

Alice in Wonderland

Not the Lewis Carroll's Version, however,
down a rabbit hole we go

Alice in Wonderland

January 23rd, 2024

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AGENDA

Where are we on Mental Health in the USA

Psychedelic History

Over 2 decades of Research from John Hopkins, Beckley UK, McGill and others

Concepts of Ego Dissociation and Neuroplasticity

Types, dosage, set & setting

Legal Status on Microdosing Psychedelics

Underwriting Considerations with Cases



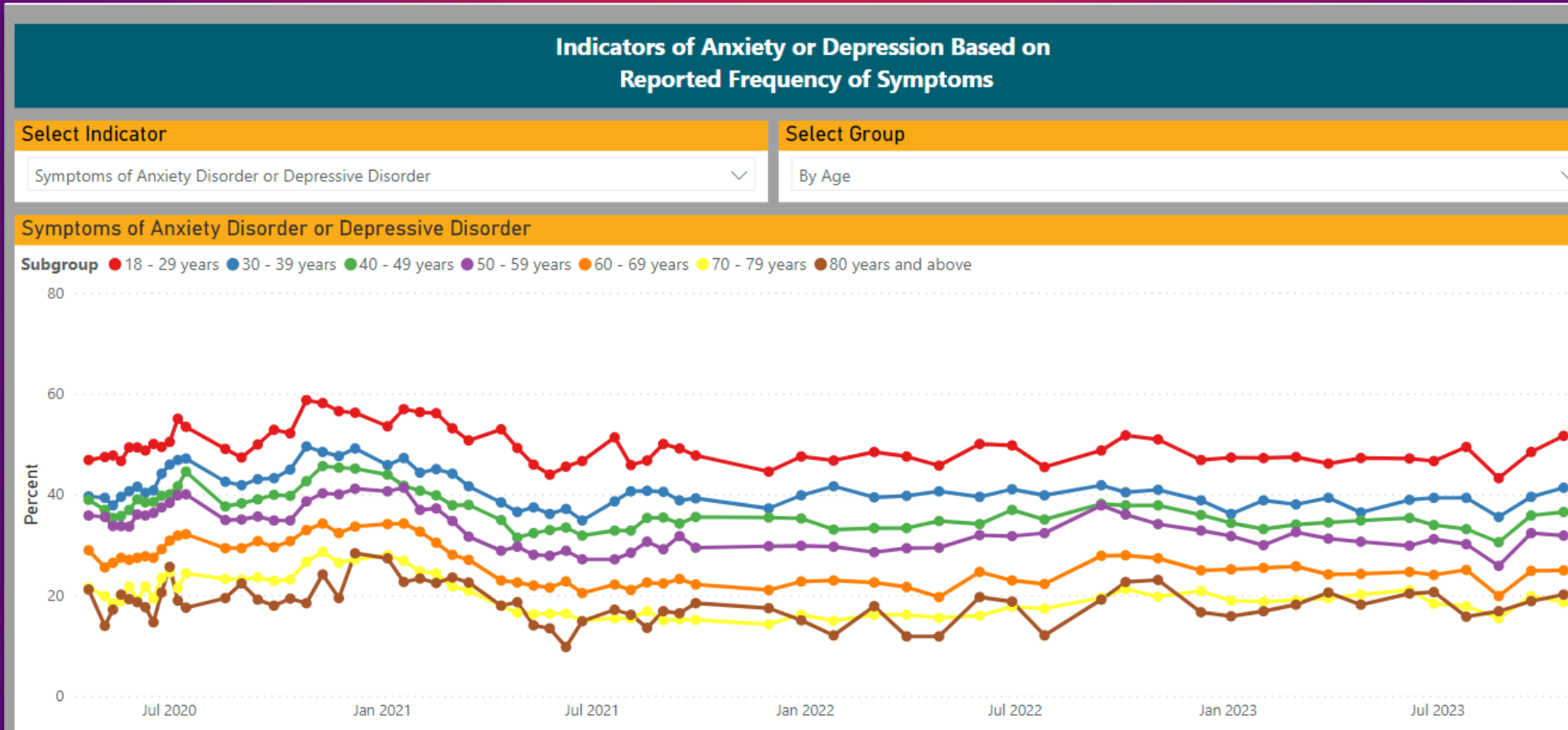
Why would there be a need to explore the world of psychedelics now?

Table. Percentages (and 95% confidence intervals) of selected mental health indicators for adults aged 18 and over, by month of interview: National Health Interview Survey, United States, 2019

Month of Interview	Symptoms of anxiety disorder ¹	Symptoms of depressive disorder ²	Symptoms of anxiety disorder and/or depressive disorder
Full year 2019	8.1 (7.7–8.5)	6.5 (6.2–6.9)	10.8 (10.4–11.3)
January	8.2 (6.9–9.6)	6.5 (5.5–7.8)	10.8 (9.4–12.4)
February	8.2 (6.9–9.6)	5.9 (4.8–7.1)	10.5 (9.0–12.2)
March	8.6 (7.3–10.1)	7.5 (6.3–8.8)	11.7 (10.2–13.3)
April	8.3 (6.9–9.9)	6.7 (5.6–7.9)	11.0 (9.5–12.6)
May	8.1 (6.8–9.5)	6.8 (5.6–8.1)	11.0 (9.5–12.6)
June	7.8 (6.6–9.2)	6.0 (5.1–7.2)	10.9 (9.4–12.4)
July	7.5 (6.4–8.8)	5.9 (5.0–7.0)	9.5 (8.3–10.9)
August	8.1 (6.7–9.6)	7.0 (5.7–8.5)	11.0 (9.4–12.8)
September	7.4 (6.3–8.7)	6.4 (5.3–7.7)	9.9 (8.6–11.4)
October	7.8 (6.7–9.1)	6.8 (5.7–8.1)	10.8 (9.4–12.2)
November	8.3 (7.0–9.9)	6.3 (5.0–7.8)	11.7 (10.0–13.6)
December	8.6 (7.2–10.2)	6.7 (5.3–8.2)	11.3 (9.7–13.1)

Pre-Pandemic
Figures On
Adults 18 and
Over for Anxiety
and Depression
Symptoms

Household Pulse Survey by US Census Bureau Based on Age



Indicators of Anxiety or Depression Based on Reported Frequency of Symptoms

Select Indicator

Symptoms of Anxiety Disorder or Depressive Disorder



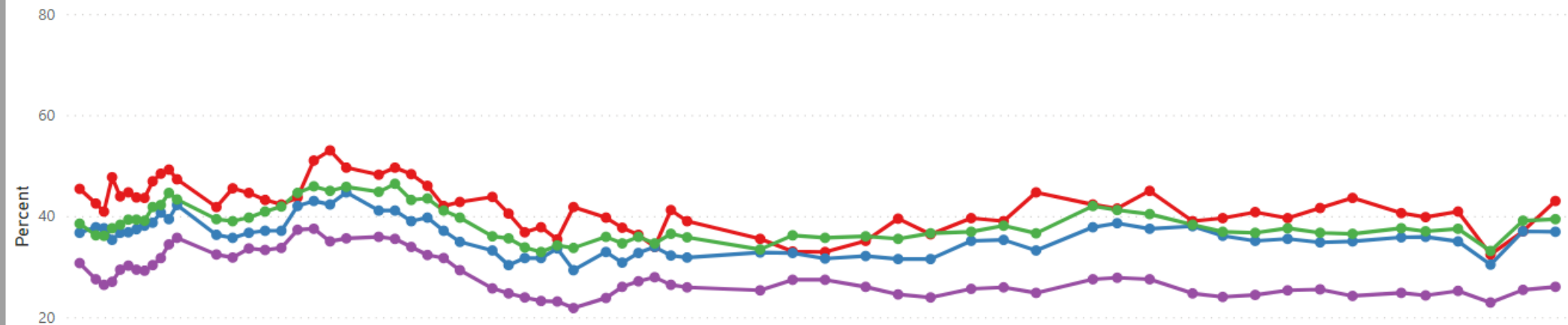
Select Group

By Education



Symptoms of Anxiety Disorder or Depressive Disorder

Subgroup ● Less than a high school diploma ● High school diploma or GED ● Some college/Associate's degree ● Bachelor's degree or higher



Based on Education

Indicators of Anxiety or Depression Based on Reported Frequency of Symptoms

Select Indicator

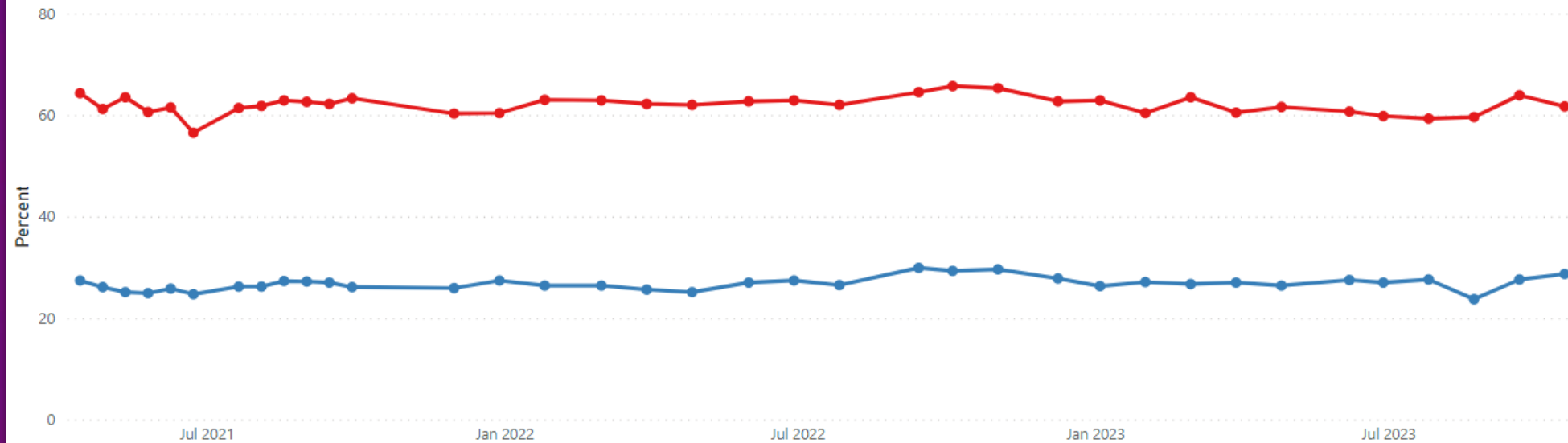
Symptoms of Anxiety Disorder or Depressive Disorder

Select Group

By Disability status

Symptoms of Anxiety Disorder or Depressive Disorder

Subgroup ● With disability ● Without disability



Based on Disability

Accessibility of mental health treatment by state

Based on:

Number of adults with a mental illness who did not receive treatment or whose insurance did not cover their treatment.

Number of mental health professionals working in the state.

Number of kids with major depressive episode(s) who did not receive treatment.

Number of kids with severe major depressive episode(s) who received consistent treatment.



