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Intermediate Composition

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Psilocybin Mushrooms as a potential treatment for Depression, Anxiety, PTSD and
Addiction and Other Mental Ailments

Psilocybin Mushrooms are an informal group of fungus that contain the psychoactive chemical compound psilocybin, with the most potent and commonly used specimens being found in the “Psilocybe” genus. The effects of Psilocybin can be compared to those of LSD and DMT.

Despite the near constant fear mongering campaign around psychedelics, and especially mushrooms, that has been kept up by the federal government and pharmaceutical industries over the past 70 years, the United States Food and Drug Administration has recently cleared them for medicinal use after an outpour of scientific studies on the subject over the past couple of decades.

Images found within prehistoric cave paintings in what is now modern-day Spain and Algeria suggests that the human use of psychedelic mushrooms predates recorded history. In Pre-Colombian Mesoamerica, psychedelic mushrooms have been consumed in spiritual and divinatory ceremonies long before Spanish chroniclers first documented their use in the 16th century.

Mushroom use was completely legal up until 1970 when the Nixon administration classified these substances as Schedule I substances, which means they had potential for addiction and had no medicinal value. Johns Hopkins scientists have suggest that if psilocybin

clears the current phase III clinical trials they are putting it through, it must be re-categorized to a schedule IV drug such as prescription sleep aids, as there is no scientific evidence of it being chemically addictive, and it is being shown to have numerous medicinal uses. The primary purpose of this according to John Ehrlichman, a key figure in Nixon's inner circle, was to oppress racial minorities and the growing American anti-war left wing. (Pollan)

“You want to know what this was really all about? The Nixon campaign in 1968, and the Nixon White House after that, had two enemies: the antiwar left and black people. You understand what I'm saying? We knew we couldn't make it illegal to be either against the war or be black, but by getting the public to associate the hippies with marijuana and blacks with heroin, and then criminalizing both heavily, we could disrupt those communities. We could arrest their leaders, raid their homes, break up their meetings, and vilify them night after night on the evening news. Did we know we were lying about the drugs? Of course we did.” - John Ehrlichman

Because of this, psychedelics remain more illegal than opiates, which are schedule II and kill 128 people a day.

Finally, in 2018 the United States Food and Drug Administration granted Breakthrough Therapy Designation for psilocybin-assisted therapy for treatment-resistant depression and in 2019, the FDA granted Breakthrough Therapy Designation for psilocybin therapy treating major depressive disorder. The stigma brought on from the right's unscientific war on drugs, is finally fading, and scientific progress can resume. (Compass)

Since 2019, 4 cities, Denver, Ann Arbor, Oakland and Santa Cruz, have decriminalized the possession of Psychedelic Mushrooms, with Chicago's city council expressing interest in the

idea, and the issue being up for voting for the entire state of Oregon in the November 2020 election, making it the first state to do so if passed. (Romero)

In the 1970s Timothy Leary, who was an avid advocate for psychedelics use, did numerous experiments to determine the common effects of psychedelic mushrooms. He found that the intensity and the duration of the effects of psilocybin can vary depending on species, dosage, the individual's physiology, and the situation and setting the individual is in.

Common effects include euphoria, hallucinations, both mental and visual, changes in perception, such as visual acuity as well as dissolving preconceived thought patterns, a distorted sense of time, and spiritual experiences. Individuals who are nervous or scared while going into it, or are put into an uncomfortable situation while "tripping" can have a bad trip which also includes possible adverse reactions such as nausea, scary hallucinations, anxiety, fear and panic attacks.

It is theorized by Michael Pollan, that bad trips are partly a result of the prohibition and demonification of mushrooms. Before their prohibition and slandering, the rate of bad trips was 4x less than in the present day. He also theorizes that "bad trips" can be caused by individuals realizing negative things they are doing in their life, and (Pollan)

While you can "overdose" on mushrooms, causing these "bad trips", psilocybin mushrooms have a very low toxicity factor, and dying as a result of an overdose is incredibly rare. One survey in 2016 found that out of more than 12,000 users who took psilocybin, only 0.2% reported emergency medical treatment, and none of the users died. That rate is more than 5 times lower than ecstasy, LSD, and cocaine. As of 2011, there have only been two cases attributed to overdosing on psychedelic mushrooms (without the use of other drugs concurrently) have been reported in scientific literature and may involve other preexisting factors aside from

psilocybin itself. According to John Hopkins, panic attacks and bad trips have no lasting negative effects on mood or behavior.

