

Leading the high life

People are increasingly taking small amounts of psychedelic drugs to up their game. Could it really work, asks **Sam Wong**

FOR over a year, Janet Lai Chang took magic mushrooms a few times a week before going to work. She says it made her happier, reduced her social anxiety and helped her build relationships.

Chang is one of many who have added a pinch of psychedelic drugs to their daily routine in recent years. Followers say this "microdosing" regime doesn't send them tripping, but merely gives them a boost to improve their mood or performance.

The effects they report seem plausible, but as psychedelics are illegal in most countries, such claims have not been backed up by much research. There has been a recent revival in scientific trials of psychedelic drugs for treating depression and anxiety, but with microdosing people are doing their own experiments, away from the strict regulations of clinical research.

Yet as Chang's experiences show (see interview, right), the findings are tantalising. So can these new investigations into psychedelic pick-me-ups yield any decent insights? And could you one day be dropping acid alongside your morning vitamin?

Up and at 'em

You would be forgiven for thinking your work performance might suffer under the influence of mind-warping illegal drugs. But microdoses, about a tenth of a recreational dose, don't seem to induce hallucinations; instead, people who do this report in internet forums that they are happier, more creative and more productive. They may say things look more beautiful than usual, but that's as trippy as it gets.

"I am studying more effectively, retaining more of the lecture content, and not letting the pressure of 'everything is due at the same time' get to me as much as previous semesters," says one person online.

The extent of microdosing is unclear, but James Fadiman, who popularised the idea in his 2011 book *The Psychedelic Explorer's Guide*, speculates that it's more than 100,000 people worldwide,

"Microdoses, about a tenth of a recreational dose, don't induce hallucinations or trip-like effects"

based on the number he has been in contact with.

Psychedelics have been linked with creativity since the 60s, when LSD was widely used by artists and musicians. Fadiman and his colleagues gave LSD to engineers, mathematicians and architects as they worked on professional problems they had been struggling with. They all performed better on tests after being given the drug, compared with an earlier sober session, and reported finding the experience helpful to the creative process.

This line of research ended when LSD was made illegal in the

late 60s, but a recent revival has made progress in understanding how psychedelics act on the brain.

LSD and psilocybin, the active ingredient in magic mushrooms, achieve most of their effects by binding to serotonin receptors responsible for mood and cognition. Earlier this year, a study found that part of the receptor closes on LSD like a lid, trapping the drug in place for hours. This may explain why it can have effects at very low doses.

Neuroimaging studies show that LSD and psilocybin change how different parts of the brain talk to each other. In particular,



Useful in small doses?

the visual cortex communicates more with other areas.

It's difficult to get permission to study the effects of psychedelics on the day-to-day lives of healthy volunteers, but some researchers are trying to collect data anyway. From February to May this year, Fadiman and his colleague Sophia Korb invited people to follow a research protocol and report on their experiences. Participants have to source their own drugs – LSD, magic mushrooms or other psychedelics; the effects of microdosing seem to be similar across other hallucinogens.

The methodology falls well short of the normal standards of scientific rigour. There is a control group, but participants aren't randomly chosen to unknowingly receive a drug or placebo, as would be the case for a standard trial.

Korb says it would be unethical to give someone an illegal drug without them knowing, and for safety reasons participants with high-stakes jobs – like aircraft maintenance for the army – are encouraged to be in the control group. Collecting flawed data is better than no data at all, she says.

The people taking part have a wide range of ages and backgrounds. Many have depression or other mental health conditions, but some are merely hoping for self-improvement or well-being. "You don't have to be sick to get better," says Fadiman.

The protocol instructs participants to take a microdose every three days, while reporting their scores on a range of 30

whereas those with anxiety find it is less helpful or makes symptoms worse. Overall, the microdosers report feeling more determined, active, alert, proud and enthusiastic, but also more nervous and jittery. They report feeling less depressed, upset, guilty and afraid.

Positive effects on depression aren't entirely surprising. A small study published last year found promising results for psilocybin, taken during psychotherapy sessions. Robin Carhart-Harris at Imperial College London, who led the study, thinks low doses could offer some of the same beneficial effects. "A full dose of psychedelics can be mind-shattering, almost. These little doses are subtly mind-loosening," he says.