States with the least access to mental health treatment

RANK (LEAST ACCESS)	STATE
#1	Texas
#2	Alabama
#3	Florida
#4	Georgia
#5	Mississippi

States with the most access to mental health treatment

RANK (MOST ACCESS)	STATE
#1	Vermont
#2	Massachusetts
#3	Maine
#4	Wisconsin
#5	Minnesota

States with the highest prevalence of mental health disorders

RANK (HIGHEST PREVALENCE)	STATE
#1	Oregon
#2	Vermont
#3	Alaska
#4	Wyoming
#5	Utah

States with the lowest prevalence of mental health disorders

RANK (LOWEST PREVALENCE)	STATE
#1	New Jersey
#2	Florida
#3	Georgia
#4	Texas
#5	New York

39	Idaho
40	Nevada
41	Mississippi
42	Kansas
43	Indiana
44	Missouri
45	District of Columbia
46	Alaska
47	Alabama
48	Utah
49	Oregon
50	Wyoming
51	Colorado

01	New Jersey
02	Wisconsin
03	Massachusetts
04	Connecticut
05	New York
06	Minnesota
07	Hawaii
08	Pennsylvania
09	Maryland
10	Illinois

States that are ranked 1-10 have lower prevalence of mental illness and higher rates of access to care for adults.

States that are ranked 39-51 indicate that adults have higher prevalence of mental illness and lower rates of access to care.

Conventional Treatments for Anxiety and Depression

Pharmaceuticals

SSRI's

Lexapro, Paxil, Prozac, Celexa, Zoloff

SNRI's

Effexor, Pristiq, Cymbalta, Remeron

NDRI (norepinephrine-dopamine reuptake inhibitors)

Used for Depression, Parkinson, ADHD, narcolepsy)

Wellbutrin

Benzodiazepines

Xanax, Valium, Ativan, Klonopin

Non benzo anxiolytics

Vistaril, Buspar

Non pharmaceuticals

▶ Depression

- ▶ Cognitive Behavioral Therapy
- ▶ Reflexology and Acupuncture
- ▶ Herbal supplements: St. John's wort, Valerian root
- ▶ Repetitive Transcranial Magnetic Stimulation
- ▶ ECT (Electroconvulsive therapy)

▶ Anxiety

- ▶ Cognitive Behavioral therapy – first treatment option
- ▶ Exposure
- ▶ Cognitive restructuring

Serotonin Syndrome – a fatal syndrome of excess serotonergic agonism

Definition

- ▶ Drug reaction
- ▶ A spectrum of clinical findings from excess serotonin characterized by mental status changes, autonomic hyperactivity, neuromuscular abnormalities
- ▶ Symptoms: agitation, insomnia, confusion, tachycardia, dilated pupils, loss of coordination, high blood pressure, muscle rigidity, sweating, diarrhea, headache, shivering
- ▶ Life threatening signs: High fever, tremor, seizures, arrhythmia, unconsciousness

Causes

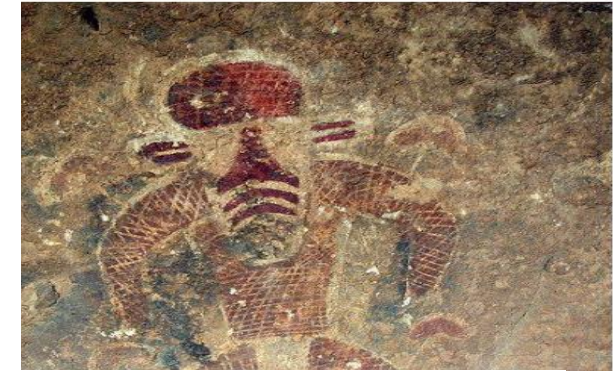
- ▶ Combinations of SSRIs
- ▶ Addition of MAOIs
- ▶ Pain medications such as codeine, Oxycodone, hydrocodone, Demerol, fentanyl, tramadol
- ▶ Migraine treatment: Tegretol, triptans, Depakote
- ▶ Lithium
- ▶ Illicit drugs including LSD, ecstasy, cocaine, amphetamines
- ▶ St. John's wort, ginseng and nutmeg
- ▶ OTC cough medicine like dextromethorphan
- ▶ Anti nausea: Zofran, Reglan
- ▶ HIV drug Ritonavir

History of Psychedelic

- 7000 years in the making...

~5000 BCE

Frescos of mushroom-holding shamans were depicted in caves on the Tassili plateau of Southeastern Algeria.



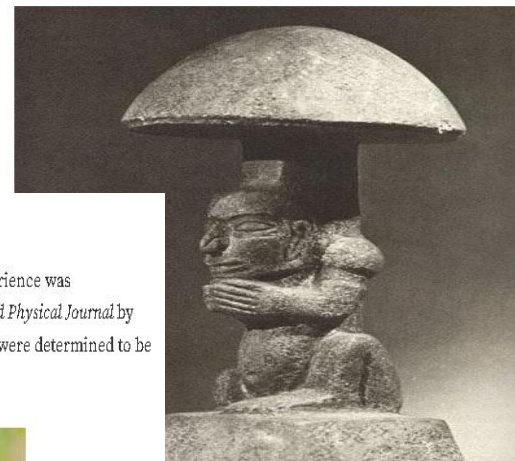
~ 3700 BCE

Native Americans in the Rio Grande area collected peyote buttons and manufactured peyote effigy sculptures which were found in the Shumla Caves.



1000 BCE

Statues in Mexico depicted *Psilocybe mexicana* with god-like figures emerging from it, indicating religious use.



1799: October 3rd

The first psychedelic mushroom experience was documented in the *London Medical and Physical Journal* by Dr. Everard Brande. The mushrooms were determined to be *Psilocybe semilanceata*.



~1300 BCE

A Chavín stone carving from a temple in northern Peru showed the principal deity holding a San Pedro cactus.



Psychedelic history

CROSS CULTURAL USES OF PSYCHEDELIC DRUGS

1893

Quanah Parker, chief of the Comanche tribe, gave 50 pounds of dried peyote buttons to Smithsonian Institute archaeologist James Moody. Moody took the peyote to Washington where it was used in the first scientific trials, including self-experiments by neurologist Weir Mitchell and psychologist William James.



1918

James Mooney, a Smithsonian Institute archeologist who traveled through Oklahoma in 1891 participating in various peyote ceremonies, became convinced of the need to unite the Indians and protect their legal right to worship with peyote. He wrote the charter and incorporated the Native American Church.



1912

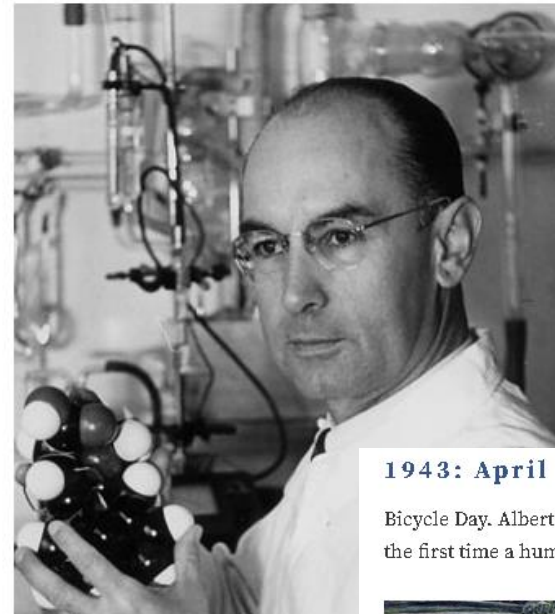
MDMA was first synthesized by Anton Köllisch and patented by Merck Pharmaceuticals in Germany.

1943: April 16th

"A peculiar presentiment – the feeling that this substance could possess properties other than those established in the first investigations – induced me, five years after the first synthesis, to produce LSD-25 once again so that a sample could be given to the pharmacological department for further tests." Albert Hofmann accidentally absorbed a small amount of LSD. This was the first human experience with LSD-25.

1938: November 16th

Dr. Albert Hofmann, working for Sandoz laboratories, synthesized LSD-25. He stated, *"I had planned the synthesis of this compound with the intention of obtaining a circulatory respiratory stimulant"*. Colleagues showed no interest in it and testing was discontinued.



1947

Sandoz Laboratories marketed LSD under the name Delysid as a psychiatric drug to be used for treating a wide variety of mental disorders. Sandoz provided researchers with free supplies of LSD. In its marketing literature, Sandoz suggested that psychiatrists take LSD to gain a better subjective understanding of the schizophrenic experience, and many did.



1943: April 19...

Bicycle Day. Albert Hofmann took 250 µg of LSD. This was the first time a human intentionally used LSD.

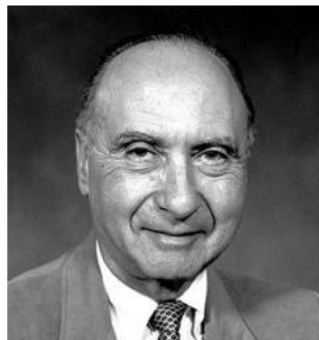
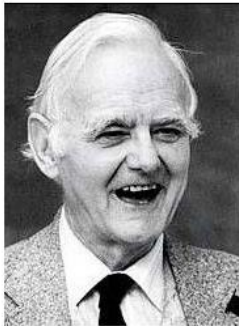


Psychedelic history...

1952

In the *American Journal of Psychiatry*, Dr. Charles Savage published the first study of the use of LSD to treat depression.

Dr. Humphry Osmond and Dr. Abram Hoffer began treating alcoholics with LSD and mescaline at Weyburn Hospital in Saskatchewan, Canada. Treatment involved a single high dose of LSD as an adjunct to psychotherapy. They reported abstinence rates of 50%.



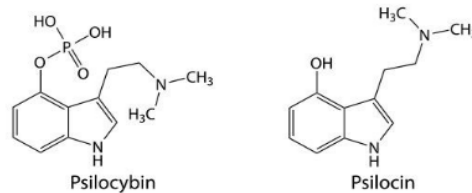
1955: June 29th

R. Gordon Wasson and Allan Richardson were the first two Americans to ingest mushrooms at a ritual. They did so under the supervision of Maria Sabina. The ritual and the mushrooms were popularized by Wasson's book *Mushrooms, Russia and History*.



1958

Albert Hofmann isolated and determined the structure of the two active agents in mushrooms. He named them psilocybin and psilocin.



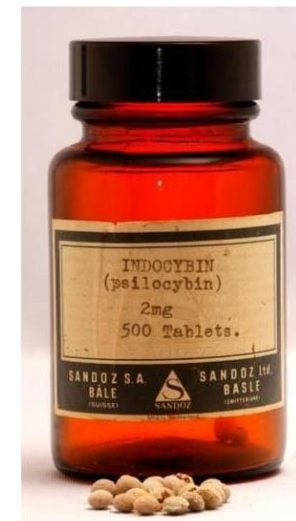
1957: May 13th

Life magazine published a story on *Psilocybe mexicana* written by R. Gordon and Valentina Wasson. The article was instrumental in popularizing psychedelics in America.



1960

Sandoz Pharmaceutical began producing psilocybin pills, called Indocybin. Each pill contained 2 mg of psilocybin.

