



Life & Health Underwriting Insights

Is microdosing the next medicinal cannabis?

Use of 'psychedelic' drugs for medical and performance purposes was once considered a fringe movement. However, like the explosion in the use of medical cannabis, microdosing has entered the public consciousness and its use has gathered pace. This UW Insight explores exactly what microdosing is **and** who is microdosing (spoiler alert: it's not just students). We dive into the perceived benefits and uses, both clinical and self-administered, the need for further study and implications for underwriters.

What is microdosing?

Microdosing is the practice of ingesting **very low doses** of psychedelic substances to improve wellbeing, mood and mental health, cognition, or interpersonal processes. These substances are consumed regularly, semi-regularly or for prolonged periods of time.

What quantity is considered a 'microdose'?

Currently there is no agreed definition of a microdose. **The most commonly accepted definition in the literature is a dose between one tenth and one twentieth of a typical recreation dose.** This is an imprecise range, and it is difficult to establish equivalent dose ranges across the different classes of psychedelics used.

What is the history of microdosing?

The therapeutic use of psychedelic substances emerged as local indigenous practices that were predominant in the precolonial Americas, but not exclusive to them. In the last century these indigenous

Figure 1 – Microdosing ranges³

Plausible dose ranges for microdoses of various substances

Compound	Typical recreational or therapeutic dose range	Intoxication threshold dose range	Plausible microdose dose range.
Psilocybe cubensis dried mushroom: PO	3–5 g	0.5–1.5 g	0.1–0.5 g
Psilocybin synthetic: PO	17–30 mg	3–8 mg	0.8–5 mg
LSD: PO	100–200 µg	25–25 µg	6–20 µg
DMT: IV [#]	14–28 mg/70 kg	3.5 mg/70 kg	0.7–3.5/70 kg
DMT: smoked	25 mg		8–9 mg
DMT: IM	50–70 mg/70 kg	30 mg/70 kg	6–25 mg/70 kg
Ibogaine Synthetic: IV [#]	1000–2000 mg/70 kg (possibly starting at 200 mg/70 kg)	100–210 mg/70 kg	20 mg/70 kg

Note: PO: per oral; IV: intravenous; IM: intramuscular; LSD: lysergic acid diethylamide, #: depends on infusion rate.

practices have been transformed from ritual use into a health and wellness trend in western countries. Research started with these compounds in 1950 **but was abruptly ended** in the United States in 1970 due to prohibitive public health disclosures related to adverse health consequences, with other nations following suit. In 2000 approval was obtained to restart research with psychedelics in the US. In the past five years there has been an increased interest in microdosing in Western countries due to its perceived benefits, namely, to increase creativity and productivity, or as an alternative treatment for psychiatric diseases including depression, anxiety, post-traumatic stress disorder and substance abuse amongst others.

How many people are estimated to microdose and why?

It is difficult to have an accurate estimate of how many people microdose due to the legal regulations of psychedelics that have an impact on disclosure. A study published in 2020 in the Journal of Psychoactive Drugs from the University of California¹ had the objective to assess the prevalence of psychedelic microdosing through an anonymous survey. They recollected 2347 responses, 59% of respondents were familiar with the concept, 17% were engaged in the practice, looking to improve their mood, decrease anxiety and enhance memory, attention, and sociability. But it's not only young people in California who have turned to microdosing. A study by UK life insurance broker LifeSearch found that over the COVID-19 pandemic there was a 43% increase in UK adults microdosing – **with 1 in 10 UK adults engaging in**

microdosing. This figure almost doubles for young people (aged 18–34). Whilst it's easy to write microdosing off as something students do, 20% of users reported that microdosing helps them cope with childcare responsibilities and 13% that it helps them perform better at work.²

What type of psychedelic substances are being used for microdosing?

Most commonly used:

- **LSD: Lysergic acid diethylamine (acid):** synthetic chemical made from a lysergic acid found in ergot, a fungus that grows on grains.
- **Psilocybin (magic mushrooms):** group of fungi from genus Psilocybe that contains psilocybin that it's a strong hallucinogenic.

