RECREATIONAL DRUGS NOW BEING CONSIDERED FOR MEDICAL USE

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The psychedelic drug in "magic mushrooms" can quickly and effectively help treat anxiety and depression in cancer patients, an effect that may last for months, two small studies show.

It worked for Dinah Bazer, who endured a terrifying hallucination that rid her of the fear that her ovarian cancer would return. And for Estalyn Walcoff, who says the drug experience led her to begin a comforting spiritual journey.

The work released Thursday is preliminary and experts say more definitive research must be done on the effects of the substance, called psilocybin (sih-loh-SY'-bihn).

But the record so far shows "very impressive results," said Dr. Craig Blinderman, who directs the adult palliative care service at the Columbia University Medical Center/New York-Presbyterian Hospital. He didn't participate in the work.

Psilocybin, also called shrooms, purple passion and little smoke, comes from certain kinds of mushrooms. It is illegal in the U.S., and if the federal government approves the treatment, it would be administered in clinics by specially trained staff, experts say.
Ecstasy trials approved by FDA for PTSD patients

Telemedicine may work as well as in-person visits for depression

Most patients with depression get poor care, or none at all, study finds

Nobody should try it on their own, which would be risky, said the leaders of the two studies, Dr. Stephen Ross of New York University and Roland Griffiths of Johns Hopkins University in Baltimore.

Psychedelic drugs have looked promising in the past for treating distress in cancer patients. But studies of medical use of psychedelics stopped in the early 1970s after a regulatory crackdown on the drugs, following their widespread recreational use. It has slowly resumed in recent years.

Griffiths said it's not clear whether psilocybin would work outside of cancer patients, although he suspects it might work in people facing other terminal conditions. Plans are also underway to study it in depression that resists standard treatment, he said.

The new studies, published in the Journal of Psychotherapy, are small. The NYU project, which also included psychotherapy, covered just 29 patients. The Hopkins study had 51.
Bazer, who lives in New York, was diagnosed with ovarian cancer in 2010, when she was 63. Treatment was successful, but then she became anxious about it coming back.

"I just began to be filled with a terrible dread," she said in an interview. "You're waiting for the other shoe to drop. ... (The anxiety) was ruining my life."

She swallowed a capsule of psilocybin in 2012 in the company of two staff members trained to guide her through the several hours that the drug would affect her brain. As she listened to music through headphones, her eyes covered with a sleep mask, the drug went to work.

"Suddenly I was in a dark, terrifying place, lost in space, lost in time," she recalled. "I had no bearings and I was really, really terrified."

Then she saw her dread of a cancer recurrence as a black mass in her abdomen, and she furiously yelled at it to leave.

"As soon as that happened, the fear was gone," she said. "I was just floating in the music ... like being carried in a river."

Then she felt deep love for her family and friends, and sensed their love for her. "It felt like I was bathed in God's love ... I'm still an atheist, by the way, but that really seemed to be the only way to describe it."
Researchers said such mystical experiences appeared to play a role in the drug's therapeutic effect.

Walcoff, 69, a psychotherapist in Rochester, New York, also entered the NYU study because of her anxiety over a cancer recurrence, in her case, lymphoma. (Most participants had active cancer.)

Psilocybin "opened me up to pursue meditation and spiritual searching," Walcoff said, and as a result of that "I have become reassured and convinced that that phase of my life is over and it's not going to come back."

Most funding for the studies came from the Heffter Research Institute, a nonprofit organization that supports studies of psilocybin and other hallucinogens.

In both studies, psilocybin treatment had more effect on anxiety and depression than a placebo did. For example, by the day after treatment, about 80 percent of the treated NYU patients no longer qualified as clinically anxious or depressed by standard measures. That compares to about 30 percent for the placebo group. That's a remarkably fast response, experts said, and it endured for the seven weeks of the comparison.

The studies took different approaches for formulating a placebo. At NYU, patients were given niacin, which mimics some effects of psilocybin. At Hopkins, the placebo was a very low dose of psilocybin itself.

Researchers in both studies eventually gave full psilocybin treatment to the placebo groups and followed all the patients for about six months. The beneficial effects appeared to persist over that period. But the evidence for that is less strong than for the shorter term, because there was no longer any placebo comparison group. No severe side effects arose from the treatment.