Next steps

Korb's results show few signs of harmful effects of microdosing. Five men with colour blindness dropped out because they were experiencing visual effects. No participants reported serious adverse effects, but Korb wouldn't recommend microdosing for people with anxiety.

Many subjects report the same unexpected benefits, such as better sleep, improved athletic performance and relief from symptoms of menstrual disorders and migraines. Fadiman says this suggests they aren't just placebo effects, but until controlled trials are carried out, we can't be sure.

So could psychedelics be available on prescription one day? Korb says several research groups are interested in using their data to plan formal studies. She is also talking to the US Food and Drug Administration about research on cluster headache syndrome – a severe condition with few effective treatments, but some patients say psychedelics help.

Convincing evidence of microdosing improving work performance remains elusive. However, later this year Amanda Feilding, director of the Beckley

INSIDE THE MIND OF A MICRODOSER



COURTESY OF JANET CHANG

Janet Lai Chang, a digital marketer based in San Francisco, will present her experience of microdosing at the Quantified

Self conference in Amsterdam from 17 to 18 June.

WHEN DID YOU START MICRODOSING?

I started in February 2016. I wanted to understand how my brain works and how it might work differently with the influence of psilocybin [the active ingredient in magic mushrooms].

WHAT ELSE DID YOU HOPE TO ACHIEVE?

I had been struggling with a lot of social anxiety. It was really preventing me from advancing professionally. I was invited to give a talk at Harvard University and a TedX talk in California. I didn't feel ready. I felt all this anxiety. I procrastinated until the last minute and then didn't do it. It was one of my biggest regrets.

WHAT DOSES DID YOU TAKE?

At first I was taking 0.2 grams of mushrooms every day, with a day or two off at the weekend. In August, I had a month off. From October to April, it was a few times a week.

Foundation, a UK think tank that encourages psychedelics research, plans to carry out the first formal scientific study of microdosing with LSD to see if it improves mental health, cognition and creativity.

Volunteers will undergo a series of psychometric tests and play the complex board game Go. Feilding was a keen Go player and LSD user in the 60s. "I found that if I was on LSD, I won more games," she says. "I could see patterns on the board better."

Carhart-Harris thinks it is possible that psychedelics might boost some aspects of cognition, but he is concerned that regular use at home, even of low doses,

HOW DID IT AFFECT YOU?

I was less anxious, less depressed, more open, more extroverted. I was more present in the moment. It's harder to get into the flow of the focused solo work that I'm normally really good at. But it's good for the social aspect.

WERE THERE OTHER NEGATIVE EFFECTS?

I have some symptoms of PTSD left over from childhood abuse. Pretty much the only other negative thing was being more aware of negative emotions I had. I have a repressed anger response, according to my therapist. When I was microdosing I felt like I could really feel it; I felt the anger.

ARE YOU STILL MICRODOSING NOW?

Occasionally, but I've stopped the experiment. I don't want to be dependent on a substance to enable me to achieve certain desirable states of productivity.

WOULD YOU RECOMMEND IT TO OTHERS?

I think everyone would benefit from having at least one kind of experience with psychedelics. The dosage really depends on the individual and what they're looking to get out of it.

may be risky compared with taking bigger doses in a therapy session. "No longer do you have a controlled environment," he says, and regular doses could lead to as-yet unknown side effects.

We may know more soon. Korb is advising a citizen science group in Boston on a randomised, placebo-controlled study, with results due in a few months.

People are doing this anyway, so collecting data will allow them to do it safely, says Korb. "The bigger ethical question is 'Why can't we study these sort of things that seem to be so helpful to people?'" Without such studies, microdosing will remain a risky practice, both medically and legally. ■

"Microdosers report feeling more determined, active, and enthusiastic, but also more nervous and jittery"

variables each day for a month. Fadiman and Korb presented their preliminary analysis of 418 microdosers at the Psychedelic Science conference in San Francisco earlier this year.

People with depression appear to benefit from microdosing,