IBOGAINE

Ibogaine (12-methoxyibogamine) is a naturally occurring psychoactive compound found in the root bark of the iboga plant (*Tabernanthe iboga*) indigenous to central west Africa, specifically Gabon, Cameroon, and Republic of Congo. For thousands of years, ethnic and religious groups in these regions have consumed the root bark of the iboga plant, during ceremonies and rituals, for its psychoactive effects. The first time that a chemist extracted and isolated ibogaine from the iboga plant was in 1901. Throughout the 20th Century, scientists studied ibogaine and found that the substance could be effective at treating substance use disorder (SUD) and managing symptoms of withdrawal, but the scheduling of ibogaine in the U.S. in 1970 as a Schedule I controlled substance has made research of the substance difficult and costly. In recent years, there has been a renewed interest in ibogaine as scientists and addiction medicine specialists search for new ways to treat SUD.

EFFECTS OF IBOGAINE IN HUMANS

Research shows that ibogaine acts as a stimulant in low doses and as a psychedelic in higher doses. Scientists do not fully understand how ibogaine works in the brain, but they know that the substance interacts with numerous neurotransmitters in the central nervous system.[1] Neuroimaging studies suggest that ibogaine stimulates the growth of new nerve cells and promotes neuroplasticity, which is the brain's ability to change its structure and function through the formation of new connections and pathways. Neurologists often refer to neuroplasticity as a rewiring of the brain that allows humans to learn from and adapt to new environments and experiences. Ibogaine's effects are prolonged, beginning a half hour to three hours after ingestion and can last more than 24 hours. In comparison, the effects of psilocybin, the main psychoactive component in magic mushrooms, typically last up to six hours, and the effects of mescalin and peyote typically last up to eight hours. Because of ibogaine's long lasting effects, the substance is not used recreationally or as a "club drug" like other psychedelics.

Individuals who have used ibogaine report experiencing a dream-like state with visual and sensory distortions. Some individuals describe seeing a slideshow of memories in their heads while under the influence of ibogaine. After the peak effects of the substance abate, users report going through a period of reflection and report having residual effects lasting up to 72 hours that include heightened awareness, mild stimulation, and disturbed sleep. A side effect of ibogaine is cardiac arrhythmia, or irregular heartbeat, which can be fatal. This makes the use of the substance particularly risky for individuals with preexisting heart problems. There has been a total of 33 ibogaine-related deaths publicly reported in scientific literature to date.[2] The majority of the ibogaine-related deaths occurred in unsafe settings that did not have access to proper medical monitoring or cardiac life support capabilities, including unregulated ibogaine treatment facilities outside of the United States.[3] Most of the individuals who died were at an increased risk of adverse events due to the presence of heart disease, a history of taking certain heart medications, and polydrug use.[4] Furthermore, some of the individuals were using impure or adulterated ibogaine products.[5] Other side effects of ibogaine use include nausea and tremors and less commonly, psychosis, mania, and seizures.

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[1] Neurotransmitters are chemical messengers within the body that signals from one nerve cell to a target cell, which could be another nerve cell, a muscle cell or a gland. The neurotransmitters that ibogaine interacts with include acetylcholine, serotonin, dopamine, and glutamate. "Neurotransmitters," Cleveland Clinic, last modified Mar. 14, 2022, https://my.clevelandclinic.org/health/articles/22513-neurotransmitters.
[2] Matthias Luz and Deborah C. Mash, "Evaluating the Toxicity and Therapeutic Potential of Ibogaine in the Treatment of Chronic Opioid Abuse," *Expert Opinion on Drug Metabolism & Toxicology* 17, no. 9 (2021): 1020, https://doi.org/10.1080/17425255.2021.1944099.
[3] *Id.*
[4] *Id.*
[5] *Id.*

