

Psychedelics: What Are the Risks?

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President Richard Nixon's 1970 Controlled Substances Act (CSA) classified then-prominent psychedelics as having "no currently accepted medical use" and a "high potential for abuse."¹ However, research has shown that the classic psychedelics are virtually non-addictive as a drug class, and most have a very low toxicity to the body's organs.

Studies have also shown that many of these substances can effectively treat a variety of mental health conditions. But these studies have been conducted in controlled environments with trained guides who have knowledge of the patient's medical and psychiatric history. Context is highly important in determining the outcome of a psychedelic experience: depending on the person involved in the experience, and their preparation, environment, substance, and dosage, potential risks may arise.

Underlying Medical Conditions

The unique physiology and psychology of each individual user affects how their body and brain react to a psychedelic substance. While research shows that some psychedelics can be used to treat mental health conditions, including anxiety and depression, there's also evidence that these substances can exacerbate certain psychiatric and medical conditions.

Psychiatric histories or vulnerabilities: Individuals with a personal history of bipolar disorder or psychosis, with a first-degree relative having such a history, or with recent suicidal ideation may be at increased risk of psychiatric harm from taking a psychedelic.

Cardiovascular Conditions

Though long-term studies suggest that lifelong use of classical psychedelics can reduce risk of hypertension, they also generally raise cardiac output, increasing heart rate and systemic and diastolic blood pressure.² Those at risk for cerebrovascular events, such as strokes or aneurysms, may have an elevated risk while on these psychedelics. Ibogaine is particularly risky for those with preexisting cardiac issues, because it can cause an irregular heartbeat.³ There are numerous reports in the scientific literature of fatal cardiac events attributed to ibogaine. Other side effects range from nausea and tremors to (less commonly) psychosis and mania to seizures and comas.⁴

Hyperthyroidism

Because hyperthyroid states are stimulant states produced by an overactive thyroid gland, many psychedelics could exacerbate that activity and induce a condition called hyperthyroid toxicosis, with symptoms including heat intolerance, palpitations, anxiety, fatigue, weight loss, and muscle weakness. Similarly, some psychedelics can also induce hyperthermia, or unusually high temperature, in users with hyperthyroidism. In 2007, Canadian researchers published a paper on a twenty-four-year-old woman who died while on MDMA. A post-mortem examination found that she had undiagnosed hyperthyroidism, and researchers suggested that the combination of MDMA and hyperthyroidism may have led to her death.⁵

Antidepressants

SSRI (selective serotonin reuptake inhibitors) antidepressants and MAOIs (monoamine oxidase inhibitors) are both drugs that increase serotonin levels. Classic psychedelics like psilocybin, LSD, and DMT produce mind-altering effects through interacting with serotonergic receptors, especially the 5-HT_{2A} receptor.⁶ When combined with these drugs, there's a risk of serotonin syndrome, which can lead to anxiety, hypertension, seizures, stroke, and even death.

(An exception is ayahuasca, a plant-based combination of DMT and certain MAOIs, which is not by itself associated with serotonin syndrome.) For similar reasons, experts recommend avoiding psychedelics while taking major tranquilizers used for depression, antipsychotics, and most major psychiatric drugs.

Potential Risks

Potency and Adulterated Substances

The effects of a psychedelic substance can vary considerably depending on a number of factors, including the user's expectations, the amount taken, possible impurities, and the setting in which it's taken. The possibility of an adulterated substance also increases the risk of the user having a stronger and/or a different experience than intended; there are even reports of deaths attributed to adulterated psychedelics. The potency of natural substances like mushrooms can vary widely by strain and by specimen. Taking a very high dose of a psychedelic, no matter how pure, is associated with a higher likelihood that the experience will be upsetting, jarring, or traumatic.⁷ For this reason, experts advise starting with a low dose and, if possible, getting a substance tested at a lab before use.

Environmental Risks

Someone undergoing a psychedelic experience has a shifted sense of reality, and they may respond adversely to unexpected internal or external cues. People under the influence of psychedelics may act in ways that are harmful to themselves or others. Therefore, experts advise setting intentions prior to experience, controlling the environment, and enlisting either a trained guide or a "sitter" to ensure safety. Failing to prepare adequately increases the risk of a challenging, traumatic, or even physically dangerous trip.