Others used:

- **Mescaline:** comes from the peyote cactus (*Lophohora williamsii*) and the San Pedro cactus found in Latin America.
- **Dimethyltryptamine (DMT/ Ayahuasca):** is found in a variety of plants and is the psychoactive ingredient in the drug ayahuasca.
- **Salvia divinorum (magic mint):** is a plant species and its leaves, or extracts made from the leaves, are administered by smoking, chewing, or drinking.
- **Ibogaine:** it's a substance found in the plant family Apocynaceae found in central and west Africa.
- **3,4-methylenedioxy-methamphetamine MDMA (Ecstasy/Molly):** is a synthetic drug, an amphetamine analog.

What are the known risks?

The response to psychedelic drugs is considered unpredictable and is correlated to dosage. Current evidence does not establish a secure dose. In studies with controlled settings, most patients presented encouraging results, but in uncontrolled settings (real life use) adverse experiences were more frequently reported due to a higher dose used. Adverse experiences were associated with anxiety, neuroticism, low trust levels and risk of suicide. Currently there is not enough evidence available to confirm that microdosing with psychedelics is effective.

What is the evidence for microdosing's perceived benefits?

Whilst the number of studies is limited and mainly rely on self-reporting, there is evidence for a number of **effects on mental health, mental performance and pain management**. According to a review article published by Elsevier in May 2022³ of 44 studies published between 1955 and 2021 there is evidence of microdosing effects, with some being corroborated with lab studies.

A review article published by Nature in September 2022 and the American College of Neuropsychopharmacology⁴ concludes that preclinical data supports the theory of neuroplasticity induced by psychedelics. This has a window from a few hours to a few days, so experiences people have during this time can have greater psychological impact since neuroplastic changes occur in an experience-dependent manner.

Figure 2 – Current evidence for microdosing³
Current evidence for microdosing effects

Effects found in both self-report and lab studies	Effects found in self-report studies but not well investigated in lab studies	Effects found in self-report studies; investigated but not confirmed in lab studies
■ Altered time perception ■ Pain tolerance ■ Changes in conscious state	■ Improved mental health ■ Reduced substance use ■ Reduced mind wandering ■ Personal changes ■ Insight ■ Nature relatedness ■ Wellbeing ■ Improved creativity	■ Improved mood ■ Social connection ■ Improved cognition ■ Enhanced emotional processing ■ Increased energy

The need for further studies and acceleration of research

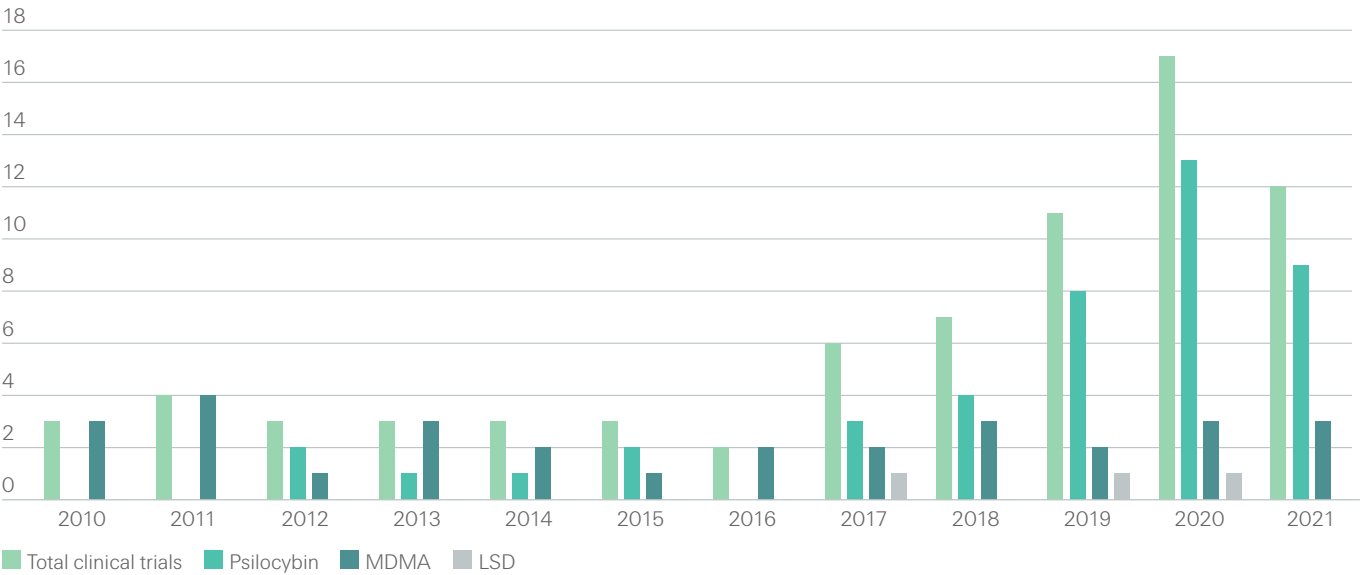
There is limited research currently available on the topic, but **in the past five years there have been an increasing number of studies.** While these recent studies have improved our understanding and confirmed some self-reported effects, there is still the need to determine if the reported effects are lasting, the efficacy and the safety of microdosing potential applications in psychiatry.

