

PSILOCYBIN

4-phosphor yloxy-N,N-dimethyltryptamine

Psilocybin is a hallucinogenic chemical in certain mushrooms that grow in Europe, South America, Mexico, and the United States ¹



The Signs of Life
PSYCHOLOGY

Integrating science and the sacred

LEGAL STATUS

Many Australian doctors have received Therapeutic Goods Administration (TGA) Special Access Scheme approvals for psilocybin-assisted therapies on a federal level. But, state-level regulations prohibits it.

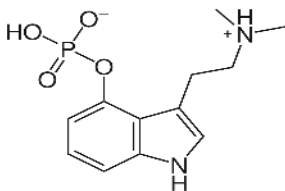
In Victoria, Psilocybin is classed as a schedule 9 substance and is thus considered a 'prohibited substance. This means that only authorised persons are medical practitioners, who must make an application to the Secretary of the Department of Environment and Primary Industries to administer psilocybin to their patient. ²

OFF-LABEL INDICATIONS

- Depression ³
- Anxiety ³
- Alcohol-use disorder ³

MECHANISMS OF ACTION

Psilocybin activates serotonin (5-hydroxytryptamine) type 2A (5-HT_{2A}) receptors in the brain to produce a "mystical-like" hallucinatory effect. This is due to increased activity in the frontal regions of the brain (hyper-frontality), which in turn mediates its anti-depressant and anti-anxiety effects ³



POSITIVE EFFECTS

- Feelings of euphoria ⁴
- Relieving symptoms of treatment-resistant depression ⁴
- Relieving symptoms of obsessive-compulsive disorder ⁴
- Help curb addiction to nicotine, alcohol, cocaine, and perhaps opioids. ⁴
- Treating depression and death anxiety ⁴

POTENTIAL RISKS

- Elevated blood pressure ⁵
- Increased heart rate ⁵
- Nausea ⁵
- Headache ⁵
- Physical discomfort ⁵
- Insomnia ⁵
- Diarrhea ⁵
- Can make psychological symptoms like anxiety, panic attacks, paranoia, and mood swings seem worse ⁵

Psilocybin has been used by native peoples of Central and South America for ceremonial purposes for centuries to facilitate spiritual experiences ⁶

Psilocybin has a lower risk for addiction and harmful neurological effects compared to other novel interventions such as ketamine ⁶

PSILOCYBIN-ASSISTED PSYCHOTHERAPY

Psilocybin-Assisted Therapy is the term for the use of psilocybin, as a pharmacological agent. It is one of several varieties of psychedelic therapy. ⁷

Psilocybin-assisted therapy is considered a unique type of antidepressant intervention, according to evidence of its antidepressive effects in patients with life-threatening cancer or major depressive disorder that is resistant to regular treatment. ⁷

DOSING

Treatment generally consists of a single dosing session consisting of 25 mg of psilocybin given in a medically supervised and supportive setting. ³ Studies show, higher doses of psilocybin (20-30 mg/70 kg) correlate to positive effects on behaviour, attitude, mood, and general outlook on life for up to 14 months. ³

- Individuals are screened for specific physiological and psychological health criteria.
- Dose is also determined on risk profile.

Contraindicated conditions:

- Personal or family history of psychosis or psychotic disorder
- Known cardiovascular disease (e.g, hypertension, tachycardia, tachyarrhythmias) ⁸

1. Davis, K. (2021). Psilocybin and magic mushrooms: Effects and risks. www.medicalnewstoday.com. <https://www.medicalnewstoday.com/articles/308850>.
2. Watson, N., & Kotler, E. (2022). Psychedelic medicine and the law. *Precedent*, (168), 34-39. <https://search.informit.org/doi/10.3316/informit.385417342912185>
3. Lowe, H., Ngeh, T., Steele, B., Henkel, V., Grant, J., Amza, A., Ngwa, W., & Gordon, L. (2021). The Therapeutic Potential of Psilocybin. *Molecules*, 26(10), 2948. <https://doi.org/https://doi.org/10.3390/molecules26102948>
4. Ross, S., Bossis, A., Guss, J., Agin-Llebes, G., Malone, T., Cohen, B., Mennenga, S. E., Belsler, A., Kalliontzis, K., Babb, J., Su, Z., Corby, P., & Schmidt, B. L. (2016). Rapid and sustained symptom reduction following psilocybin treatment for anxiety and depression in patients with life-threatening cancer: a randomized controlled trial. *Journal of Psychopharmacology*, 30(12), 1165-1180. <https://doi.org/10.1177/0269881116675512>
5. Zeiss, R., Gahr, M., & Graf, H. (2021). Rediscovering Psilocybin as an Antidepressive Treatment Strategy. *Pharmaceuticals*, 14(10), 985. <https://doi.org/10.3390/ph14100985>
6. Reiff, C.M., Richman, E.E., Nemeroff, C.B., Carpenter, L.L., Widge, A.S., Rodriguez, C.I., Kalin, N.H. and McDonald, W.M. (2020). Psychedelics and Psychedelic-Assisted Psychotherapy. *American Journal of Psychiatry*, 177(5), 391-410. doi:10.1176/appi.ajp.2019.19010035.
7. Rucker, J., Jafari, H., Mantingh, T., Bird, C., Modlin, N.L., Knight, G., Reinholdt, F., Day, C., Carter, B. and Young, A. (2021). Psilocybin-assisted therapy for the treatment of resistant major depressive disorder (PsiDeR): protocol for a randomised, placebo-controlled feasibility trial. *BMJ Open*, 11(12). doi:10.1136/bmjopen-2021-056091.
8. MacCallum, C. A., Lo, L. A., Pistawka, C. A., & Deol, J. K. (2022). Therapeutic use of psilocybin: Practical considerations for dosing and administration. *Frontiers in Psychiatry*, 13. <https://doi.org/10.3389/fpsy.2022.1040217>