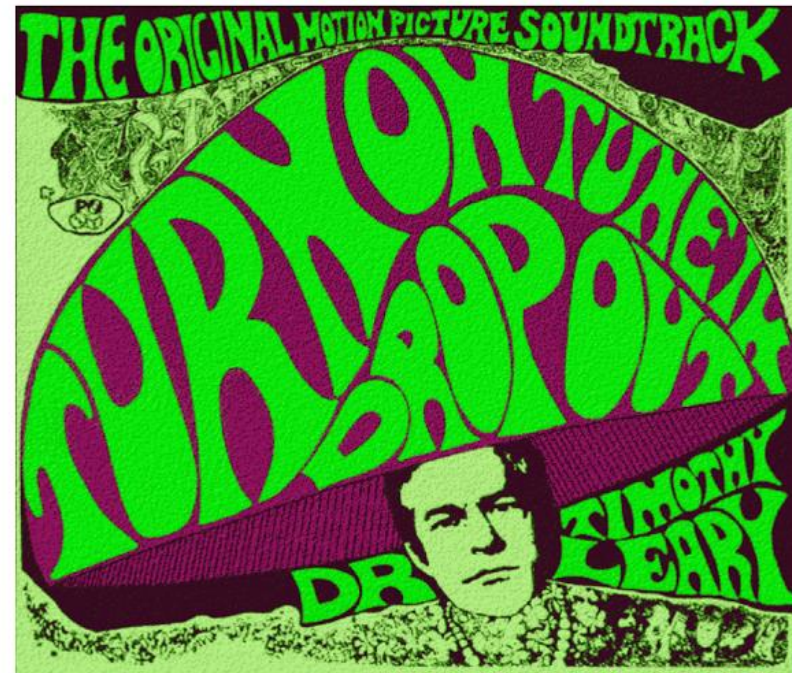


Psychedelic history..the 60's to mid-70's

Counterculture

INFLUENCERS...

- Dr. Timothy Leary
- Dr. Ralph Metzner
- Dr. Richard Alpert /Ram Dass
- Together they led the Harvard Psilocybin Project
- Terence & Dennis McKenna –
Ethnobotanist – “Stoned Ape” theory of
human evolution
- Ken Kesey & the Merry Pranksters



2 Decades of Research including Controlled Randomized Studies

ELYSSA UP AT BAT

Johns Hopkins Center for Psychedelic & Consciousness Research

2000 – first research since 1970s
w/published paper 2006 on positive effects
of a single dose of psilocybin, sparking
renewal in research on psychedelics

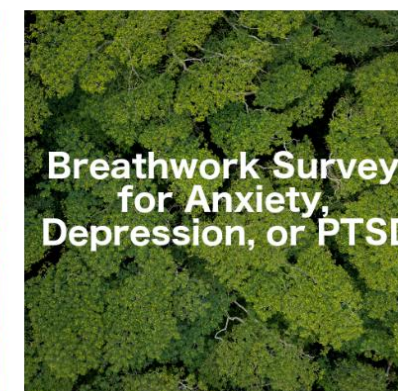
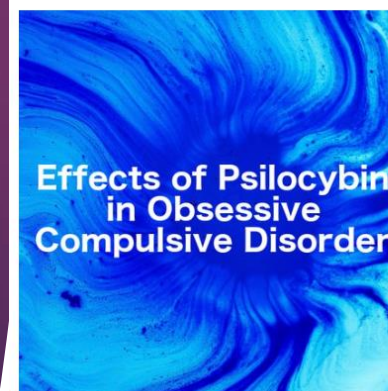
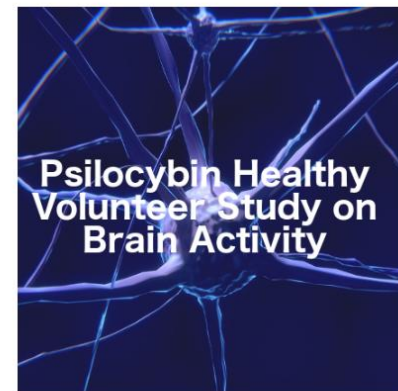
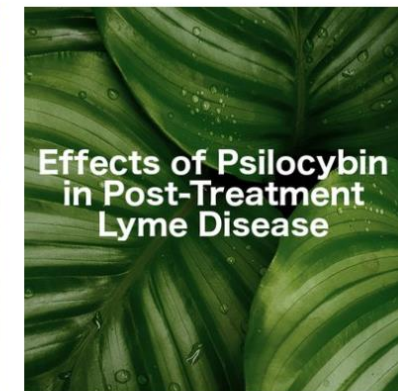
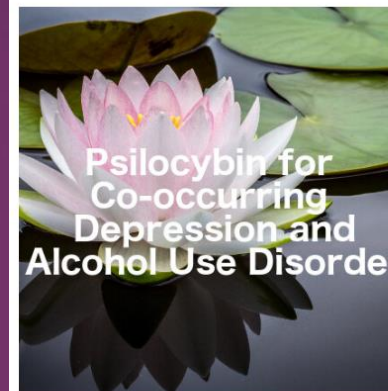
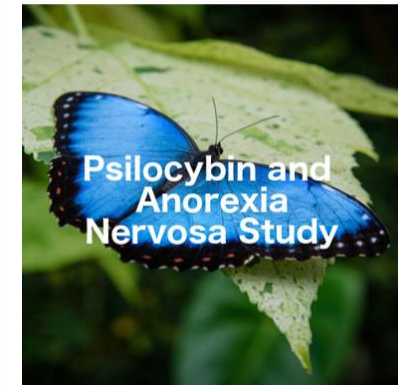
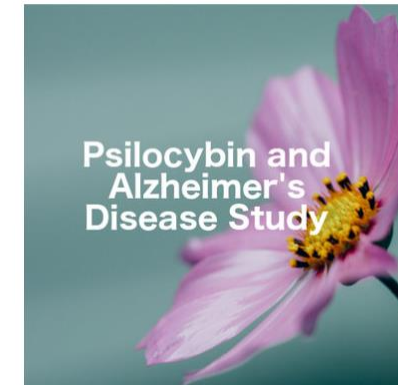
2006- established safety of high dose
psilocybin

2008 – Guidelines for Human Psychedelic
Research

2011 – Psilocybin increases personality
domain of openness

2015 – Research on effects of salvinorin A as
potential treatment of pain and addiction
(opioid, not serotonin 2A receptors)

RESEARCH



More Achievements since 2000 from John Hopkins¹⁹

Psychedelic Assisted Smoking Cessation 2014/2017

First ever study to examine psychedelic as treatment of nicotine addiction. Pilot study showed **80%** of participants were biologically verified as smoke free 6 months after psilocybin treatment compared to the most effective medications that has success rates less than 35%.

Palliative Effects of Psilocybin treatment in Cancer Patients 2016

Largest study demonstrating that a **single** administration of psilocybin produces sustained decreases in depression and anxiety in patients with a life-threatening cancer diagnosis. The results of this landmark study is providing the basis for the initiation of registration trials in the United States and Europe seeking approval of psilocybin for medical treatment.

NIH granted study on effects of psilocybin on brain function 2016

Using functional MRI imaging to study effects of 1 day before, 1 week after and 1 months after admin of psilocybin to study long term effects of psilocybin on brain function

Paving the way for Moving Psilocybin Out of Schedule I (2018)



Beckley Microdosing Research Program Oxford UK

Changing Minds, Altering Perceptions

The Beckley Foundation is UK-based non-profit with a long history of pioneering psychedelic research. Founder and Director Amanda Feilding has for the past years been laying the groundwork for an exciting new range of collaborations with leading research institutes around the world, largely focusing on LSD.

Specific program focused on micro-dosing (LSD)