There is a need to shift towards studies of scientific rigour and replication. Current studies show a high level of heterogeneity making it difficult to extrapolate the results to the general population.

Currently, there are numerous ongoing studies and clinical trials that could broaden the insight to these questions. For example, Johns Hopkins created a Centre for Psychedelic and Consciousness Research⁵ to study psychedelics therapeutic effects in conditions such

as existential distress caused by life-threatening disease, major depressive disorder, anorexia nervosa, Post-Treatment Lyme Disease, depression associated with Alzheimer’s Disease, and obsessive-compulsive disorder. They are also studying healthy volunteers to have a deeper understanding of the neurophysiological mechanisms of action and non-therapeutic positive effects.

Figure 3 – Developments in clinical trials¹¹
“There has been an increase in clinical trials testing psilocybin, MDMA and LSD for use in psychiatric conditions, including depression, drug dependency and anorexia nervosa”



Are there any changes in psychedelic regulations?

Medical research being conducted on psychedelic use has created a movement in which **governments worldwide are starting to review regulations around specific psychedelic substances with a growing liberalisation of the regulation.** Markets like Canada, United States and Australia have updated regulations around psychedelic use in medical practice.

Some examples are:

- In United States, Oregon was the first state to legalise psilocybin in 2020 allowing from the 1st of January 2023, that psychotherapists are allowed to treat their patients with psilocybin.⁶

- July 2022, two amendments were passed in the US House of Representatives allowing the provision of psychedelic-assisted treatment to veterans and active-duty service personnel who suffer from PTSD.⁶
- January 2022, Health Canada made an amendment to allow physicians to request access to certain psychedelics for any serious, life-threatening, or treatment-resistant condition.⁶
- October 2022 it was announced that Alberta will be the first Canadian province to allow the use of psychedelic drugs solely for therapeutic use.⁷
- February 2023, Australian Therapeutic Goods Association authorise the use of MDMA for PTSD that has not responded to treatment and psilocybin for treatment resistant depression.⁸
- The European Medicines Agency (EMA) published a commentary of the therapeutic potential of psychedelics in The Lancet advocating for change in the classification of psychedelics, paving the way for further research.

It is possible that other countries will soon follow.

Key information Underwriters need to know:

- Microdosing is the practice of ingesting **very low doses** of psychedelic substances regularly in an attempt to improve wellbeing, mood and mental health, cognition, or interpersonal processes.
- The most common substances used for microdosing are **LSD and psilocybin**.
- Currently there is **no agreed definition of a microdose**.
- Further research is needed to have a better understanding of the **efficacy, safety, and potential applications** in psychiatry.
- As the trend of microdosing evolves, insurance companies should eventually consider **adapting underwriting questionnaires** to refer to microdosing.
- For underwriting we suggest **Individual consideration (IC)** for these cases due to the current lack of evidence and regulation associated to this practice that would enable a precise rating.

Unfavorable considerations to be aware of when underwriting:

	Unfavourable considerations
Reason for microdosing	Severe mental health conditions (treatment of last resort for failed treatments)
Dosage used	Greater than 1/10 of recreational dose according to psychedelic used
Frequency of microdosing	More than 2 times a week with a prolonged use
Age	< 20 years
Comorbidities	Other co-morbid impairments
Personal or Family history of drug/alcohol abuse	Yes
Environment	Risky behaviours e.g. gambling, financial difficulties, personal or work instability

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