PSILOCYBIN

NON-MEDICAL USES

COMMON STREET NAMES

- Mushrooms¹
- Magic Mushrooms¹
- Shrooms¹
- Purple Passion¹
- Boomers¹
- Buttons¹
- Caps¹
- Magic¹
- Hongos¹
- Alice¹



PRIMARY RISKS

- Hallucinations (visual or auditory)¹¹
- Distorted sense of time, place, and reality¹¹
- Increased heart rate, blood pressure, and temperature¹¹
- Muscle weakness¹¹
- Nausea, vomiting, and abdominal discomfort
- Headache¹¹
- Sense of panic¹¹
- Paranoia¹¹
- Psychosis¹¹

ROUTE OF ADMINISTRATION (*and onset of effects*)

- Eaten orally³
- Brewed into tea³
- Added to other foods³
- Intravenously (however it doesn't last as long in the body this way)³

The onset of effects is usually within 20–60 min and effects generally last 3–6 h, depending on dose, species, and individual metabolism.⁹

DOSAGE AND EFFECTS

High dosage: 22 mg/70 kg of psilocybin.¹⁰
Low dosage: 1-3 mg/70 kg of psilocybin.¹⁰

- Dosages depend on the potency of the mushroom and may change depending on the route of administrations indicated above.¹⁰
- Recreational doses range from 1 to 5 g of the dried mushrooms.¹⁰
- Delayed-onset headaches are another possible side-effect of full-dose psilocybin.¹⁰

FACTORS AFFECTING RISK PROFILE

- Repeated dosing.¹¹
- Mixing substances as the combined effects can be unpredictable and increase risk.¹¹

CLINICAL TRIALS

Recently Completed:

- **(2022)** A randomised clinical trial of Psilocybin-assisted therapy was conducted with 93 participants suffering from Alcohol Use Disorder.¹⁵
- **(2020)** The effects of Psilocybin-Assisted Therapy on Major Depressive Disorder (MDD) was conducted in a randomised clinical trial of 24 patients.¹²
- **(2018)** Clinical potential of psilocybin as a treatment for mental health conditions was investigated. Psilocybin was investigated for; suicidality and depressed mood, anxiety disorders, OCD, alcohol dependence, tobacco cessation.¹³
- **(2016)** Anxiety and depression are common in patients with cancer. A study for the role of psilocybin to treat cancer-related anxiety and depression was conducted in 29 patients receiving 0.3 mg/kg of psilocybin.¹⁴

Some studies have combined psilocybin with Cognitive Behavioral Treatment (CBT) for smoking cessation, Acceptance and Commitment Therapy (ACT) for treatment-resistant depression, or Motivational Enhancement Therapy (MET) for alcohol dependence.

However, it has been suggested that the offered psychotherapeutic model enhances the personal and meaningful experiences, and thereby the antidepressant effects, of psilocybin-assisted treatment⁶

9. Azmitia, E.C. (2012) *Brain Chemicals: Global Projections of Ancient Aromatic Neurotransmitters*. Encyclopedia of Human Behaviour, 2.

<https://www.sciencedirect.com/topics/neuroscience/psilocybin-mushroom>

10. Anderson, T., Petranker, R., Christopher, A. et al. (2019). *Psychedelic microdosing benefits and challenges: an empirical codebook*. Harm Reduction Journal, 16(43).

<https://doi.org/10.1186/s12954-019-0308-4>

11. Ziff, S., Stern, B., Lewis, G., Majeed, M., & Gorantla, V. R. (2022). *Analysis of Psilocybin-Assisted Therapy in Medicine: A Narrative Review*. Cureus, 14(2).

<https://doi.org/10.7759/cureus.21944>

12. Davis, A. K., Barrett, F. S., May, D. G., Cosimano, M. P., Sepeda, N. D., Johnson, M. W., Finan, P. H., & Griffiths, R. R. (2020). *Effects of Psilocybin-Assisted Therapy on Major Depressive Disorder: A Randomized Clinical Trial*. JAMA psychiatry, 78(5), 481-489. <https://doi.org/10.1001/jamapsychiatry.2020.3285>

13. Daniel, J., & Haberman, M. (2018). *Clinical potential of psilocybin as a treatment for mental health conditions*. The Mental Health Clinician, 7(1), 24-28.

<https://doi.org/10.9740/mhc.2017.01.024>

14. Griffiths, R. R., Johnson, M. W., Carducci, M. A., Umbricht, A., Richards, W. A., Richards, B. D., Cosimano, M. P., & Klinedinst, M. A. (2016). *Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: A randomized double-blind trial*. Journal of psychopharmacology, 30(12).

<https://doi.org/10.1177/0269881116675513>

15. Bogenschutz, M. P., Ross, S., Bhatt, S., Baron, T., Forchimes, A. A., Laska, E., Mennenga, S. E., O'Donnell, K., Owens, L. T., Podrebarac, S., Rotrosen, J., Tonigan, J. S., & Worth, L. (2022). *Percentage of Heavy Drinking Days Following Psilocybin-Assisted Psychotherapy vs Placebo in the Treatment of Adult Patients with Alcohol Use Disorder: A randomized clinical trial*. JAMA Psychiatry, 79(10), 953-962. doi:10.1001/jamapsychiatry.2022.2096