🔥 LSD microdosing on mood, cognition & pain relief

🔥 LSD microdosing, brain activity & neuroplasticity

🔥 LSD Microdosing for Alzheimer's Disease

🔥 Microdosing and meditation

🔥 The largest placebo-controlled microdosing study

🔥 Remote microdosing research platform

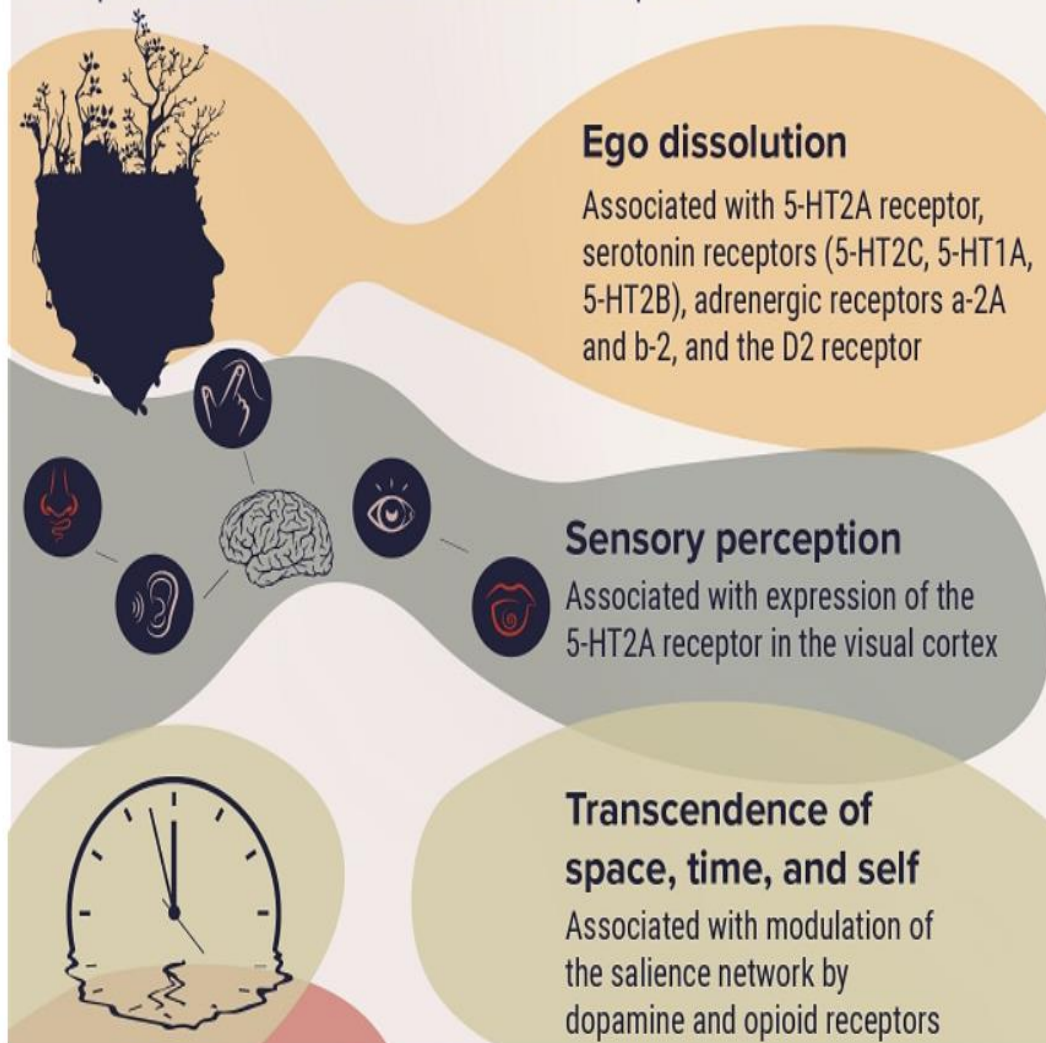
If you go chasing white rabbits



PSYCHEDELICS

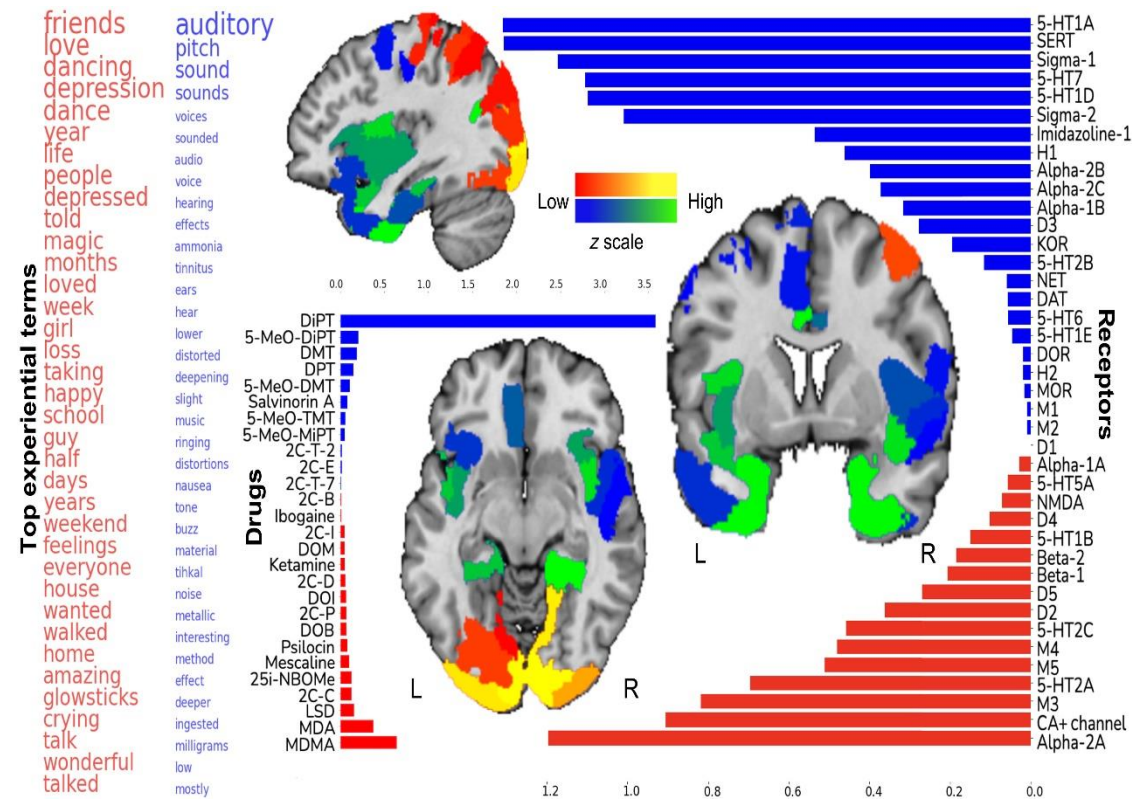
Medscape

Research on nearly 7000 individuals who had taken 1 of 27 different psychedelic compounds mapped various experiences to different brain receptors.



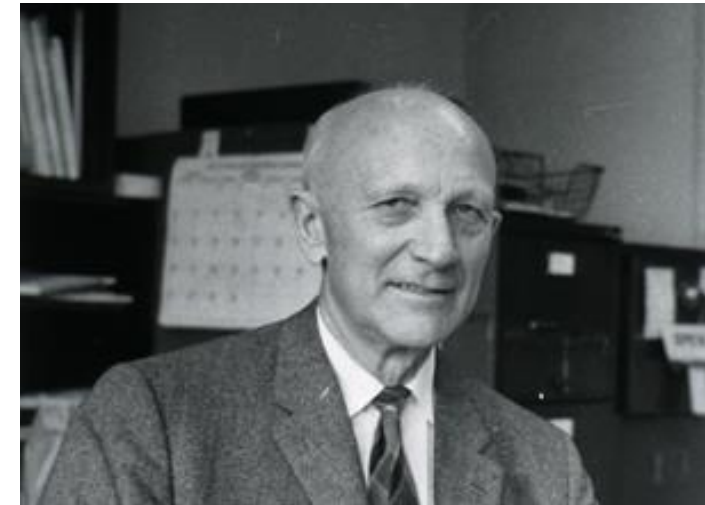
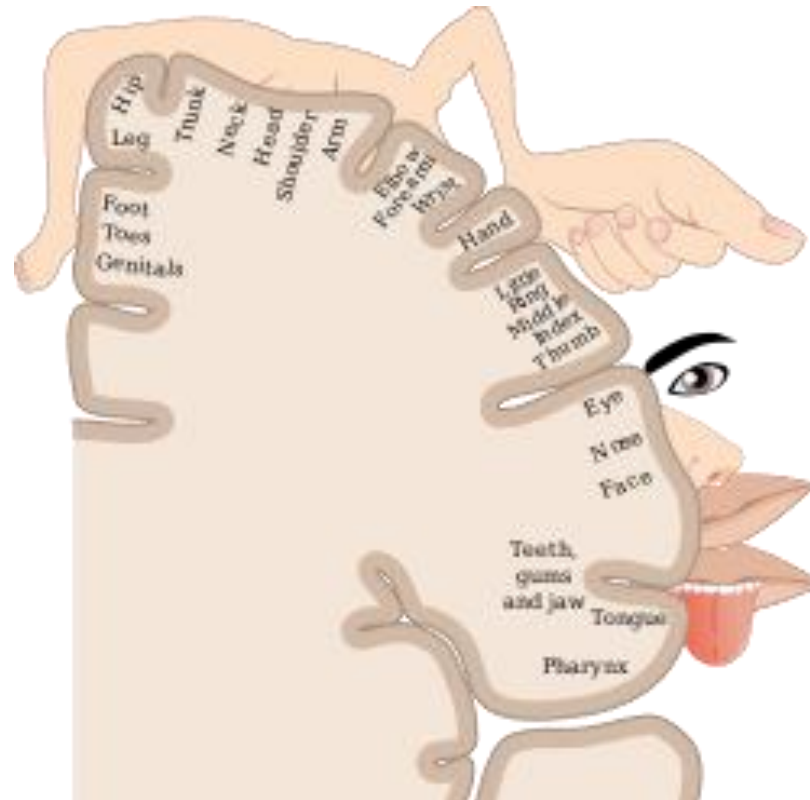
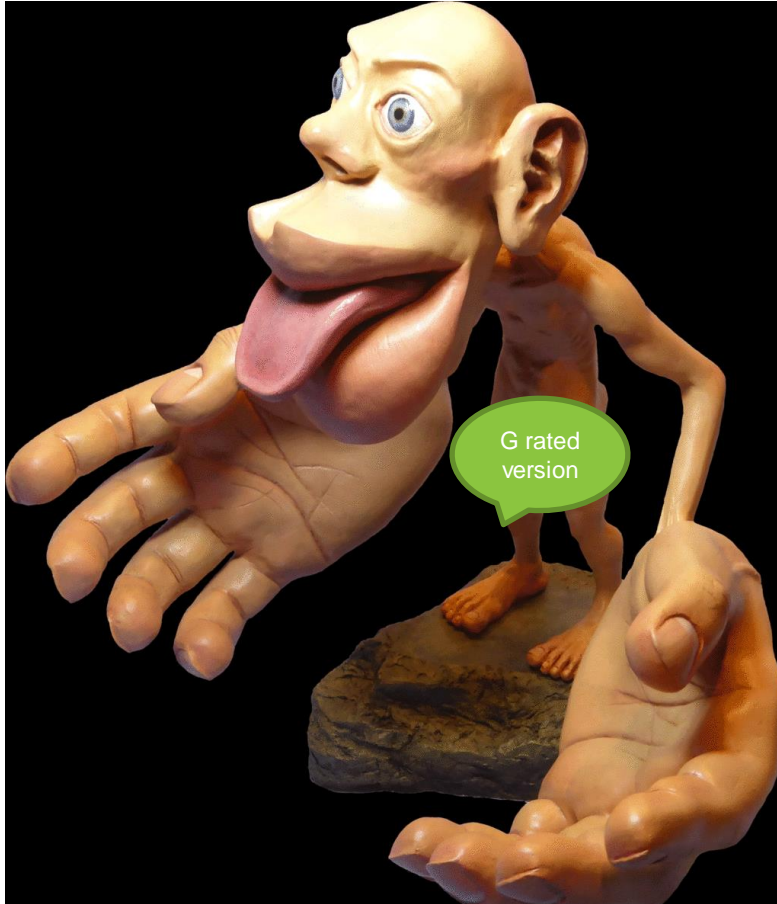
Trips and neurotransmitters: Discovering principled patterns across 6850 hallucinogenic experiences

- Published online March 16 in Science advances
- <https://www.science.org/doi/10.1126/sciadv.abl6989>
- “Hallucinogenic drugs may very well turn out to be the next big thing to improve clinical care of major mental health conditions,” senior author **Danilo Bzdok, MD, PhD**, associate professor, McGill University, Montreal, Canada, said in a press release.
- Subjective awareness experienced during a psychedelic trip? A new study maps anatomical changes in specific neurotransmitter systems and brain regions that may be responsible for these effects.
- Using a machine learning strategy investigators gathered over 6800 accounts from individuals who had taken one of 27 different psychedelic compounds.
- They then linked these subjective experiences with specific brain regions where the receptor combinations are most commonly found and, using gene transcription probes, created a 3D whole-brain map of the brain receptors and the subjective experiences linked to them.



Dr. Wilder Penfield – Father of Mapping Brain Function

The Homunculus – The Little Man





CASE REPORT article

Front. Psychiatry, 23 November 2023
Sec. Psychopharmacology
Volume 14 - 2023 | <https://doi.org/10.3389/fpsy.2023.1271152>

This article is part of the Research Topic
Beyond Psilocybin: Exploring the Clinical Potential of Alternative
and Novel Psychedelics
[View all 6 Articles >](#)

5-MeO-DMT for post-traumatic stress disorder: a real-world longitudinal case study

- Anya Ragnhildstveit^{1,2*} Ryan Khan¹ Paul Seli^{1,3} Lisa Claire Bass^{1,4} River Jude August^{1,5}
- Miriam Kaiyo^{1,5} Nathaniel Barr⁶ Laura Kate Jackson¹ Michael Santo Gaffrey^{3,7,8}
- Joseph Peter Barsuglia⁹ Lynnette Astrid Averil^{10,11,12}

Other studies to show promise in efficacy

Psychoactive drug ibogaine effectively treats traumatic brain injury in special ops military vets

share    

Stanford Medicine researchers find that ibogaine, a plant-based psychoactive compound, safely led to improvements in depression, anxiety and functioning among veterans with traumatic brain injuries.

January 5, 2024 - By Sarah C.P. Williams

For military veterans, many of the deepest wounds of war are invisible: Traumatic brain injuries resulting from head trauma or blast explosions are a leading cause of post-traumatic stress disorder, anxiety, depression and suicide among veterans. Few treatments have been effective at diminishing the long-term effects of TBI, leaving many veterans feeling hopeless.

Now, Stanford Medicine researchers have discovered that the plant-based psychoactive drug ibogaine, when combined with magnesium to protect the heart, safely and effectively reduces PTSD, anxiety and depression and improves functioning in veterans with TBI. Their new studv. published online Jan. 5 In *Nature Medicine*.