Dr. William Breitbart, chief of the psychiatry service at Memorial Sloan-Kettering Cancer Center in New York, who didn't participate in the studies, said they were improvements over prior research on the topic. But there were still enough shortcomings to make him cautious about drawing conclusions, he said.

In any case, Bazer and Walcoff say the treatment affected more than their cancer anxieties. Walcoff said it has helped her work on being less judgmental and more self-accepting. Bazer said it made her a more patient driver and more active socially.

"It really changed everything for me," Bazer said. "And I still do not have anxiety about the cancer coming back."
Hallucinogenic drugs could soon work like a 'surgical intervention' for mental illness

Dinah Bazer was diagnosed with ovarian cancer in the spring of 2010.

The Brooklyn resident, an ice skating teacher and former bank IT programmer in her 60s, was devastated. Luckily, doctors were able to successfully treat her disease with chemotherapy, but the dread of a reoccurrence just wouldn’t go away. It was like waiting for the other shoe to drop.
"I was totally consumed with fear and anxiety," she said on a recent call with a group of reporters.

So in 2011, Bazer enrolled in a trial at New York University, where researchers were looking to test a substance that they hoped would have a seemingly "mystical" ability to lift depression and anxiety connected to fear about life's end.

The drug they were testing wasn't one dreamed up in a lab. It's the essential component of psychoactive magic mushrooms, psilocybin.

In a living-room-like setting at the Bluestone Center at the NYU College of Dentistry, accompanied by trained therapists, Bazer took a pill. At first she couldn't know whether it was the drug or a placebo, but once the effects started to come on, it would be clear. Sure enough, within about 40 minutes, she started to "trip."

"I visualized my fear as physical mass in my body," a black concentration, she said. She became angry, volcanic.

She screamed. "Get the f--- out!"

And then this woman who said she had been an atheist her entire adult life — and still is — had a strange sensation.

"I was bathed in God's love, and that continued for hours," she said. "I really had no other way to describe this incredibly powerful experience."

The feeling faded, but so did her fear, depression, and anxiety. They have not returned.
Spring for psychedelics

Bazer was a participant in one of two controlled clinical trials of the effects of psilocybin on patients dealing with depression and distress related to facing the end of life. Aside from a few smaller pilot studies, these two trials — one by researchers from Johns Hopkins University and the other, which Bazer participated in, at NYU — were the first major ones of their kind. The results from both studies were published in the Journal of Psychopharmacology on December 1, along with 10 commentaries by prominent experts in the field of psychiatry.

The results from both trials were encouraging enough that the scientists involved hope they'll be able to get consent from the Food and Drug Administration to move forward to a large-scale Phase 3 study, the third and final set of human trials that is needed before the FDA considers approving a new drug.

"This is a potential pathway to clinical approval," said Roland Griffiths, a professor of psychiatry and behavioral sciences at JHU School of Medicine, who led the JHU study and is one of the pioneers in the modern era of psychedelic research. "But that [approval] requires the next step of going to the FDA and getting permission to move forward."

The recent announcement that the FDA would allow trials using MDMA — the chemical name for the drug commonly known as Molly or Ecstasy — to treat post-traumatic stress disorder to move to Phase 3 gives him hope, too, especially since he says MDMA might have even more "baggage" than psilocybin when it comes to getting approval.
In a certain sense, this is a renewal of research into the power of psychedelic substances, according to Griffiths and Stephen Ross, an associate professor at NYU's School of Medicine, who led the NYU study.

In the 1950s and 60s, psychiatrists were enthralled by the power of LSD, psilocybin, and other hallucinogens — substances that seemed able to reorganize the way that patients viewed the world and, they say, appeared to help them overcome struggles with alcoholism and other addictions. But the drug prohibition era put an end to that research for decades.

Scientists have only recently begun to experiment again with these substances. Griffiths told Business Insider he started looking into experiments with healthy volunteers around 2000, at a time that such a suggestion shocked review boards, which thought it would be far too dangerous.

But slowly, he was able to convince them. He began to recruit volunteers who hadn't tried LSD or magic mushrooms. This was one of the hardest parts, he says, since he wanted people naive to psychedelics, but most of the people he found who weren't scared of the idea had already experimented some.

A single dose

After the researchers studied a number of healthy people, certain things about psilocybin's effects became clear. In a therapeutic setting, they didn't find any serious, long-lasting adverse effects of the drug. That doesn't mean that they found it to be totally risk-free, however.

