An illegal drug may one day be used to treat psychiatric conditions, including depression.

A worldwide study has found Lysergic acid diethylamide (LSD) can break down barriers in the brain, which may mean it can be used as a medical treatment, particularly for psychiatric disorders.

Extensive clinical trials needed to be held to prove the theory, and one such trial was currently under way at Imperial College in London.

University of Auckland researcher Suresh Muthukumaraswamy, one of the study’s authors, dismissed wariness about the use of the illicit drug to treat sick people.
"People who suffer from chronic pain or pain due to cancer - we don’t hesitate to give them opiates which are terribly addictive drugs and can be used and abused recreationally," Dr Muthukumaraswamy said.

"So when I think about it in that context, I don’t think a medical use of this substance is that outrageous at all."

He said LSD was studied extensively in the 1950s and 60s, but there had been almost zero research since it was made illegal.

Dr Muthukumaraswamy said this was the first study of LSD to use modern brain imaging technology such as fMRI (functional magnetic resonance imaging) to observe the effects of the chemical on the brain.

Research scientists in the United Kingdom, New Zealand, Germany, Brazil and Canada collaborated for the study and results were published in the latest Proceeding of the National Academy of Sciences.

"So we’ve conducted a study and worked out to some degree what it does in the brain and what causes its changes."

Most drugs suppressed the nervous system, but LSD did not, he said.

The study showed marked differences in brain blood flow, electrical activity, and network communication patterns when LSD was used.

Previous studies showed psilocybin, known as magic mushrooms, were effective in helping people stop smoking and could relieve anxiety in terminally ill patients, Dr Muthukumaraswamy said.

However, those studies had tended to be smaller scale and were done at a single site, and there was a need for larger studies, he said.

The new LSD study also examined the mechanism behind the effect.

Dr Muthukumaraswamy received a Rutherford Discovery Fellowship in 2014 and has studied the neuropharmacological effects of different compounds, including ketamine and psilocybin, for treating depression.

The clinical trials in London should be completed towards the end of the year, Dr
Muthukumaraswamy said.

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