Veterans who underwent ibogaine treatment at a clinic in Mexico experienced relief from symptoms including depression, anxiety and post-traumatic stress disorder. [Mumtaaz Dharsey/peopleimages.com](https://www.peopleimages.com)

Ibogaine

25

Ibogaine is a psychoactive alkaloid naturally occurring in the West African shrub *iboga*. While ibogaine is a mild stimulant in small doses, in larger doses it induces a profound psychedelic state. Historically, it has been used in healing ceremonies and initiations by members of the Bwiti religion in various parts of West Africa. People with problematic substance use have found that larger doses of ibogaine can significantly reduce withdrawal from opiates and temporarily eliminate



MAPS Multidisciplinary association for psychedelics studies

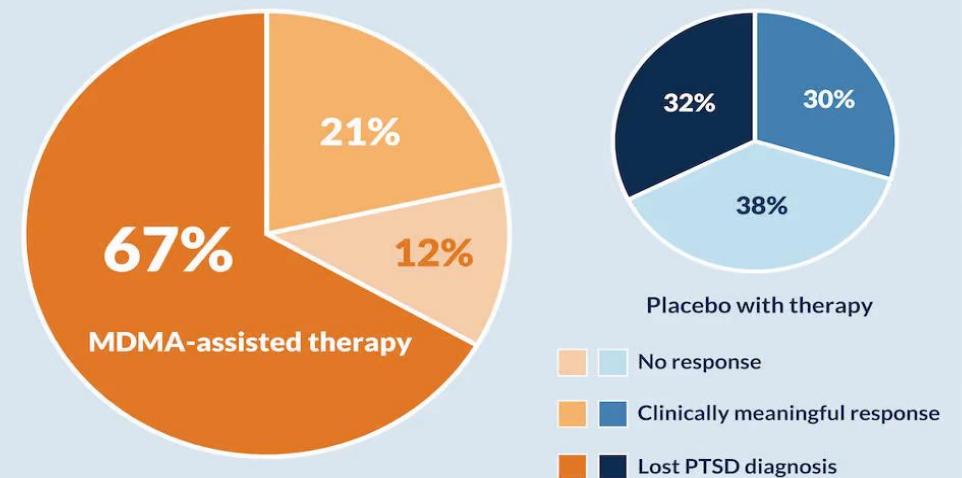
- 50 years in the making...Dr. Rick Doblin
- MAPS' Phase 3 clinical trial of MDMA-assisted therapy demonstrated statistically significant improvement in PTSD symptoms after three sessions.
- Phase 2 Multicenter Randomized Placebo-controlled, Double-blind, Parallel Study to Assess the Safety and Efficacy of Inhaled Cannabis in Veterans for Treatment of Posttraumatic Stress Disorder (PTSD)



TREATING PTSD WITH MDMA-ASSISTED THERAPY

Phase 3 Trial Results Published

67% of participants in the **MDMA-assisted therapy** group no longer had PTSD after 3 sessions, compared to 32% in the **placebo with therapy** group.



Mitchell 2021, *Nature Medicine*



The Multidisciplinary Association for Psychedelic Studies (MAPS) is a 501(c)(3) non-profit research organization working to develop MDMA-assisted therapy into an FDA-approved prescription treatment. The safety and efficacy of MDMA-assisted therapy is currently under investigation. It has not yet been approved by the FDA, does not work for everyone, and carries risks even in therapeutic settings. Learn more about our research at maps.org.



What is Neuroplasticity

- Tendency of brain to keep developing, changing and healing itself
- Brain is plastic or malleable
- Previously, believed that brain did not change after a certain point in time
- We know now, brain can change and develop throughout our lifetime
- Evidence: vitro study on cortical neurons of animals – formation of new neurites, more dendritic branches, more synapses with low dose psychedelics
- Neuroplasticity is directly proportional to blood levels of **BDNF**, a protein responsible for brain cell growth and survival
- BDNF is secreted by neurons and is a component of synaptic plasticity.
- BDNF is low among those with Alzheimer's and other neurodegenerative disorders like parkinsons, huntington and bipolar
- BDNF found in hippocampus and cortex – site that is enhanced with exercise – study found 10 mins of high intensity aerobic exercise has beneficial effect on cognition. [Neuroscience Letters Volume 630, 6 September 2016, Pages 247-253](#)

What can alter BDNF levels

Raises levels

- ▶ Exercise 80% max HR x 40 mins
- ▶ Low carb diet, intermittent fasting
- ▶ coffee –beneficial effects on memory in animal models
– reduced age related memory impairment
- ▶ magnesium – and improves depression
- ▶ being outdoors... hiking with Adam
- ▶ blueberries, green tea, cumin, cacao, omega 3 fatty acids, green leafy veggies, red grapes
- ▶ Ketamine
- ▶ Lithium enhances expression of BDNF... may be mechanism of why it treats bipolar

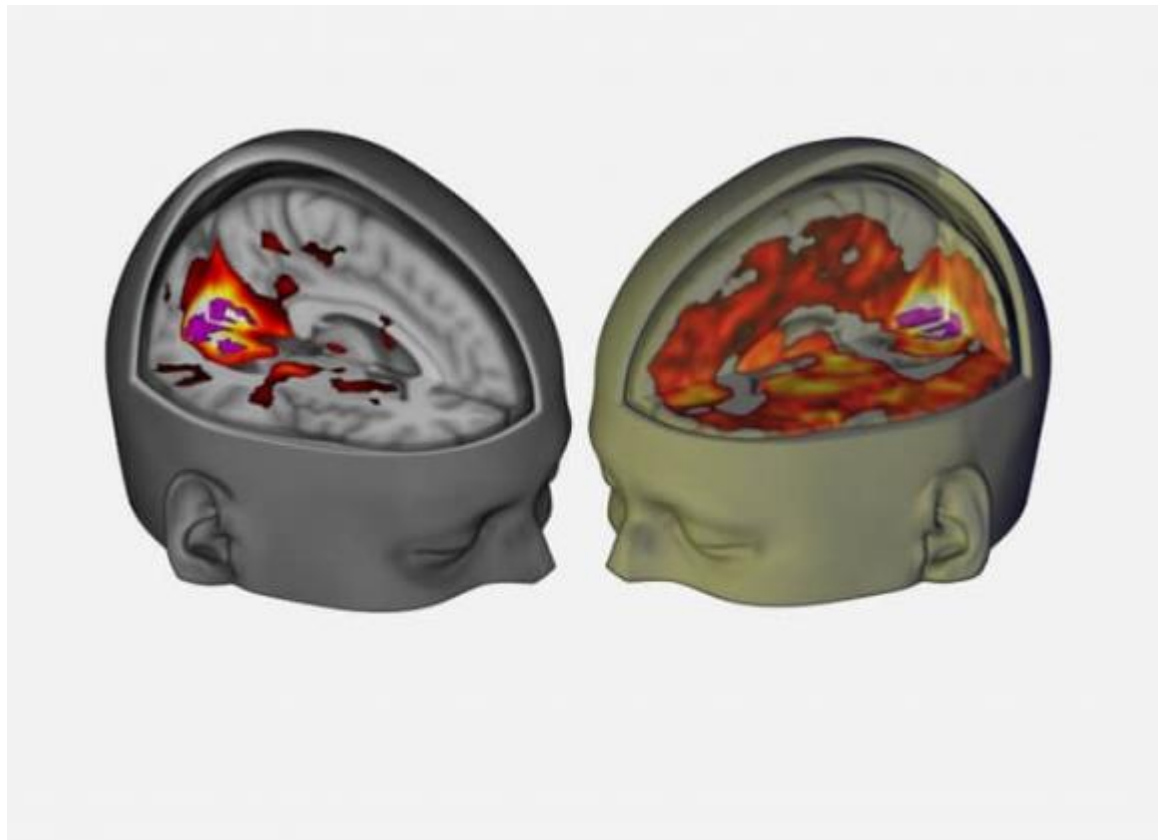
Lowers levels

- ▶ long term exposure to stress
- ▶ inflammation
- ▶ high fat and high carb diets
- ▶ sedentary and indoor lifestyle
- ▶ UPF

Efficacy of Psychedelics for Treating Mental Illness is Linked to Ego Dissolution

- ▶ Dissolution of boundaries between Self and World
- ▶ Ego is self-identity – how you view self determines how you see the world
- ▶ Ego determines how you interact with others and the degree of self-esteem
- ▶ EGO Death – Losing yourself – feeling of letting go of oneself and identity
- ▶ Hx of ego death traced to old religious and spiritual practices such as Zen Buddhism
- ▶ Highly personal.... can be scary or cathartic and blissful..... very unpredictable
- ▶ Examples of BAD trips include nausea, sleep problems, dry mouth, sweating, panic, paranoia and psychosis which can be unpleasant and potentially fatal

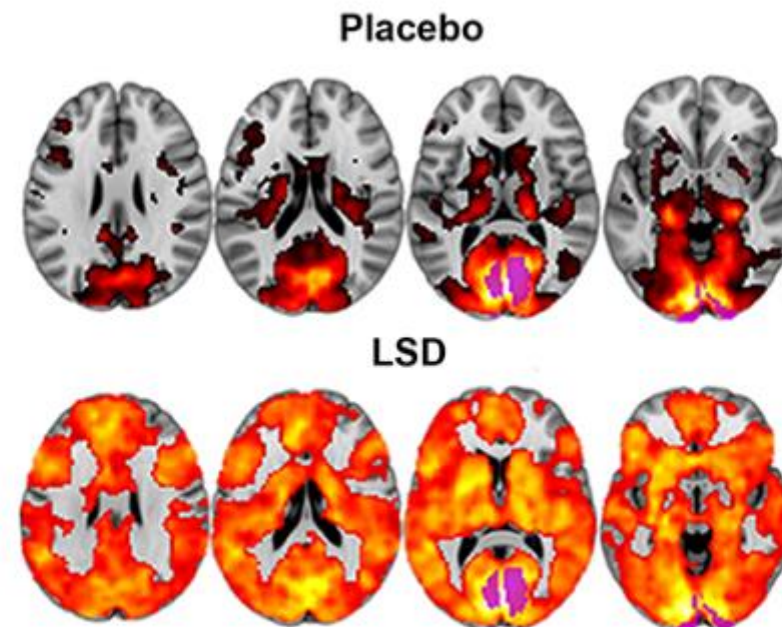
The World's First Images of the Brain on LSD – 2016 via functional MRI brain published in Proceedings of the National Academy of Sciences



Increase in the brain connectivity after LSD (right), compared to placebo (left).

LSD decreases the communications between the brain region of the Default Mode Network – which is like a conductor in orchestra. This DMN controls amount of sensory information and controls and represses consciousness.... that is referred to as the EGO

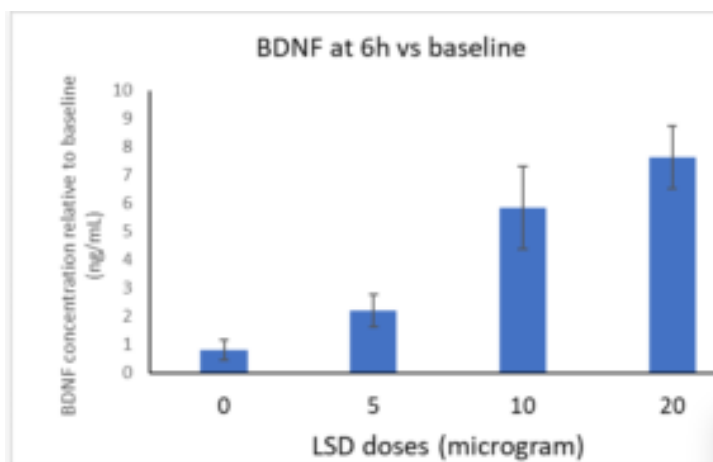
Ego dissociation- DMN disintegrates under LSD, allowing for a magnificent increase in communication between brain networks that are normally highly segregated. This produces a more integrated pattern of connectivity throughout the entire brain, producing more fluid modes of cognition and enriching consciousness



This image shows how, with eyes-closed, much more of the brain contributes to the visual experience under LSD than under placebo. The magnitude of this effect correlated with participants reports of complex, dreamlike visions.