Griffiths is also the senior researcher on another paper published December 1 in the Journal of Psychopharmacology that surveyed people who took hallucinogens outside a clinical setting about their worst experiences. Some people said they had gone through difficult or dangerous experiences, some of which caused them to seek psychological treatment later. (That's a small percentage of psychedelic use cases, and many others said their experiences were important and meaningful, but it's worth being aware of.)

But in a clinical setting, a high percentage of volunteers reported that the experience was one of the most meaningful they'd had in their life, calling it spiritual — something that inspired reverence and increased their overall life satisfaction.

Most compelling was that this substance appeared capable of reliably and consistently inducing what are known as "mystical experiences."
These profound effects were so powerful that eventually Griffiths and other researchers tried psilocybin on people struggling to cope with anxiety about the end of life because they’d been diagnosed with a life-threatening illness or disease like cancer. We don’t have a good way to treat the existential anxiety and depression that's prominent in cancer patients and doesn't respond well to traditional treatment, he told Business Insider.

Yet a single dose of psilocybin did seem helpful, in a profound way.

The researchers gave patients a dose that was about 20 milligrams of psilocybin for a person weighing 70 kilograms, or 154 pounds. Griffiths' previous work has shown that people who have "bad trips" frequently take more — a median of 30 mg, which is approximately 4 grams of dried mushrooms.

It takes about 20 to 40 minutes for people to start feeling the effects. Patients listened to music during their experience. Griffiths says their playlist included a mixture of classical music, including Henryk Gorecki, Bach, and Beethoven; Indian chant, including Russill Paul's "Om
Namah Shivaya; new age works; and world music, so the researchers could study the "best" music for the experience.

The effects of psilocybin fade after about four hours — one of the reasons researchers like to work with that drug instead of LSD, which can last up to 12 hours.

Afterward, patients talked and wrote about what they'd gone through.

Even six months after the experience, 80% of the 51 participants in the JHU study showed significant decreases in depression and anxiety, as measured by what's considered a gold standard psychiatric evaluation. The NYU team says that between 60% and 80% of its 29 participants had similarly reduced anxiety and depression 6.5 months after a single psychedelic trip.

These findings correspond with results from other pilot studies on psilocybin so far. These studies on treating depression and anxiety related to cancer have been promising enough that researchers began small studies on using psilocybin to treat more common forms of depression. And so far, those results have been encouraging.

Traditional medicine for these conditions is taken over time, has side effects, and often isn't much better than a placebo. In this case, one dose seemed able to make a huge difference.

Griffiths says one way psychedelic researchers have characterized this is as the inverse of PTSD. With PTSD, one terrible experience can change the way a person's brain causes them to perceive the world, with long-lasting effects. This is like the opposite of that — a single meaningful experience that people highly value and has transformational, enduring effects.

"I don't think we have any models in psychiatry like that," Griffiths said on the call with press. "It's more like a surgical intervention."

Still, it's early in the research process. Hundreds of people have now safely received doses of psilocybin, but the drug is still considered a Schedule I drug by the Drug Enforcement Agency, meaning it legally has no accepted medical use. Any researcher will tell you that before they can truly say psilocybin is a safe and effective drug, it needs to get through the strenuous FDA approval process.

And with psilocybin and other psychedelics, there's still a massive unanswered question, one that we may be far away from understanding: How do they work?
Mystical experiences in the brain

We know that people who take psilocybin and other hallucinogens — in these studies, participants consumed synthetic psilocybin, not the mushroom form — report that they have mystical or spiritual experiences, things they consider significant. But we don't know what causes those experiences.

As Griffiths explained to me, we still don't know what in the brain is responsible for consciousness itself. We don't really have a good way to scientifically characterize the things that transform consciousness.

"We're at very primitive levels of understanding deeper experiences of this type," he said.

We have theories. One interesting one has to do with a network in the brain known as the default mode network, something we associate with self-referential thought — thinking about
ourselves. In depressed people, activity in this brain network goes way up, perhaps because of some sort of self-obsession or rumination associated with depression.

But at certain times, this activity drops. Meditation seems to be associated with a strong drop in brain activity in this network, which seems to correspond with the idea of ego dissolution that is the goal of some meditative practices, according to Griffiths. He says he actually became interested in studying psilocybin because of his long-standing meditation practice, which made him think about consciousness and the meanings of spiritual experiences (though he says he was initially a skeptic about hallucinogens). Psilocybin seems to cause a drop in default mode network activity that's very similar to that induced by certain meditators.

