

# Cannabis use mimics cognitive weakness that can lead to schizophrenia

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Researchers at the University of Bergen in Norway have found new support for their theory that cannabis use causes a temporary cognitive breakdown in non-psychotic individuals, leading to long-term psychosis. In an fMRI study published this week in *Frontiers in Psychiatry*, researchers found a different brain activity pattern in schizophrenia patients with previous cannabis use than in schizophrenic patients without prior cannabis use.

The results reinforce the researchers' model where cannabis users suffering from schizophrenia actually may have higher [cognitive abilities](#) than non-cannabis using schizophrenics. This difference may indicate that the cannabis-user group did not have the same mental propensity for psychosis.

"While brain activity for both groups was similar, there are subtle differences between schizophrenia sufferers with a history of cannabis use and those who have never used cannabis. These differences lead us to believe that the cognitive weakness leading to schizophrenia is imitated by the effects of cannabis in otherwise non-psychotic people," explains Else-Marie Loeberg, lead author on the article and associate professor of Psychology at the University of Bergen, Norway.

The 26 patients involved in the study attempted difficult [cognitive tasks](#) while in the fMRI machine. They were asked to listen to different syllables in each ear and try to say which syllable was spoken when instructed to concentrate on either the left or right ear—a difficult task

for anyone but particularly difficult for [schizophrenia patients](#) who often have impaired attention, limited executive functioning and difficulty in processing verbal cues.

The study shows that schizophrenia sufferers with previous cannabis use had consistently higher levels of [brain activity](#) while undergoing these tests as well as a higher number of correct answers. These results are in line with previous conclusions from the Bergen researchers who support the idea that [cannabis users](#) with schizophrenic characteristics do not appear to suffer from the same neuro-cognitive weaknesses as other patients with schizophrenia.

This implies that it is the cannabis use itself that leads otherwise non-psychotic individuals down the nightmarish path towards schizophrenia by imitating the cognitive weakness that is the main risk factor for developing the psychological condition.

**More information:** An fMRI study of neuronal activation in schizophrenia patients with and without previous cannabis use. Authors: Loeberg Else-Marie, Nygard Merethe, Helle Siri, Berle Jan jystein, Johnsen Erik, Kroken Rune, Jørgensen Hugo, Hugdahl Kenneth. *Frontiers in Psychiatry*, [www.frontiersin.org/Journal/Abstract/full/10.3389/fpsy.2012.00094](http://www.frontiersin.org/Journal/Abstract/full/10.3389/fpsy.2012.00094)

Provided by Frontiers

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