REGULATION OF IBOGAINE

In the United States, ibogaine is categorized as a Schedule I controlled substance along with other psychedelic and hallucinogenic substances, including LSD, mescaline, peyote, and MDMA.[6] Ibogaine's Schedule I status limits researchers' ability to conduct clinical research on the substance and patients' ability to access ibogaine for medical purposes.[7] Researchers must receive permission from the U.S. Drug Enforcement Administration for any research in which they obtain, synthesize, or distribute a Schedule I drug, and in some studies, such as clinical trials, the researchers may also require approval from the U.S. Food and Drug Administration.[8] Federal law limits the use of federal funding for the research of Schedule I controlled substances for any activity that promotes the legalization of any Schedule I drug, except when there is significant medical evidence of a therapeutic advantage to the use of such drug or federally sponsored clinical trials are being conducted to determine therapeutic advantage.[9]

Forty-six states and the District of Columbia classify ibogaine as a Schedule I controlled substance. In Alaska, all psychedelics, including ibogaine, are classified as Schedule II controlled substances. In Maine, ibogaine is a Schedule X[10] drug and in Massachusetts, it is a Class C[11] drug. Vermont regulations list ibogaine in the state's regulated drug rule.[12] In Colorado and the District of Columbia, ibogaine, despite being a Schedule I controlled substance, is decriminalized for certain populations. For example, in Colorado, ibogaine is considered a "natural medicine" along with psilocybin, psilocin, dimethyltryptamine (DMT), and mescaline,[13] and the Colorado Natural Medicine Code allows for the personal use and cultivation of natural medicines and the operation of state-licensed businesses known as "healing centers." Healing centers are facilities licensed by the state that permit a facilitator to provide and supervise natural medicine services for a participant.[14] Under the Colorado Natural Medicine Code it is unlawful to: (1) knowingly transfer natural medicine to a person under the age of 21; or (2) knowingly adulterate or alter, or attempt to adulterate or alter, any sample of regulated natural medicine for the purpose of circumventing testing requirements.[15] An individual who is under the age of 21 who knowingly possesses or consumes natural medicine commits a petty drug offense and is subject to a fine and an order to undergo substance use education or counseling.[16] Additionally, open and public display or consumption of natural medicine is a petty drug offense subject to a fine and community service.[17] Individuals that cultivate natural medicine for personal use are limited to an area of no more than 12 feet wide by 12 feet long on their private property, and the cultivation must occur in an enclosed and locked space.[18] Moreover, Colorado law prohibits an insurance carrier that offers, issues, or renews a health benefit plan from declining or limiting coverage for an individual solely on the basis of the individual's consumption of natural medicine.[19] In the District of Columbia, ibogaine is considered an "entheogenic (*i.e.*, psychoactive) plant."[20] The law allows the Metropolitan Police Department to investigate and arrest individuals 18 years of age or older for non-commercial planting, cultivating, purchasing, transporting, distributing, engaging in

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[6] 21 U.S.C. § 812.
[7] CONGRESSIONAL RESEARCH SERVICE, THE CONTROLLED SUBSTANCES ACT (CSA): A LEGAL OVERVIEW FOR THE 119TH CONGRESS 35 (Jan. 22, 2025), https://www.congress.gov/crs-product/R45948.
[8] *Id. See also* "How a Drug's Schedule I Status Restricts Research," R Street, last modified July 2023, https://www.rstreet.org/wp-content/uploads/2023/07/FINAL-schedule-1-restricted-research.pdf.
[9] Pub. L. No. 117-328, div. H, § 509.
[10] In Maine, Schedule X includes other hallucinogenic drugs, including mescaline, peyote, and psilocybin, as well as Methaqualone, Gamma hydroxybutyrate (GHB), and ketamine. ME. REV. STAT. ANN. tit. 17, § 1102 (West 2024).
[11] In Massachusetts, Class C includes other hallucinogenic drugs, including mescaline, peyote, and psilocybin, as well as tetrahydrocannabinols. MASS. GEN. LAWS ANN. ch. 94C, § 31 (West 2024).
[12] Vermont's regulated drug rule designates drugs and other chemical substances that are illegal or judged to be potentially fatal or harmful for human consumption unless prescribed and dispensed by a professional licensed to prescribe or dispense them and used in accordance with the prescription.
[13] COLO. REV. STAT. § 44-50-103 (West 2025).
[14] *Id.*
[15] COLO. REV. STAT. § 44-50-501 (West 2025).
[16] COLO. REV. STAT. § 18-18-434 (West 2025).
[17] *Id.*
[18] *Id.*
[19] COLO. REV. STAT. § 10-16-162 (West 2025).
[20] D.C. CODE ANN. § 48-921.52 (West 2025).