Visualization of the connections in the brain of a person on psilocybin, right, and of a person not given the drug. Journal of the Royal Society Interface

But the induced mystical experience is so profound that Griffiths thinks that decrease in activity can't be all that's going on.

"I'm very suspicious of simplistic stories," he said.

Even people who don't really find the experience "mystical" still seem to undergo a reorganization in the brain that changes their perception of the world, something that seems beyond explanation so far. Even harder to understand are the long-term changes caused by the drug.

Looking forward
The patients in the studies published December 1 were all dealing with cancer-related end-of-life anxiety, and it should be stressed that, for now, those are the only people whom we have some idea of how psilocybin affects in a clinical sense.

The two studies had relatively similar designs, though there were some differences. The NYU study had more of an organized psychotherapy component, and the people who observed the participants were trained therapists. In the JHU study, which involved more participants, some of the observers were psychologists, while others had no formal training.

In both studies, participants had two interventions: one with a full dose of psilocybin, and another with a sort of placebo. NYU used niacin, a form of vitamin B, as a placebo. JHU gave participants psilocybin both times, but one was a very low non-psychoactive dose: 1 mg/70 kg instead of 20 mg.
Griffiths says that since participants knew they would get psilocybin both times, they had some ability to distinguish the difference between when they expected to feel better because they'd "taken psilocybin" and when they actually had the full psychedelic experience.

And while these are the largest studies of their type so far, they're still pretty small.

Researchers say they'll need to see similar results in a larger number of patients dealing with end-of-life anxiety, most likely from cancer at first. Griffiths and Ross both said they expect other studies will then look at patients dealing with terminal illnesses and existential anxiety — though there is definitely a chance that if psilocybin proves effective in these cases, it could work for other cases of depression and other kinds of anxiety. They're beginning to design trials for that research now.

"This is just a long and continuing process," Griffiths said. "When I initiated this research, most of my colleagues were skeptical ... people thought I had gone a little nuts. ... Now I get calls all the time from students who are familiar with what I'm doing and say, 'I want to do that.'"

"I would think in time, whether it's 10 years or 20 years, we're going to have learned how to optimize the use of these compounds, and we're going to have really good models for using them therapeutically," he said. "Some of this past baggage will fall away."
Using Ecstasy to treat PTSD: ‘I felt like my soul snapped back into place’

BY CALEB HELLERMAN  December 1, 2016 at 10:25 AM EST

Illustration by Getty Images

In nearly a decade trying to recover from post-traumatic stress disorder caused by childhood abuse, Jessi Appleton compiled a medical chart that reads like a Chinese restaurant menu. Biofeedback. Neurofeedback. Anti-depressants. Anti-anxiety medication. She tried a popular treatment called Eye Movement Desensitization and Reprocessing (EMDR), where she spent hours letting her gaze follow a therapist’s hand as it moved through carefully prescribed patterns. She tried another gaze-based therapy, called brainspotting.
“EMDR helped the most, but I was hitting a wall,” says Appleton. “I was suicidal. I was like this ghost sort of thing, walking through life. And I felt like nothing was going to change.”

Then she tried a new experimental treatment: therapy under the influence of MDMA, better known as Ecstasy. Her therapist suggested she sign up to be part of a pilot study. After three sessions, she said, “I felt like my soul snapped back into place.”

Appleton, 32, was treated in Boulder, Colorado, in a study arranged and funded by the Multidisciplinary Association for Psychedelic Studies (MAPS), an organization that has long pursued a strategy of supporting rigorous scientific research into otherwise illegal drugs.

Jessi Appleton, said nothing helped relieve her PTSD until she tried MDMA-assisted therapy. Photo courtesy of Jessi Appleton

On Tuesday, the Food and Drug Administration (FDA) gave the treatment an important boost, when agency officials met with officials from MAPS to start clearing the way for one or more large-scale research studies. According to Rick Doblin, MAPS’ founder and executive director, officials with the FDA’s Division of Psychiatry Products will not require additional studies prior to launching a Phase 3 trial, a critical round of testing that determines whether a medical treatment can be approved for widespread use.
“It was a very collaborative discussion, in light of the need to develop new treatments for PTSD for veterans and others,” Doblin says. “They recognize that this is a novel treatment, combining psychotherapy and pharmacotherapy, and there’s nothing else like it right now.”