Mushrooms are, physically, the least dangerous drug. It should also be noted that they are not chemically addictive. (Solon)

According to Psychedelic Insights, a Dutch Psilocybin clinic, common benefits include meaningful positive change, the elimination of depression and anxiety, losing the fear of death, a sense of spiritual “oneness”, new connections, and breaking addictions. (Psychedelic insights)

In general, psilocybin’s effects are unpredictable and can be greatly affected by the mindset of the user and the setting in which they take the drug.

Psilocybin has been a subject of preliminary research since the early 1960s, when the Harvard Psilocybin Project evaluated the potential therapeutic value of psilocybin for personality disorders. (Wark) Due to the failed war on drugs, this research has been put on hold for about 50 years, and scientists are just now able to pick back up on the research says Dr James Rucker of King’s College in London. (Haines) Beginning in the late 2000s, research was able to resume testing the use of psilocybin to treat anxiety disorders, major depressive disorder, PTSD and various addictions. (Dos Santos)

When Mushrooms/Psilocybin are advocated for as medicine, they are not being advocated for complete legalization, and you can just buy them at gas stations. They are being advocated for being used in something called “Psilocybin Assisted Therapy”, in which you are administered psilocybin in a controlled environment.

There are tens of millions of Americans, living with depression, anxiety, PTSD and addiction that are not able to get the help they need. Traditional methods such as SSRIs and Therapy do not work for a large number of people. Around 300-350 million people worldwide

suffer from depression, and an estimated 20 percent of them see no benefit from existing medical treatments. (Haines)

Matthew Couch is a 40-year-old high school teacher from Denver. Matthew has been diagnosed with Major Depressive Disorder and Posttraumatic Stress Disorder due to the death of his mother in a car crash. He was completely unresponsive to antidepressant medicines and only found therapy to be marginally helpful. Faced with no other choice, he underwent experimental psilocybin therapy. During his trip, he felt like he had finally made peace with his mother, who he admitted wasn't the best mother. He says that the trip has allowed him to deal with a lifetime of trauma. He says that old patterns still pop up in his life, but he is able to deal with them fairly quickly and it's easier for him to let go of things than it used to. During his trip, Matthew decided to become a better man. He learned the guitar, which he has wanted to do for a long time, he's started eating healthier and exercising more. He feels more at peace with the world. (Haines)

Matthew's story isn't unique. There are thousands of people online, telling their stories about how these treatments have considerably improved their quality of life. There are quite literally hundreds of stories you can read on the internet about people who have defeated their mental illnesses because of psilocybin. And that's just the tip of the iceberg. Imagine how many people don't speak out, due to the stigma surrounding it. Imagine how many people we could save from depression or suicide induced PTSD, or literal suicide from those who succumb to their addictions. Think of the lives that could be saved and dramatically changed for the better.

In 2017, scientists at Imperial College London gave psilocybin therapy to 19 people with depression that has resisted all other treatments. Fewer depressive symptoms were observed in all patients after a week, with 47 percent of patients reportedly becoming depression-free five

weeks later. Due to these incredible results, in 2019 Imperial College opened a dedicated centre for studying psychedelics. (Haines)

Back in 2014, scientists at Johns Hopkins put 20 smoking addicts on an addiction treatment, which combined psilocybin with therapy. After six months the abstinence rate was 80 per cent, which is astronomically higher than the estimated 35 percent success rate attributed to other medications. (Haines)

In 2016, an American study known as the Psilocybin Cancer Anxiety Study, tested the effectiveness of psilocybin in reducing the stress among 29 cancer patients that comes with the diagnosis of a terminal illness. They found that psilocybin produced immediate reductions in both anxiety and depression, with around 80 percent of them reportedly showing sustained benefits even up to almost seven months later. This treatment helps people with terminal illnesses accept their fate and allows them to live out the rest of their days to their fullest. (Haines)

John Hopkins has recently made a new development regarding using pure chemical psilocybin, instead of getting it from psychedelic mushrooms, however, more research still needs done on this front. (Ridden)

There is also Microdosing, which is taking psilocybin in very small amounts every 2 or 3 days to still get the mood boosting, mental illness suppressing effects, while not fully tripping. This is an incredibly new practice, within the past decade or two, and to date there are four scientific articles on microdosing. Three of these indicate potential benefits from microdosing, but much more research needs to be done on the subject. (Polito)

Clinical trials take time. It is not unusual for it to take a decade or more for a novel medicine to become accepted in wider pharmacology. The trials are still going, they never stopped, and they look more and more promising every year.

What exactly does psilocybin do to the brain, though? Due to the “War on Drugs” putting research on the medicinal uses for psychedelics to a screeching halt, there has yet to be intense study done on exactly what is going on. Scientists have recently made some pretty interesting discoveries.