practices with, and/or possessing entheogenic plants but requires that such investigations and arrests fall within its lowest enforcement priorities.[21]

Seven states (Arizona,[22] Kentucky,[23] Nevada,[24] New York,[25] Oregon,[26] Texas,[27] and Washington[28]) introduced legislation in 2025 related to ibogaine in an attempt to expand access to and research of the substance. The research proposed by these bills would further investigate ibogaine's potential as a treatment for SUD and certain neurological/mental health disorders, including traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD). In 2024, Kentucky proposed allocating $42 million from its opioid settlement funds toward ibogaine research, but the Kentucky Opioid Abatement Advisory Commission voted against that proposal.[29]

IBOGAINE RESEARCH

In 1962, Howard Lotsof, a 19-year-old suffering from opioid use disorder (OUD), received ibogaine from a friend who was a chemist. After consuming the ibogaine and experiencing the substance's effects, Lotsof claimed that he no longer had cravings for heroin and did not experience withdrawal symptoms. Lotsof then asked six of his friends with OUD to consume ibogaine, and he claimed that five of the six individuals immediately stopped using heroin after using ibogaine. Believing that ibogaine could be a powerful tool to treat SUD, Lotsof became a lifelong advocate for ibogaine and is credited with discovering ibogaine's potential for treating SUD. In 1983, Lotsof founded the Global Iboga Therapy Alliance (formally called the Dora Weiner Foundation) to promote scientific research for ibogaine, and in 1985 and 1992, he acquired patents for the use of ibogaine as a treatment for SUD. Between 1988 and 1993, U.S. and Dutch researchers published initial findings demonstrating the efficacy of using ibogaine to treat opioid and cocaine addiction in rats.[30] In the 1990s, the National Institute on Drug Abuse proposed a clinical trial to test the efficacy of ibogaine to treat SUD in humans, but due to contractual disputes and lack of financing, the clinical trial never came to fruition.

In the 21st century, scientists have developed a renewed interest in ibogaine in light of the U.S. overdose crisis and the search for effective ways to treat SUD. To avoid the complexities and barriers associated with studying a Schedule I controlled substance in the U.S., scientists have been conducting ibogaine research in countries were ibogaine is legal or unregulated, such as Mexico and New Zealand. A 2022 literature review of 24 ibogaine studies conducted between 1994 and 2020, which involved 705 individuals in total, suggests that ibogaine is an effective treatment for SUD due to the substance's ability to reduce withdrawal symptoms and cravings.[31] The literature review also noted ibogaine's potential in treating depression and trauma-related psychological symptoms.[32] A study published in 2024 by scientists from Stanford Medicine found that ibogaine reduced PTSD symptoms and