The FDA says that federal law and internal regulations prohibit the agency from commenting on studies about pending applications or drugs still in development.

“PTSD is always distracting you from facing your problems, because it’s terrifying. On the MDMA, you’re finally able to face the stuff that you’ve been pushing down for so many years.”

Details will be worked out over the next several months, but Doblin says that Phase 3 is likely to include at least 230 patients treated at roughly a dozen sites around the country.

Doblin and Appleton’s lead therapist, psychotherapist Marcela Ot’alora, say the therapy component is crucial. After a handful of preparatory meetings, the patient takes the drug under the watchful eyes of a two-person treatment team — almost always a man and a woman. Across studies, the dosage varies, but it is typically between 75 and 125mg, enough to trigger a strong experience. Like others, Appleton wore eyeshades and spent several hours lying back on a small couch, mostly in silence.

“It’s a lot of inner dialogue,” Appleton recalls. “Sometimes you’re terrified, sometimes relaxed, sometimes it’s other emotions. It’s intense, and by the end it’s exhausting.”

Ot’alora says her role is mostly supportive. Echoing Appleton’s description, she says the drug seems to help patients let go of their inner critic, or inner demons. “That part of you becomes a witness, saying, ‘This is what’s happening to you, this is what happened to you and this is how it felt.’ It’s very matter of fact.”

PTSD has garnered attention as a problem that plagues returning war veterans, but the majority of those with the disorder are civilians. The National Center for PTSD says that nearly one in 15 Americans, including one in 10 women, will be afflicted at some point in their life. PTSD can be triggered by a single, terrifying incident or by repeated abuse. In effect, the brain and body get stuck in a loop of overreaction to normal stimuli; symptoms may include nightmares, panic attacks and avoidance of normal situations or interactions that remind the patient of their initial trauma.
“It comes out of the fundamental terror part of the brain,” says Dr. Bessel van der Kolk, a psychiatrist and trauma researcher in Boston. “It doesn’t allow you to focus on anything new, because you’re preoccupied with the past threat.” To break the cycle, van der Kolk says, a patient needs to get beyond the ongoing sense of visceral terror. For some patients, talking about the trauma, even thinking about it, is too much.

That’s where MDMA seems to come in. “What we see in the sessions is that it seems to kind of bring people down from being overwhelmed by emotions,” says Dr. Michael Mithoefer, a psychotherapist who led the first MAPS-funded studies using drug-assisted therapy for PTSD. “At the same time, it also kind of brings them up from being numb or disconnected from those emotions.”

That’s how Appleton describes it, too. “PTSD is always distracting you from facing your problems, because it’s terrifying. On the MDMA, you’re finally able to face the stuff that you’ve been pushing down for so many years.”

A variation of an amphetamine molecule, MDMA was initially synthesized in 1912 and promptly forgotten. It was resynthesized in the 1970s by the iconoclastic chemist Alexander Shulgin, who shared it with friends who were psychotherapists and who tested the drug informally, in their practices.

Alexander Shulgin, pharmacologist and chemist who synthesized MDMA in the 70s, is interviewed in Cambridge, Massachusetts December 1, 2005. Photo by Brian Snyder/Reuters
But it wasn’t just doctors who were struck by the drug. Christened “Adam” and later “Ecstasy,” MDMA became wildly popular on the black market. Early on, there were casualties, even a handful of deaths. Typically, hospitalizations resulted from overheating in people who took the drug and danced for hours, or, paradoxically, who essentially overdosed on water while trying to stay hydrated.

A backlash followed. In 1985, the Drug Enforcement Administration (DEA) listed MDMA as a so-called Schedule 1 substance, a category reserved for substances with a “high potential for abuse” and “no currently accepted medical use.” The DEA’s move overruled the recommendation of the agency’s own administrative judge, who had urged that the drug be placed in a less restrictive category, to encourage more research.

In the largest study to be published, more than 80 percent of participants were significantly better at their long-term follow-up – as many as six years after the last treatment session.

The resurgence of scientific interest began in 2004, when Mithoefer won permission to launch his first pilot study. Since then, more than 100 patients have been treated in a series of trials in the U.S., Switzerland and Israel. In the largest to be published, more than 80 percent of participants were significantly better at their long-term follow-up – as many as six years after the last treatment session. Prior to receiving MDMA, all had moderate or severe symptoms and weren’t helped by conventional care. In the controlled setting of a therapist’s office, there have been no significant bad reactions.

