

Mushrooms' magic compound latest hope to relieve depression

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A psychedelic compound found in mushrooms could “rewire” the brain to treat depression more effectively than conventional drugs, a study has suggested.

Its results show how psilocybin, a hallucinogen largely shunned by mainstream researchers since the 1960s, creates new connections between brain regions. This appears to allow patients to snap out of a pattern of brain activity associated with negative thoughts.

Increases in connectivity, revealed by MRI scans, were seen in people who underwent therapy sessions that included doses of synthetic psilocybin that caused intense but carefully monitored “trips”.

While each trip lasted for a matter of hours, changes in brain configuration endured for weeks and psilocybin was found to be significantly more effective in reducing depressive symptoms than escitalopram, a widely used antidepressant.

David Nutt, professor of neuropsychopharmacology and head of psychedelic research at Imperial College London, said: “For the first time we find that psilocybin works differently from conventional antidepressants, making the brain more flexible and fluid and less entrenched in the negative thinking patterns associated with depression.”

The findings are part of a broader renewal of interest in whether “street drugs” can be useful in treating mental illnesses.

In a separate study, King's College London is planning to begin looking at whether MDMA, commonly known as Ecstasy, can treat post-traumatic stress disorder. An initial trial will enrol five subjects to gauge safety and to look for early signs of effectiveness. Studies involving military veterans in the United States have been promising.

The psilocybin paper involved two trials that recruited nearly sixty people. Those helped by psilocybin showed signs of greater connectivity between regions of the cerebral cortex. In particular, they appeared less trapped in a pattern of brain activity known as the default mode network, which is associated with introspection and periods of rumination.

Psilocybin engaged two alternative patterns of brain behaviour, known as the executive network and salience network, which have been associated with tasks requiring cognitive flexibility such as learning. Impaired functioning of these networks has been reported in depression. Similar changes were not seen in those treated with escitalopram, suggesting that the psychedelic drug works differently.

“We now have two ways of treating depression which is very exciting,” Nutt said.

Imperial College London/PA:Press Association Professor David Nutt, head of the Centre for Psychedelic Research at Imperial College London, said psilocybin could be a “real alternative” to treating depression.

The authors of the study, published in the journal *Nature Medicine*, urged people struggling with depression not to dose themselves with magic mushrooms. The study had taken place “under controlled, clinical conditions . . . Patients with depression should not self-medicate with psilocybin, as taking magic mushrooms or psilocybin in the absence of these careful safeguards may not have a positive outcome.”

Robin Carhart-Harris, a professor of neurology and psychiatry based at the University of California, San Francisco, said: “We may have discovered a fundamental mechanism via which psychedelic therapy works not just for depression but other mental illnesses, such as anorexia or addiction. We now need to test if this is the case and, if it is, then we have found something important.”

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