

## Magic mushrooms

Use of psychoactive substances is documented in the earliest human records. These substances have been used in religious ceremonies, and recreationally for thousands of years (*Fungal Biol.* 2022;126(4):308-19). Recent research is investigating the therapeutic potential of psilocybin in treating or aiding in the treatment of a wide range of conditions including depression, anxiety, addiction, pain disorders, and other mental health disorders (*Cureus.* 2022;14(2):e21944; *Molecules.* 2021;26(10):2948).

Psilocybin can be found in hundreds of species of mushrooms throughout the world. Psilocybin-containing mushrooms can be eaten fresh, dried, or cooked (psilocybin is heat stable), brewed into a tea and drank, or dried, mixed with cannabis or tobacco, and then smoked. When ingested or smoked, psilocybin is converted into its bioactive form, psilocin, a compound that is structurally similar to serotonin and binds to 5-HT<sub>2a</sub> receptors in the brain (*Fungal Biol.* 2022;126(4):308-19). This mechanism is thought to at least partly explain the psychotropic effects of these mushrooms (*Molecules.* 2021;26(10):2948).

The amount of psilocybin in each mushroom can vary widely and the amount ingested is not well correlated to clinical effects (*Fungal Biol.* 2022;126(4):308-19). Effects in individuals can be varied and may depend upon the setting in which the substance is used (*Cureus.* 2022;14(2):e21944). Common effects include dilated pupils (seen in > 90% of cases), tachycardia, drowsiness, euphoria, hallucinations, and distortion in senses (visual, touch, perception). "Bad trips" can occur resulting in paranoia, panic reaction, and acute psychosis. After smoking or ingesting psilocybin, effects are seen within 10 to 30 minutes and can persist for 4 to 5 hours with complete symptom resolution in 6 to 12 hours for most people. Rarely, hallucinations have persisted for up to 4 days, though hallucinogen persisting perception disorder, or flashbacks, can result in recurrent, intense hallucinations in the absence of repeat exposure. Flashbacks can occur 2 weeks to 8 months after exposure. In emerging therapeutic environments patients are educated on the psychedelic effects of the mushrooms prior to their first treatment, with subsequent treatment occurring in a carefully controlled setting to minimize the occurrence of a "bad trip." Management is primarily supportive care including treatment of dehydration, persistent vomiting, and agitation.

Recreationally, psilocybin-containing mushrooms are commonly referred to as magic mushrooms, shrooms, and mushrooms. These mushrooms are similar in appearance to other mushrooms, including those that can cause liver and kidney toxicity and death.

For treatment recommendations for psilocybin or any other poisoning, call your local poison center at 1-800-222-1222.



*Psilocybin cubensis*

### Did you know?

**Psilocybin containing mushrooms have variable legal status by jurisdiction.**

Hallucinogenic mushrooms remain a schedule I substance under federal law. On Jan 1, 2023, Oregon became the first state to legalize the use of psilocybin by adults. Colorado is currently in the process of implementing legalization there as well. Throughout the US various cities have decriminalized the use and possession of hallucinogenic mushrooms including Washington, DC, Seattle, Denver, and several cities in Massachusetts.

*Becca Mestas, PharmD, CSPI*

*Poison Specialist*



@MPCToxTidbits