Despite that safety record, many participants say they were initially wary of taking part. “I was nervous,” says Appleton, who says that prior to the study she had never tried MDMA. “Lots of my family were like, ‘You’re going to be a drug addict.’”

Removing a drug from Schedule 1 is rare but not unheard of. Marinol, a drug extracted from the marijuana plant, was approved in 1985 as a medication for severe nausea. In 2002, a variation of GHB, the so-called date rape drug, was approved as a treatment for narcolepsy.

Beyond the taboos lie other hurdles to testing the treatment on a bigger scale. The proposed Phase 3 study will require dozens of therapists to learn a new approach. That challenge is doubled by the fact that they will work in pairs. What’s more, the approach, with its long stretches of quiet — can be unsettling to newcomers.
“I was skeptical at first,” says Monnica Williams, a professor of psychology at the University of Connecticut, who attended a training session this summer in Charleston, South Carolina, for therapists interested in working on the Phase 3 trial. “But seeing videotapes of all the patients who seemed to get so much better, I was converted.”

In some ways, Williams personifies the challenge of translating a treatment that’s effective in small studies to a broader population. Prior to training, she knew little of MDMA’s history as a medicine. She’s also African-American, unlike the therapists who ran the initial studies and all the patients who signed up for them.

“I was contacted by someone at MAPS who had noticed they don’t have much diversity in their study sample. They wanted to talk about how to reach minority communities, and to make sure the work is generalizable,” Williams says. It won’t be easy, but she says the need for better treatments is huge, and she wants to help.

“When people call asking for PTSD treatment, half don’t show up to the first visit,” Williams says. “It’s hard to talk about. If we can find a way to make treatment less awful and more humane, I’m all for it.”

MDMA-assisted therapy is neither easy nor fun, Appleton said. “The first session, you’re still terrified. The second session, I think I was still holding back,” she says. “The third session, I knew what to expect, and that was the big one.”

Since finishing the treatment just over a year ago, Appleton says she’s continued to improve. She’s enjoying life with her 7-year-old son, and working on a memoir about her experience.

“Everyone says, ‘you look better, you’re not slouched over,’” says Appleton. “I used to always make myself so small. I’m still myself, but it’s different. It feels great.”
FDA approves large-scale trials of ecstasy to treat PTSD

Phase 3 trials of MDMA will involve at least 230 patients

by Amar Toor @amartoo  Nov 30, 2016, 5:12am EST

The Phase 3 research will involve at least 230 patients, the *Times* reports, and will be funded by the Multidisciplinary Association for Psychedelic Studies (MAPS), an organization that advocates for the medical use of marijuana, LSD, and MDMA (also known as ecstasy). MAPS has already funded six Phase 2 studies of MDMA, involving 130 PTSD patients in total. In one study involving 19 PTSD patients, 56 percent said their symptoms declined in severity after receiving three doses of MDMA; by the end of the study, two-thirds didn’t meet the criteria for having PTSD.

“I’M OUT OF THE DARKNESS AND THE WORLD IS ALL AROUND ME.”

The researchers who conducted the study have applied for breakthrough therapy status with the FDA. If their proposal is approved, MDMA could be administered by psychotherapists as early as 2021. But there are concerns that approving the drug for therapeutic use could lead to broader recreational use, in the same way that prescription opioids have.

“It sends the message that this drug will help you solve your problems, when often it just creates problems,” Andrew Parrott, a psychologist at Swansea University in Wales, tells the *Times*. “This is a messy drug we know can do damage.”

But some who suffer from PTSD see hope in MDMA. Two drugs currently approved to treat PTSD work only slightly better than placebo in trials, and psychotherapy can take a long time to show results.

“I just felt hopeless and in the dark,” C. J. Hardin, a veteran who did three tours in Iraq and Afghanistan, tells the *Times*. Hardin tells the *Times* that his PTSD led to alcoholism, divorce, and suicidal thoughts. “But the MDMA sessions showed me a light I could move toward. Now I’m out of the darkness and the world is all around me.”

http://www.medicalexpose.com/
The term *medical marijuana* refers to using the whole unprocessed marijuana plant or its basic extracts to treat a disease or symptom. The U.S. Food and Drug Administration (FDA) has not recognized or approved the marijuana plant as medicine. However, scientific study of the chemicals in marijuana, called *cannabinoids*, has led to two FDA-approved medications that contain cannabinoid chemicals in pill form. Continued research may lead to more medications.