Effects of LSD microdosing on Neuroplasticity

Cognitive Function



Brain-derived neurotrophic factor is key marker in neurodegenerative and neuropsychiatric disorders

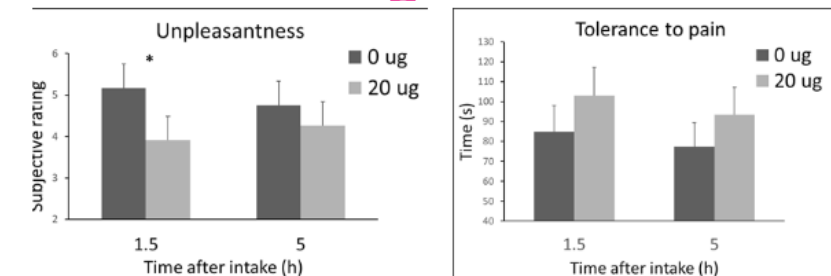
BDNF is linked to OCD, Alzheimers, DM and eating disorders

BDNF is a marker of neuroplasticity

Mood

Low dose LSD demonstrated enhanced mood as well as vigilance at dose of 20 mcg

Pain Management



- Cold Pressor Test used (submerge hands into 3 degrees celcius water)
- 20 mcg dose had significant reduction of pain perception
- 20 mcg had 20% increase in pain tolerance
- reduction in subjective pain and increase in pain tolerance comparable in magnitude to those observed with opioids

Study on 24 health volunteers on physiological and psychological effects of low dose LSD at 5, 10 and 20 ug vs placebo

Classifying Psychedelic drugs

CLASSIC PSYCHEDELIC

- Usually derived from naturally occurring compounds :
- Psilocybin (“magic mushrooms”)
- DMT, an active component of ayahuasca, an increasingly popular sacramental drink originating from South America.
- LSD
- Mescaline (Peyote) , Ibogaine

DISSOCIATIVE PSYCHEDELIC

- Typically, newer analogs and include:
- Ketamine
- 3,4-Methylenedioxymethamphetamine
MDMA (Ecstasy, Molly)
- PCP (Phencyclidine)



Majority of hallucinogens are classified schedule 1

- Esketamine – Spravato FDA approved 3/19
- Ketamine - Schedule III
- Salvia (not classified)
- Amanita Muscaria (not classified)



Let's talk dosage...set & setting

Substance	Mega heroic dose	Moderate Dose	Museum concert Dose	Minidose	Microdose
Psilocybin	4+ grams	2-3 grams	0.75-1.5 grams	0.35-0.50 grams	0.1-0.3 grams
LSD	200+ micrograms	150 micrograms	50-100 micrograms	15-30 micrograms	5-15 micrograms
MDMA	200+ milligrams	80-150 milligrams			5-40 milligrams
Ketamine	150-200 milligrams	75-100 milligrams		25-50 milligrams	

Set & Setting

- **Set** short for **mindset**
 - Preparation & Expectations
 - What do you hope to learn ?
 - What are your goals ?
- **Setting** is the surrounding, physical environment
 - Ideally an uncluttered comfortable room with a couch or bed, pillows, softer lighting
 - A familiar outdoor setting
 - Music (instrumental)



Microdosing Protocols...

- **Stamet's Protocol** --also called the “beginner's protocol”, and uses “stacking” of Lion's Mane supplement, psilocybin, and niacin (vitamin B3) on days 1-4 and 8-11 of 14 for 4 weeks, then rest 2 to 4 weeks.
- **Fadiman protocol**--microdosing every third day for 4 to 8 weeks, then rest 2 to 4 weeks.
- **Microdosing Institute Protocol (MDI)**—microdosing every second day for 4 to 8 weeks, then rest 2 to 4 weeks.



Prevalence and uses in the community in USA



- ▶ Difficult to estimate the number of people
 - ▶ Legal regulation of psychedelics
 - ▶ Normally people do not declare their use
- ▶ Journal of Psychoactive Drugs – University California 2020
 - ▶ Estimate prevalence: anonymous online survey
 - ▶ 2347 Replies:
 - ▶ 59% knew the concept
 - ▶ 17% did it on a regular basis
 - ▶ Improve your mood
 - ▶ Reduce anxiety
 - ▶ Improve your care
 - ▶ Improve your memory
 - ▶ Improve socialization

Prevalence and uses in the community in UK



Life insurance broker – LifeSearch (United Kingdom)

- ▶ After the Covid-19 pandemic: Increase in microdosing psychedelic up to 43%
- ▶ 1 in 10 adults in the UK doing microdosing.
- ▶ Approx. 1 in 5 people between 18 and 34 years old (12% pre-pandemic → 19% post-pandemic)
- ▶ 20% use to help cope with childcare responsibilities.
- ▶ 13% use to perform better at work
- ▶ It's not just students!

Microdose movement

- ▶ Institutes such as "microdosing institute"
 - ▶ Education, research and community
 - ▶ GLOBAL
- ▶ Online access to tutorials and "coaching" that helps users in the process of microdosing.
- ▶ Research information, protocols, different substances, etc.
- ▶ They have a shop where you can access different substances in different parts of the world.
- ▶ It goes beyond mental disorders. It refers to **mental health**.

Microdosing Institute is a global education, community, and research platform. We build vital connections in society and bring together ancestral wisdom with modern science to allow for safe, conscious, and effective microdosing with psychedelics.



EDUCATION

Here at Microdosing Institute you'll find everything you need to microdose safely, consciously, and effectively. We provide evidence-based education and guidance in various forms to foster the most transformative microdosing experiences.

[Learn About Microdosing](#)



COMMUNITY

Through our global microdosing community, we aim to provide accessible and honest microdosing education, foster healthy conversations about microdosing and psychedelics, and provide connection and high-quality support for those who need it.

[Join Our Global Community](#)



RESEARCH

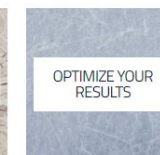
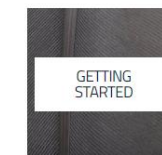
Microdosing research enables us to better understand how, when, and by whom microdosing can be safely and effectively used. Here, we have gathered and summarized most scientific research publications on microdosing and its effects to date.

[Explore Research](#)

Learn How To Microdose

Now, let's get practical.

The practical guide below provides a starting roadmap for your journey. This microdosing guide features detailed, comprehensive information about microdosing substances, protocols, getting started, and optimizing your microdosing experience. Remember, a small dose can lead to big changes – over time and when done with intention.



The Drug Enforcement Administration (DEA) wants to...

DEA Proposes Dramatic Increases In Marijuana And Psychedelics Production In 2023 For Research

Published 2 days ago on October 14, 2022
By Kyle Jaeger



POLITICS

DEA Calls For Even More THC, Psilocybin And DMT To Be Produced For Research In 2024



Published 2 weeks ago on January 1, 2024
By Kyle Jaeger

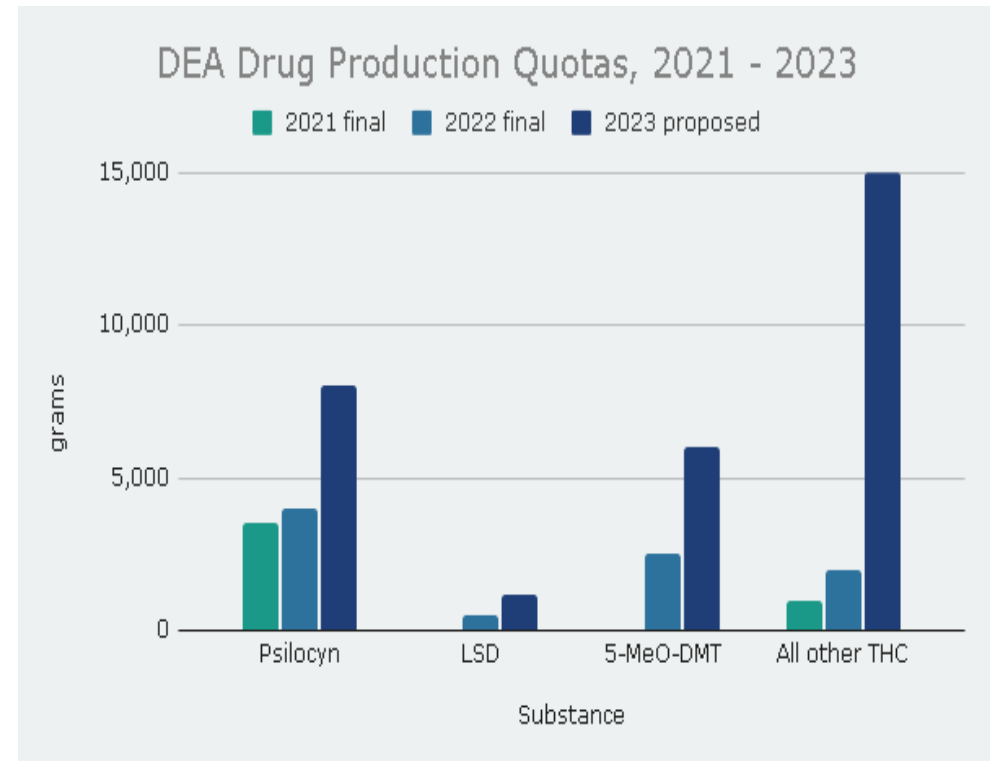
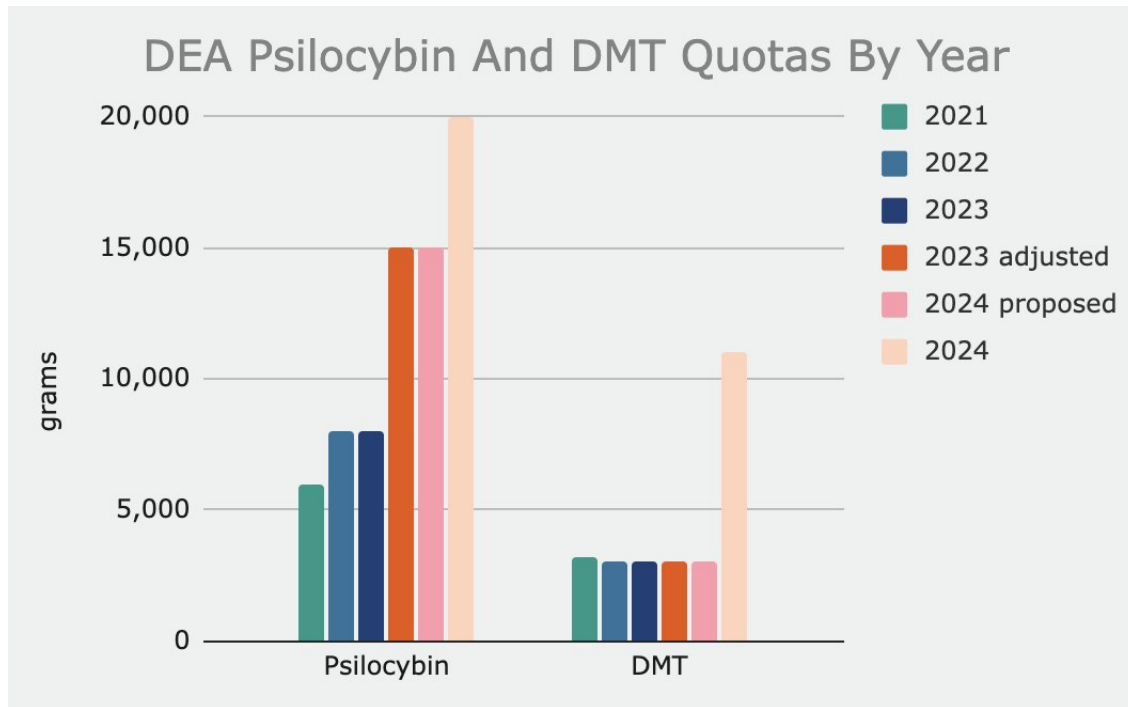


The Drug Enforcement Administration (DEA) is now calling for the production of even more THC, psilocybin and DMT for research purposes than it initially proposed for 2024—raising its quotas for those drugs while maintaining already high production goals for marijuana and other psychedelics.