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[21] D.C. CODE ANN. § 48-921.52 (West 2025).
[22] H.B. 2871, 57th Leg., 1st Reg. Sess. (Ariz. 2025).
[23] S.B. 240, 2025 Gen. Assemb., Reg. Sess. (Ky. 2025).
[24] S.J.Res. 10, 83rd Leg., Reg. Sess. (Nev. 2025); and A.B. 378, 83rd Leg., Reg. Sess. (Nev. 2025).
[25] S. 4664, 2025-2026 Leg. Sess. (N.Y. 2025); S. 1817/A. 1522, 2025-2026 Leg. Sess. (N.Y. 2025); and A. 628, 2025-2026 Leg. Sess. (N.Y. 2025).
[26] H.B. 3817, 53rd Leg. Assemb., 2025 Reg. Sess. (Or. 2025).
[27] S.B. 2308/H.B. 3717, 89th Leg., Reg. Sess. (Tex. 2025)
[28] S.B. 5204, 69th Leg., 2025 Reg. Sess. (Wash. 2025); S.B. 5201/H.B. 1433, 69th Leg., 2025 Reg. Sess. (Wash. 2025); and H.B. 1197/S.B. 5166, 69th Leg., 2025 Reg. Sess. (Wash. 2025).
[29] Morgan Watkins, "Kentucky Backs Away from Plan to Fund Opioid Treatment Research with Settlement Money," *NPR*, Jan. 7, 2024, https://www.npr.org/2024/01/11/1223380761/kentucky-backs-away-from-plan-to-fund-opioid-treatment-research-with-settlement.
[30] E.D. Dzolijic, et al., Effect of Ibogaine on Naloxone-precipitated Withdrawal Syndrome in Chronic Morphine-dependent Rats," *Archives Internationales de Pharmacodynamie et de Therapie* 294 (1988): 64-70, https://europepmc.org/article/med/3233054.; S.D. Glick, et al., "Effects and Aftereffects of Ibogaine on Morphine Self-administration in Rats," *European Journal of Pharmacology* 195, no. 3 (1991): 341-345, https://doi.org/10.1016/0014-2999(91)90474-5.; Stanley D. Glick, et al., "Differential Effects of Ibogaine Pretreatment on Brain Levels of Morphine and (+)-Amphetamine," *Brain Research* 588, no. 1 (1992): 173-176, https://doi.org/10.1016/0006-8993(92)91360-Q.; Susanne L.T. Cappendijk and Michailo R. Dzoljic, "Inhibitory Effect of Ibogaine on Cocaine Self-administration in Rats," *European Journal of Pharmacology* 241, no. 2-3 (1993): 261-265, https://doi.org/10.1016/0014-2999(93)90212-Z.
[31] Patrick Köck, et al., "A Systematic Literature Review of Clinical Trials and Therapeutic Applications of Ibogaine," *Journal of Substance Abuse Treatment* 138 (2022), https://doi.org/10.1016/j.jsat.2021.108717.
[32] *Id.*

improved functioning in U.S. veterans with TBI.[33] The 30 veterans who participated in the Stanford study received medically supervised ibogaine treatment at an ibogaine clinic in Mexico operated by Ambio Life Sciences.[34] The study participants received magnesium during their treatment to help prevent any heart complications that have been known to occur with ibogaine use.[35] Participants reported a reduction in PTSD, depression, and anxiety symptoms as well as improved concentration, information processing, and memory one month after treatment.

In 2025, scientists at the University of California, Davis reported that they were able to synthesize[36] ibogaine and ibogaine analogues[37] from pyridine, a relatively inexpensive and widely available chemical.[38] Because ibogaine is a plant derived substance, it is a finite resource, so the ability to synthesize ibogaine in a laboratory from other materials allows scientists to continue to study ibogaine without being dependent on the iboga plant. This also helps to ensure that the iboga plant will not be overharvested or poached and will remain available to ethnic groups in Africa that use the plant for ceremonial and religious purposes.

CONCLUSION

While ibogaine shows promise as a treatment for SUD and other neurological/mental health disorders, most of the findings have come from small studies. To fully understand the efficacy of ibogaine, more extensive clinical trials are needed. Ibogaine research in the U.S. will likely increase as states make efforts to incentivize and fund such research. However, research hurdles will remain in place due to ibogaine's classification as a Schedule I controlled substance on the federal level.

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[33] Kristen N. Cherian, et al., "Magnesium-ibogaine Therapy in Veterans with Traumatic Brain Injuries," *Nature Medicine* 30 (2024): 373-381, https://doi.org/10.1038/s41591-023-02705-w.
[34] *Id.*
[35] *Id.*
[36] Synthesis is the production of chemical compounds through reactions involving other materials.
[37] An analog is a substance that is similar, but not identical, to another.
[38] Greg Watry, "UC Davis Researchers Achieve Total Synthesis of Ibogaine," *UCDavis*, Feb. 6, 2025, https://www.ucdavis.edu/health/news/uc-davis-researchers-achieve-total-synthesis-ibogaine.

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