Because the marijuana plant contains chemicals that may help treat a range of illnesses or symptoms, many people argue that it should be legal for medical purposes. In fact, a growing number of states have legalized marijuana for medical use. Read more about marijuana-related state laws at [www.whitehouse.gov/ondcp/state-laws-related-to-marijuana](http://www.whitehouse.gov/ondcp/state-laws-related-to-marijuana).

### Why isn’t the marijuana plant an FDA-approved medicine?

The FDA requires carefully conducted studies (clinical trials) in hundreds to thousands of human subjects to determine the benefits and risks of a possible medication. So far, researchers have not conducted enough large-scale clinical trials that show that the benefits of the marijuana plant (as opposed to its cannabinoid ingredients) outweigh its risks in patients it is meant to treat.

What are cannabinoids?

Cannabinoids are chemicals related to delta-9-tetrahydrocannabinol (THC), marijuana’s main mind-altering ingredient. Other than THC, the marijuana plant contains more than 100 other cannabinoids. Scientists as well as illegal manufacturers have produced many cannabinoids in the lab. Some of these cannabinoids are extremely powerful and have led to serious health effects when abused.

The body also produces its own cannabinoid chemicals. They play a role in regulating pleasure, memory, thinking, concentration, body movement, awareness of time, appetite, pain, and the senses (taste, touch, smell, hearing, and sight).

What is CBD?

There is growing interest in the marijuana chemical cannabidiol (CBD) to treat certain conditions such as childhood epilepsy, a disorder that causes a child to have violent seizures. Therefore, scientists have been specially breeding marijuana plants and making CBD in oil form for treatment purposes. These drugs may be less desirable to recreational users because they are not intoxicating.
How might cannabinoids be useful as medicine?

Currently, the two main cannabinoids from the marijuana plant that are of medical interest are THC and CBD.

THC increases appetite and reduces nausea. The FDA-approved THC-based medications are used for these purposes. THC may also decrease pain, inflammation (swelling and redness), and muscle control problems.

CBD is a cannabinoid that does not affect the mind or behavior. It may be useful in reducing pain and inflammation, controlling epileptic seizures, and possibly even treating mental illness and addictions.

NIH-funded and other researchers are continuing to explore the possible uses of THC, CBD, and other cannabinoids for medical treatment.

For instance, recent animal studies have shown that marijuana extracts may help kill certain cancer cells and reduce the size of others. Evidence from one cell culture study
suggests that purified extracts from whole-plant marijuana can slow the growth of cancer cells from one of the most serious types of brain tumors. Research in mice showed that treatment with purified extracts of THC and CBD, when used with radiation, increased the cancer-killing effects of the radiation (Scott, 2014).

Scientists are also conducting preclinical and clinical trials with marijuana and its extracts to treat numerous diseases and conditions, such as the following:

- autoimmune diseases (diseases that weaken the immune system):
  - HIV/AIDS
  - multiple sclerosis (MS), which causes gradual loss of muscle control
  - Alzheimer’s disease, which causes loss of brain function, affecting memory, thinking, and behavior

- inflammation
- pain
- seizures
- substance use disorders
- mental disorders


Are People with Health- and Age-Related Problems More Vulnerable to Marijuana’s Risks?

Regular medicinal use of marijuana is a fairly new practice. For that reason, its effects on people who are weakened because of age or illness are still relatively unknown. Older people and those suffering from diseases such as cancer or AIDS could be more vulnerable to the drug’s harmful effects. Scientists need to conduct more research to determine if this is the case.

What medications contain cannabinoids?

Two FDA-approved drugs, dronabinol and nabilone, contain THC. They treat nausea caused by chemotherapy and increase appetite in patients with extreme weight loss caused by AIDS.
The United Kingdom, Canada, and several European countries have approved nabiximols (Sativex®), a mouth spray containing THC and CBD. It treats muscle control problems caused by MS. The United States is conducting clinical trials for its safe use in treating cancer pain. Although it has not yet undergone clinical trials, scientists have recently created Epidiolex, a CBD-based liquid drug to treat certain forms of childhood epilepsy.