DEA Drug Quotas 2021-2024

Psilocybin and DMT



Changes in regulation (examples)

USA, Oregon 2020

Oregon was first U.S. state to legalize psilocybin.

From January 2023 psychotherapists can treat their patients with psilocybin

Canada 2022

Health Canada made a amendment in January 2022

Allows doctors request access to certain psychedelics for any serious, life-threatening situation, or treatment-resistant condition

USA 2022

Two amendments were approved in the US House of Representatives in July 2022

Psychedelic Assisted Treatment Authorized for Veterans and Active-Duty service suffering from PTSD,

Canada, Alberta 2022

Alberta first Canadian province

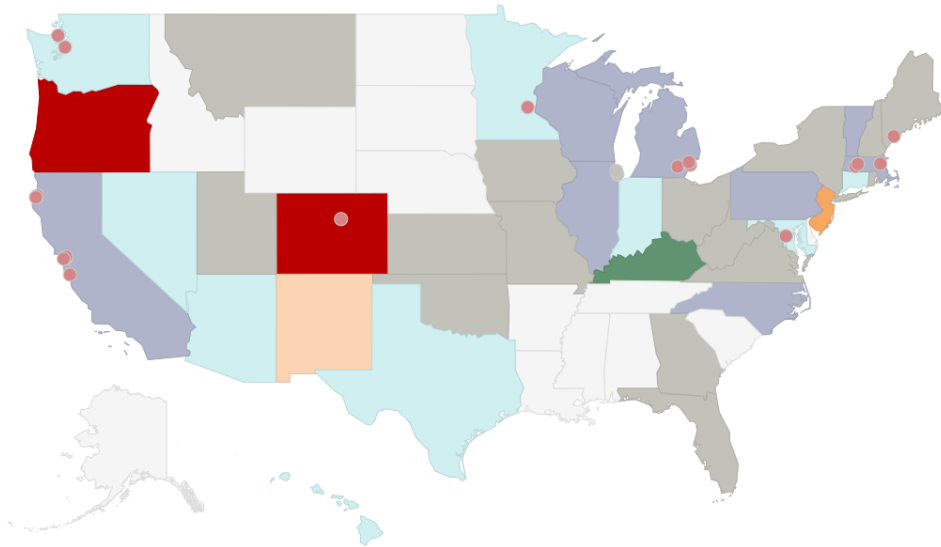
It allows the use of psychedelics for therapeutic use.

Australia 2023

Australian Therapeutic Goods Association, February 2023

Authorized the use of MDMA for the treatment of Post-Traumatic Stress Disorders that does not respond to treatment

Psilocybin as a treatment for treatment-resistant depression.



Mapping Psychedelic Drug Policy Reform in the United States

As the psychedelic renaissance contributes to a swelling pool of safety and efficacy data pertaining to the potential therapeutic benefits of psychedelic medicine, many localities—particularly in North America—are revising their legal frameworks.

This is happening in a number of ways: from the least rigorous incarnation which involves making the enforcement of psychedelics' illegality the lowest law enforcement priority in a given city (such as in Oakland and Washington, DC), right through to state-wide legalization of specific psychedelics (such as in Oregon and Colorado).

2 States in USA (listed #49 Oregon and # 51 Colorado) have legalized Psilocybin

In 2020, **Oregon** voters approved Oregon Ballot Measure 109. The measure allowed Oregon residents to manufacture and administer psilocybin.

Oregon residents can consume “magic mushrooms” in supervised facilities. The Oregon Psilocybin Services program issues licenses for these facilities and creates regulations for them.

The current regulations are not strict. A distributor does not need a medical license in order to run a facility. Employees do not have to watch people take mushrooms, though a safety plan must be in place to help people on bad trips.

You cannot use magic mushrooms in your home in Oregon. You must go to a facility to get your supply and you must remain there while taking the mushrooms. Oregon also requires you to have a prescription from your doctor for psilocybin, though personal use is decriminalized.

Ketamine and DMT are decriminalized. But you still face fines for possessing or transporting these drugs in Oregon.

In 2020, House Bill 19-1263 went into effect across **Colorado**. Possession of Schedule I drugs, including psilocybin, is now a misdemeanor. However, misdemeanors in Colorado are punishable by prison sentences and fines.

In 2022, Colorado voters passed another ballot initiative. This initiative finally decriminalized psychedelic mushrooms across the state. The state will also create healing centers where people can take mushrooms.

The initiative will take effect in 2024. The state has until then to draft regulations.

Under current regulations, residents 21 and older can grow and share mushrooms in their homes. However, they cannot sell them for personal use. People with possession convictions can apply to have their records sealed.

You will not need approval from your doctor to get mushrooms. This makes it possible to use them recreationally. Counties cannot vote to ban centers, though they can regulate them.

Safety Profile of Psychedelics

Original Paper

Adverse experiences resulting in emergency medical treatment seeking following the use of magic mushrooms

Emma I Kopra¹ , Jason A Ferris² , Adam R Winstock^{3,4} , Allan H Young^{1,5} and James J Rucker^{1,5} 



Journal of Psychopharmacology
2022, Vol. 36(8) 965–973
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Results: Out of 9233 past year magic mushroom users, 19 (0.2%) reported having sought emergency medical treatment, with a per-event risk estimate of 0.06%. Young age was the only predictor associated with higher risk of emergency medical presentations. The most common symptoms were psychological, namely anxiety/panic and paranoia/suspiciousness. Poor 'mindset', poor 'setting' and mixing substances were most reported reasons for incidents. All but one respondent returned back to normality within 24 h

HPPD – Hallucinogen – persisting perception disorder

Orsolini L, Papanti GD, De Berardis D, Guirguis A, Corkery JM, Schifano F. The “endless trip” among the nps users: psychopathology and psychopharmacology in the hallucinogen-persisting perception disorder. A systematic review. *Front Psychiatry.* 2017;0. doi:10.3389/fpsy.2017.00240

Risk of developing flashbacks : This disorder can lead to individuals re-experiencing the effects of the hallucinogen that were experienced while intoxicated with the substance. HPPD can lead to visual perceptual disturbances that can last for weeks, months, or even years and significantly impact one's life

DSM-5 diagnosis criteria for HPPD:

- ▶A) following cessation of use of hallucinogen, the reexperiencing of one or more of the perceptual symptoms that were experienced while intoxicated with the hallucinogens (e.g. geometric hallucinations, false perceptions of movement in the peripheral visual fields, flashes of color, trail images of moving objects, positive after images, haloes around objects, macropsia and micropsia

- ▶B) symptoms in criterion A, cause clinically significant distress or impairment in social, occupational or other important areas of functioning

- ▶C) symptoms are not due to a general medical condition and are not better accounted for by another mental disorder

Psychopathological and clinical features of HPPD

Psychopathological and clinical features	Description
Teleopsia	Objects are perceived much further away than they actually are
Pelopsia	Objects are perceived nearer than their actual size
Macropsia	Objects are perceived larger than their actual size
Micropsia	Objects are perceived smaller than their actual size
Criticism/egodystonic psychosis	Patient manifests criticism toward own thoughts and perceptual disturbances, as well as experiencing perceptual disorders perceived as inconsistent with one's self concept or ego state
Depersonalization	A state in which some individual feels that either he/she him/herself or the outside world is unreal
Derealization	A state in which an individual feels a detachment within the self-regarding one's mind or body or being a detached observer of oneself (e.g., Feeling like being inside a transparent bubble)
Feeling of body being light or heavy	
Visual trailing	Transient disturbance of visual motion perception of unknown origin (i.e., subject perceives a series of discrete stationary images trailing in the wake of otherwise normally moving objects)
Haloes around objects	A geometric shape, usually in the form of a disk, circle, ring, or rayed structure around an object really present
Afterimages/palimpsest	An image that continues to appear in one's visual field after the exposure to the original image has ceased
Other visual disturbances	Flashes of color Intensified colors Colored images Geometric imagery False perception of movement of images in the peripheral-field

HPPD, hallucinogen-persisting perception disorder.

Type 1 and II categories
Type 1 milder and pleasant
Type II prolonged and distressing

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Most common with LSD and MDMA/ecstasy and designer drugs

Recent article by Eric Dolan in Psychedelic Drugs remarked up to 4% of users have Type II HPPD and more commonly with dextromethorphan, nitrous oxide, benzos and 251-NBOMe, a designer drug

What are the Advantages and Disadvantages of Ketamine

Increases neural activity and creates neuroplasticity

Can allow patient's neural activity to overcome unhealthy recursive patterns

Examples:

- ▶ allow depressed individual to reduce or get away from negative thoughts
- ▶ allow OCD individual to take advantage of aversion therapy
- ▶ allow substance abuse individual to be more readily able to establish healthy thoughts and routines outside of their addictive behaviors
- ▶ allow individuals to get out of a pain feedback loop