Sexual Abuse

Patients undergoing psychedelic therapy are unusually vulnerable. They have trusted their guides to lead them through a highly suggestible, altered mental state. This creates a power imbalance that risks being abused, as recent lawsuits and media accounts have illuminated. In 2018, Meaghan Buisson, a patient in an MDMA trial for treatment of her post-traumatic stress disorder, filed a civil case alleging that her guide, Richard Yensen, had sexually assaulted her during the clinical trial period.⁸ The case was later settled out of court. In 2019, the Multidisciplinary Association for Psychedelic Studies (MAPS) published a Code of Ethics⁹ that prohibits any sexual contact between therapy providers and participants. Twenty-six states and the District of Columbia have laws prohibiting sexual relationships between psychotherapists and patients.¹⁰

1. "Definition of Controlled Substance Schedules." U.S. Drug Enforcement Administration, Diversion Control Division. <https://www.deadiversion.usdoj.gov/schedules/#define>.
2. Simonsson, Otto, Peter S. Hendricks, Robin Carhart-Harris, Hannes Kettner, and Walter Osika. "Association Between Lifetime Classic Psychedelic Use and Hypertension in the Past Year." *Hypertension* 77, no. 5 (2021): 1510–16. <https://doi.org/10.1161/HYPERTENSIONAHA.120.16715>.
3. Koenig, Xaver, and Karlheinz Hilber. "The Anti-Addiction Drug Ibogaine and the Heart: A Delicate Relation." *Molecules* 20, no. 2 (2015): 2208–28. <https://doi.org/10.3390/molecules20022208>.
4. Köck, Patrick, Katharina Froelich, Marc Walter, Undine Lang, and Kenneth M. Dürsteler. "A Systematic Literature Review of Clinical Trials and Therapeutic Applications of Ibogaine." *Journal of Substance Abuse Treatment* 138 (July 2022): 108717. <https://doi.org/10.1016/j.jsat.2021.108717>.
5. Martin, Teri L., David A. Chiasson, and Stephen J. Kish. "Does Hyperthyroidism Increase Risk of Death Due to the Ingestion of Ecstasy?" *Journal of Forensic Sciences* 52, no. 4 (2007): 951–53. <https://doi.org/10.1111/j.1556-4029.2007.00463.x>.
6. de Vos, Cato M. H., Natasha L. Mason, and Kim P.C. Kuypers. "Psychedelics and Neuroplasticity: A Systematic Review Unraveling the Biological Underpinnings of Psychedelics." *Frontiers in Psychiatry* 12 (2021): 724606. <https://www.frontiersin.org/articles/10.3389/fpsy.2021.724606/full>.
7. De Mio, Terry, and Valerie Royzman. "UPDATE: Fake Ecstasy, Other Adulterated Street Drugs May Be Tied to 11 Fatal ODs in Hamilton County." *Cincinnati Enquirer*, May 30, 2019. <https://www.cincinnati.com/story/news/2019/05/29/ohio-overdose-deaths-surge-over-weekend-cocaine-fentanyl-factor/1268888001/>.
8. "Statement: Public Announcement of Ethical Violation by Former MAPS-Sponsored Investigators." Multidisciplinary Association for Psychedelic Studies (MAPS), May 24, 2019. <https://maps.org/2019/05/24/statement-public-announcement-of-ethical-violation-by-former-maps-sponsored-investigators/>.
9. "MAPS Code of Ethics for Psychedelic Psychotherapy." Multidisciplinary Association for Psychedelic Studies (MAPS), Version 7, January 7, 2021. https://maps.org/wp-content/uploads/2022/06/MAPS_Psychedelic_Assisted_Psychotherapy_Code_of_Ethics_V4_22_June_2022_Final.pdf.
10. MacIntyre, Michael R., and Jacob M. Appel. "Legal and Ethics Considerations in Reporting Sexual Exploitation by Previous Providers." *Journal of the American Academy of Psychiatry and the Law Online* 48, no. 2 (June 2020): 166–75. <https://pubmed.ncbi.nlm.nih.gov/32051200/>.