Points to Remember

- The term medical marijuana refers to treating a disease or symptom with the whole unprocessed marijuana plant or its basic extracts.
- The FDA has not recognized or approved the marijuana plant as medicine.
- However, scientific study of the chemicals in marijuana called cannabinoids has led to two FDA-approved medications in pill form.
- Cannabinoids are chemicals related to delta-9-tetrahydrocannabinol (THC), marijuana’s main mind-altering ingredient.
- The body also produces its own cannabinoid chemicals.
- Currently, the two main cannabinoids from the marijuana plant that are of interest for medical treatment are THC and cannabidiol (CBD).
- Scientists are conducting preclinical and clinical trials with marijuana and its extracts to treat numerous diseases and conditions.
- Two FDA-approved marijuana drugs are dronabinol and nabilone, both used to treat nausea and boost appetite.

Learn More

For more information on marijuana and its health effects, visit:

- [www.drugabuse.gov/publications/research-reports/marijuana](http://www.drugabuse.gov/publications/research-reports/marijuana)
- [www.drugabuse.gov/publications/drugfacts/marijuana](http://www.drugabuse.gov/publications/drugfacts/marijuana)

For more information on marijuana and cannabinoid research conducted by NIDA and NIH, visit:
Marijuana Used for Health Reasons
For years, marijuana has been successfully used to help people with serious health issues, particularly with cancer patients. Cancer patients should not have to travel to states where it is legal just to get treatment that can make their lives better and allow them to feel better. Because of the stigma attached to marijuana, many sick patients are afraid to get marijuana. Additionally, legalizing marijuana will allow sick patients to have it without having to jump through hoops just to get it for medicinal purposes. Marijuana has proven to have health benefits for more than just cancer patients.
More Stress-free Travel
If an individual lives in a state where marijuana is legal for medicinal or recreational purposes, they're safe from arrests in that state but not when traveling to other states. Legalizing marijuana would make traveling with marijuana safe and stress-free.

Safer than Alcohol and Legal Prescription Drugs
While alcohol and prescription drugs are responsible for almost 200,000 deaths each year, marijuana is safe to use and will not kill you. Before marijuana could even begin to be harmful, an individual would have to consumer more than it’s even possible to consume.

Legal Sale Would Be Helpful to Young Adults
Marijuana is used by more than 25 million people annually, and the number is increasing every year, particularly with teenagers and young adults. While illegally purchasing marijuana, teenagers are having access to more harmful and illegal drugs. Legalizing marijuana would eliminate this danger-causing problem.

Save on Court Costs
Every day thousands or more individuals are arrested for using or possessing marijuana, which results in filled courts and excessive court costs. Legalizing marijuana
will eliminate the court costs and allow the courts to concentrate on serious legal cases.

**Fewer Full Jails and Prisons**
With so many arrests and incarcerations due to marijuana arrests, our jails and prisons are filled. Feeding and providing for this prisoners costs taxpayers a lot of money. Additionally, more money is always needed to build new and larger jails and prisons to house these prisoners.

![Percentage of All Drug Arrests That Were for Marijuana Possession (1995-2010)](image)

**Additional Revenue**
Whether it's for cities, states or countries, revenue is always important. Marijuana is the largest crop in the nation and legalizing marijuana can bring more jobs into an area or a country. More jobs equal more revenue, which is needed to help our sagging economy. Just think of the taxes that can be charged on the sale of marijuana. This type of large revenue can be extremely helpful in paying for many government programs. Legalizing marijuana will keep revenue in your own country where it can help your residents.

![Revenue from Marijuana Sales](image)

**Product With Many Uses**
One form of marijuana known as hemp can be used for various practical purposes such as fabric, rope or even bedding for animals. The uses for hemp are almost unending.
Filled with Nutritional Value
The seeds from hemp are highly nutritious and are rich in omega 3, calcium and iron. Hemp is used in many foods, including salad dressings, nutrition bars and chips.

Personal Hygiene and Health Purposes
Hemp can also be used as a personal hygiene product and is used in some body lotions, shampoos, moisturizers and soaps. The oils that are in these products are not only good for our skin but can help prevent heart problems.

Easy to Grow & Environmentally Friendly
Unlike many other crops that require fertilizer and chemicals to grow, hemp requires very little fertilizer or chemicals. It’s also pest-resistant, which means there will be no harmful insecticides going into the soil, making it extremely good for the environment. In fact, in some areas hemp is used to clean up soil.