In groundbreaking research, scientists have used brain scanning techniques to visualize what happens to the brain when tripping on LSD. The findings are intriguing and suggest the compound could be useful in treating certain psychiatric disorders.

The research is detailed in a paper appearing in the Proceedings of the National Academy of Sciences.

Since the 1960s, when Harvard professor and consciousness-altering guru Timothy Leary touted the benefits of *lysergic acid diethylamide* and famously advised his followers to "turn on, tune in, and drop out," regulatory obstacles have largely prevented researchers from continuing to study the drug's effect on the human brain. A new interest in the compound, however, is beginning to change that.
Trippy: LSD could help treat mental illness, new study says

“People are starting to realize that it’s not impossible to do this sort of research,” said lead author Robin Earhart-Harris in a report by Gizmodo, “it’s just very difficult.”

Scientists from Imperial College London and the Beckley Foundation in the UK gave LSD to 20 healthy volunteers and then used a number of cutting-edge brain-scanning techniques to peer at their brains under the influence of the drug.

The researchers found that many more regions of the brain besides the visual cortex are activated under LSD and contribute to the hallucinations commonly experienced by users.

“Normally our brain consists of independent networks that perform separate specialized functions, such as vision, movement, and hearing — as well as more complex things like attention,” said Dr. Carhart-Harris, in a statement. “However, under LSD, the separateness of these networks breaks down and instead you see a more integrated or unified brain.”

This breakdown of neural networks causes the sense of ‘ego dissolution’ or ‘one-ness with the universe’ that many experience during an LSD trip.

“This experience is sometimes framed in a religious or spiritual way — and seems to be associated with improvements in well-being after the drug’s effects have subsided,” Earhart-Harris explained, adding, “In many ways, the brain in the LSD state resembles the state our brains were in when we were infants; free and unconstrained. This also makes sense when we consider the hyper-emotional and imaginative nature of an infant’s mind.”

In another study published in the journal European Neuropsychopharmacology, the researchers describe visualized cortex activity when subjects listened to music after being administered LSD. They found heightened activity from the parahippocampus — an area of the brain involved in memory and mental imagery, which caused the subjects to vividly recall scenes from their lives.

“This is the first time we have witnessed the interaction of a psychedelic compound and music with the brain’s biology,” said Ph.D. student and lead author Mendel Kaelen from Imperial’s Department of Medicine, in the statement.

The researchers believe the way LSD alters brain function could have important implications for treating mental illness, such as depression or addiction.

“We are finally unveiling the brain mechanisms underlying the potential of LSD, not only to heal, but also to deepen our understanding of consciousness itself,” added Amanda Fielding, Director of the Beckley Foundation.

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