.”

“Psilocybin and related compounds might simply be added to the toolbox of treatment options. What we learned from this study though, is that psilocybin seems to work in a new way compared

to other treatments, which is more valuable than simply replicating an already existing form of treatment.”

There were no serious adverse side effects reported by the participants. However, that doesn’t mean that psychedelic substances are completely safe. The participants underwent extensive physical and mental health screenings prior to the study, and they consumed psilocybin in a controlled setting.

“Psilocybin and other psychedelics are very powerful substances and can have significant physical and psychological consequences. Under certain conditions they can be safe, but this is not a group of compounds to be taken lightly,” Schindler said.

“We’re still learning how these drugs work and what they do to your body and mind, particularly over the long term. Researchers in the field are obsessed with safety because we know the great potential for these drugs to serve as medicines and don’t want to see their reputation tainted by unsafe practices (personal or commercial). Psychedelics are just re-emerging from decades of misunderstanding, fear, and stigma, and it won’t take much for them to fall prey to those influences again.”

The study, “[Exploratory Controlled Study of the Migraine-Suppressing Effects of Psilocybin](#),” was authored by Emmanuelle A. D. Schindler, R. Andrew Sewell, Christopher H. Gottschalk, Christina Luddy, L. Taylor Flynn, Hayley Lindsey, Brian P. Pittman, Nicholas V. Cozzi, and Deepak C. D’Souza.

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