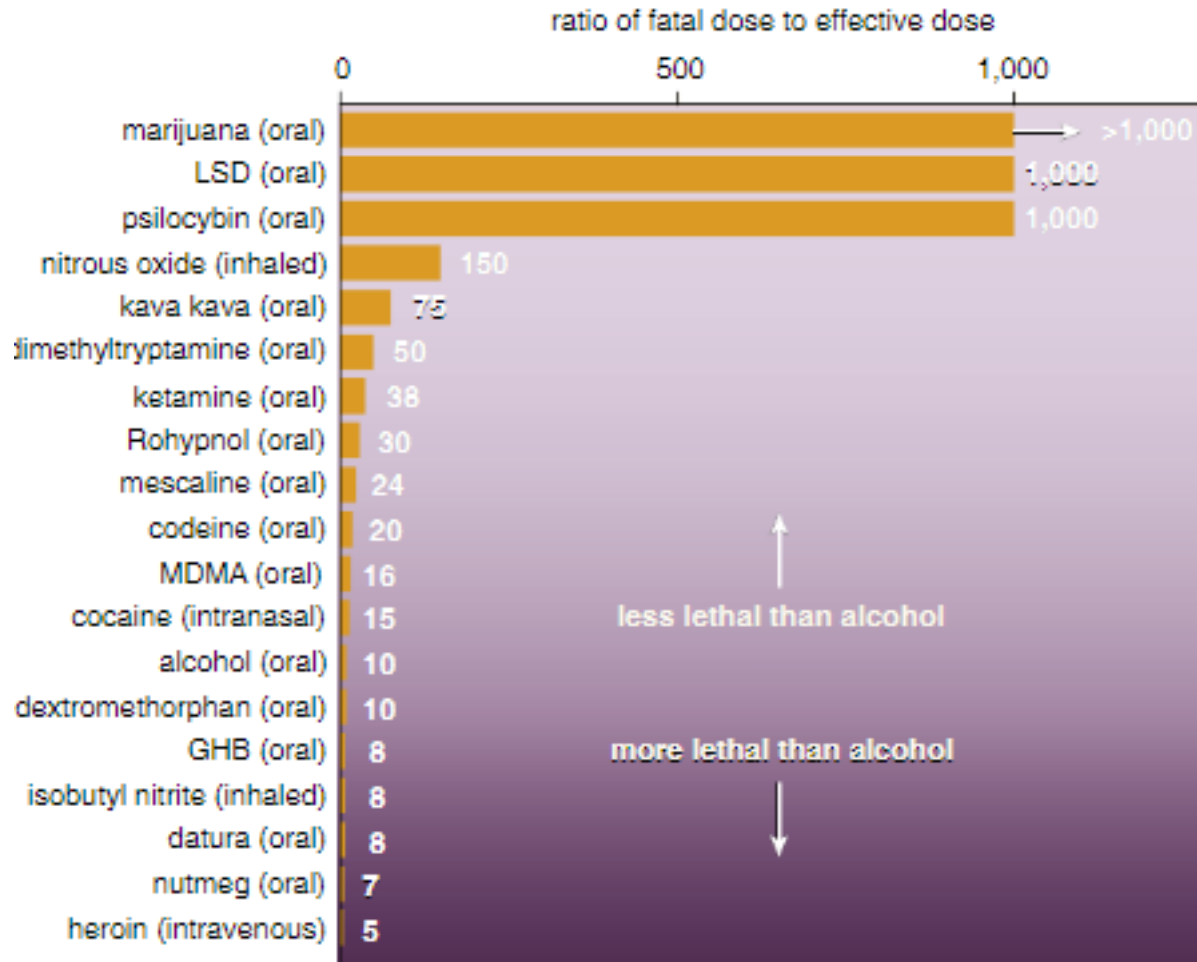
Not FDA approved for mental health treatment - yet

Adverse issues:

- abuse potential
- changes in BP and Heart rate
- respiratory depression
- bladder, liver and neurotoxicity

Thus, drug needs to be taken with medical supervision

Use in procedural sedation in ED- amnesia, airway reflexes intact, analgesia and dissociation-trance state



Ranking psychoactive substances by their ratios of lethal dose to effective dose gives a general picture of how likely each is to precipitate an acute fatal reaction. By this measure, many illicit drugs are considerably safer than alcohol.

Lethal doses of various drugs



How will we approach Psychedelic use at Underwriting time

- Context of the psychedelic use
- Medical use versus Recreational use
- Holistic approach (favorable / unfavorable attributes)
- Exercise caution with underlying medical condition
- Disclosure
- Detailed Drug Questionnaire

Unfavorable considerations when underwriting microdosing cases



Reason or motivation

Associated severe mental disorder. Last treatment option.

Dosage used

Greater than **1/10** of the recreational dose for the psychedelic substance used

Frequency

More than 2 times a week with prolonged use

Age

Younger than 20 years old

Comorbidities

Other reported disorders or diseases

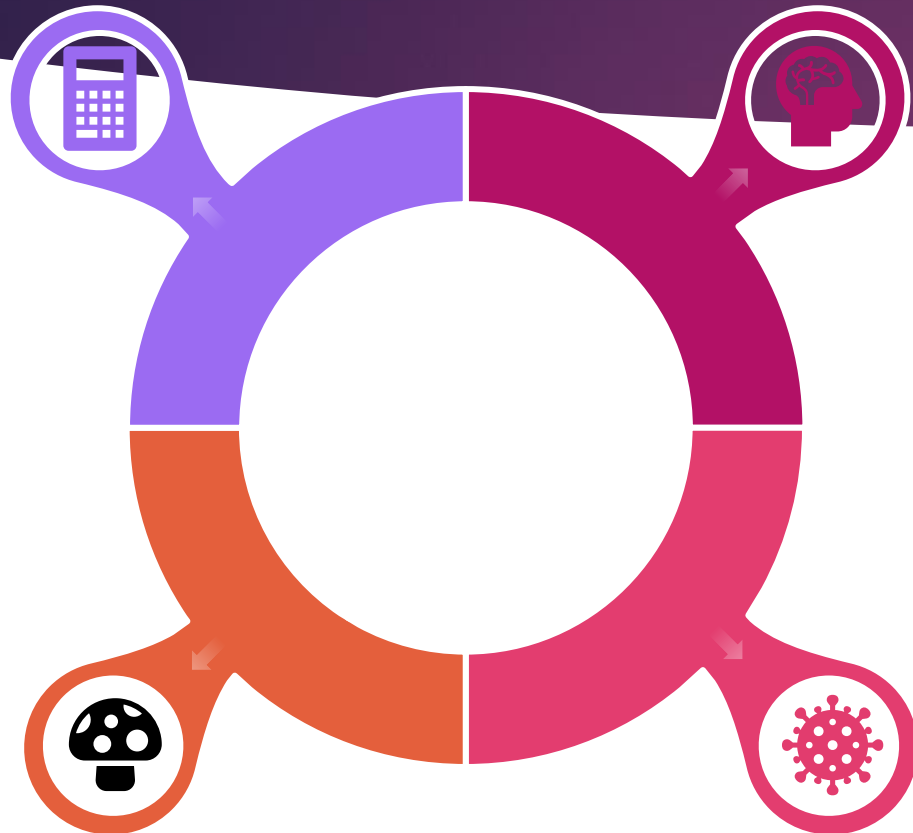
Alcohol/drug abuse

Disclosure family or personal history of drug or alcohol use

Environment: Risky behavior (e.g., gambling), financial difficulties, personal or work instability

Conclusions

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Mental health

impacted by Covid-19 → global deterioration

Microdosing psychedelics

Alternative to improve mental health and therapy for mental disorders

Impact on underwriting

Increased number of cases of mental health problems, mental disorders and microdosing.

How to rate

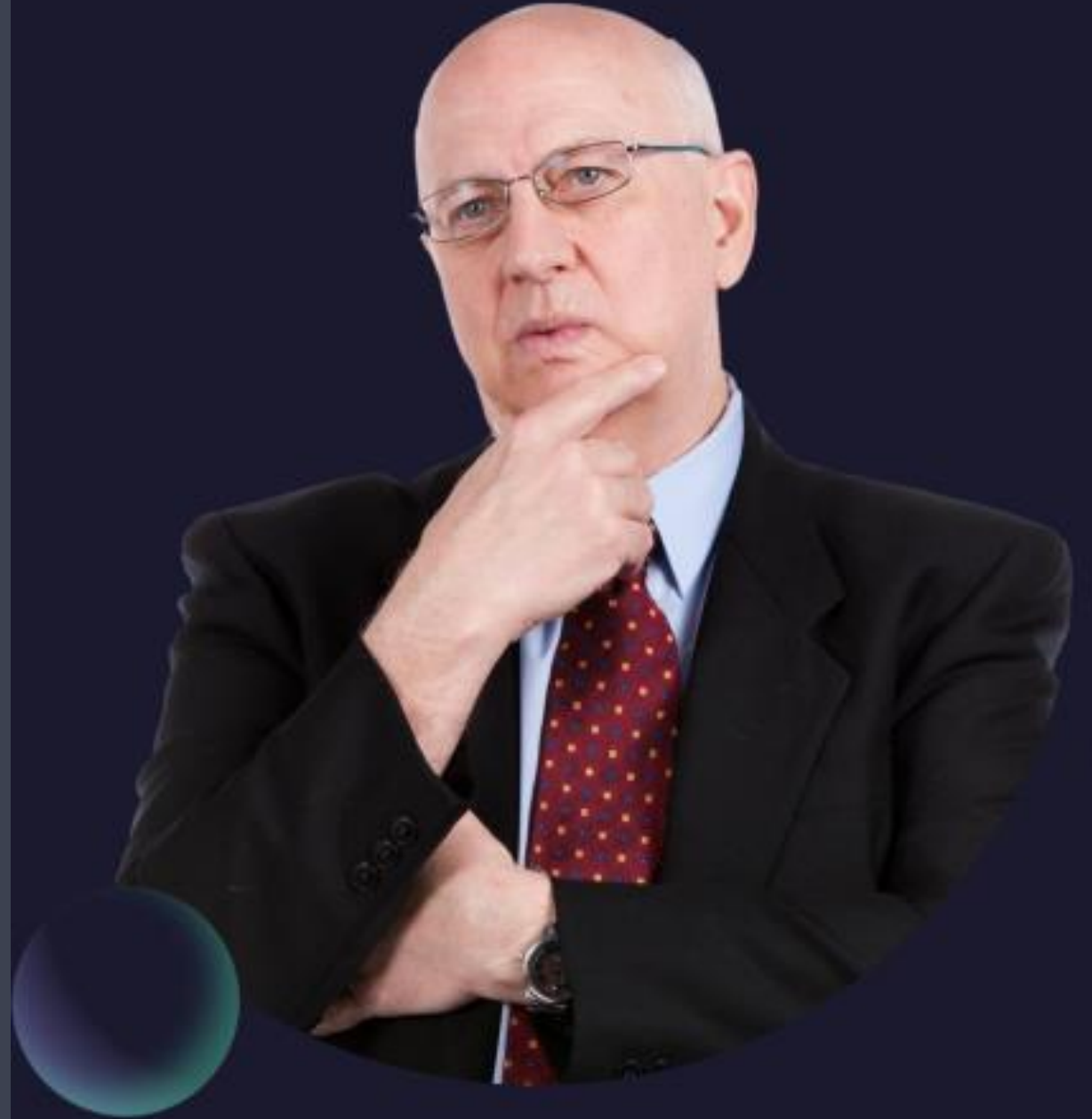
Reason, dosage, frequency, age, comorbidities, hx of any drug abuse

Case Studies

Case #1

M 47 NT \$50 MM

- ▶ CEO tech company in Oregon
- ▶ Inforce for \$20 MM not replacing
- ▶ Was sent on a corporate Journey for creative reset (Psilocybin retreat) 12/21



Case #2

- ▶ Male 55 NS 500K
 - ▶ IT Manager
 - ▶ Uses Magic Mushrooms spiritually
4 times year for solstice and Equinox
last 5 years
- Does not use Marijuana

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**PTSD HAS
KILLED
MORE
SOLDIERS
BY SUICIDE
IN THE U.S.
THAN WERE
KILLED IN
WAR SINCE
9/11.**

**FIND OUT HOW
PSYCHEDELIC
PROGRAMS CAN
HELP.**

Fewer than 10% of veterans who begin traditional PTSD treatment programs complete treatment and experience marked improvement. Preliminary research of HHP's psychedelic programs by King's College, London, suggests that **over 80%** of veterans experience significant improvement after participating in **just one** psychedelic program.

[Veteran Voices](#)

[Learn More](#)



ONE HERO'S JOURNEY



PROGRAMS FOR VETERANS



PROGRAMS FOR SPOUSES



PSYCHEDELICS



RESEARCH



ADVOCACY



Summary

The Psychedelic Renaissance what will the future hold ? Some therapist say it will become mainstream and widely used for therapeutic purposes while others caution that there are still many unknowns and potential risks associated with their use.

There are still many challenges to be overcome. Regulatory hurdles, concerns about the potential for abuse, and the need for further research to fully understand the risks and benefits of these substances.

It's clear that psychedelics have the potential to be a powerful tool in the treatment of mental health conditions, and it will be interesting to see how this field develops Stay tuned !