According to a new study published in the scientific journal *Neuropharmacology*, they’re research suggests that psilocybin, the active chemical in psychedelic mushrooms, helps to alleviate depression that is resistant to traditional treatment methods by reviving emotional responsiveness in the brain. After psilocybin assisted therapy, the patient's Amygdala’s, which is the part of the brain associated with emotional processing, showed dramatically heightened activity, almost back to the normal response’s you would see from a person without depression. (Roseman)

According to COMPASS pathways, a key research firm pushing psilocybin research forward, says that “The effect has been described as psilocybin shaking the brain up like a snow globe, or rebooting the brain, providing new connections and deactivating connections that might have caused depression.” (Curley)

Trials done at the Imperial College in London have also corroborated this claim of “mental reset” with this quote; “Several of our patients described feeling ‘reset’ after the treatment and often used computer analogies. For example, one said he felt like his brain had been ‘defragged’ like a computer hard drive, and another said he felt ‘rebooted’. Psilocybin may be giving these individuals the temporary ‘kick start’ they need to break out of their depressive

states and these imaging results do tentatively support a ‘reset’ analogy. Similar brain effects to these have been seen with electroconvulsive therapy” (Siddique)

A recent study by Scientists at Copenhagen University Hospital and Imperial College London has found that psilocin binding to 5-HT_{2A} causes psilocybin psychedelic experience. 5-HT_{2A} is a serotonin receptor complex, and if psilocin binds to this receptor complex, it could develop into chemical proof of Psychedelic Mushrooms ability to deal with serotonin deficiency, which is a common chemical imbalance caused by depression. (Bauer)

According to a study published in the Royal Scientific Journal, Brain activity typically follows specific neural networks. But in the people given psilocybin injections, cross-brain activity seemed more erratic, as if freed from its normal framework. But, when scientists looked closer, they noticed that the sparks of activity across the brains of their patients weren’t as random as they previously thought, Instead, the activity formed distinct patterns. [I have attached an image with this paper visualizing these neural reconnections.] These new connections allow parts of the brain that don't usually communicate to talk to each other. (Petri)

The use of all psychedelics, including mushrooms is not without risk however. Individuals who have a history or genetic predisposition to certain psychotic disorders such as Schizophrenia and Psychosis should avoid using psychedelics by all means.

Due to this, clinical studies at institutions such as Johns Hopkins exclude volunteers with a personal or a familial history of psychotic disorders or other severe psychiatric disorders. Use of psychedelics has been shown to increase a predisposed user’s risk of developing a psychotic disorder to be much higher.

I would like to say “Just don’t do them in an unsupervised environment”, but that is as silly as the government thinking people won’t do it just because they say so, so here is a bit of

harm reduction advice. If you are predisposed to a psychotic illness such as schizophrenia or psychosis, do not use psychedelics under any circumstances, especially in a recreational setting. Also, those who currently use antidepressants should completely wean off of them before using psilocybin, you are at potential risk for causing Serotonin Syndrome, which can be deadly.

I do not advise using Psilocybin in an uncontrolled setting, as there are many things that could go wrong, however, if you do choose to do so, please research how it will interact with how your current medications will interact with it.

As the use of psychedelics have become less and less stigmatized, more people are becoming comfortable with sharing their stories of incredible change that has happened to them because of using psilocybin, despite it still being a regulated substance (Pollan). Online communities such as those on the popular social media website, Reddit, are full of users cultivating and using psychedelic mushrooms to treat various mental illnesses. Communities such as “/r/shrooms” and “/r/microdosing” are two of the largest.

In 2016, Gweneth Paltrow sent her entire staff to Jamaica, where psilocybin is not illegal, to take psychedelic mushrooms under the watch of a psychiatrist. One staffer is quoted saying that she “felt like [she] had been through 5 years of therapy.” (Naftulin)

Psilocybin assisted therapy has a couple of major hurdles in its way. The first being that it is still federally illegal. It is a Schedule I Substance as of October 2020. The second, might be a bit harder to overcome. Generally speaking, psilocybin-assisted therapy involves only a few sessions. This is opposite of antidepressants (SSRIs/SNRIs) which are given as chronic pharmaceutical intervention with less psychological insights. In a healthcare system driven by profit, treating an illness is far more lucrative than curing one.

Psychedelics in general are also still heavily stigmatized in the eyes of the general public due to loads of misinformation being spread by the federal government and pharmaceutical companies, such as the notorious fake story involving a man believing he was a glass of orange juice after doing LSD. (Mikkelson)

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