

# Cannabis abuse possible cause of psychosis

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The risk of developing psychosis is more than tripled for those who abuse cannabis, according to results from a new twin study.

Researchers from the Norwegian Institute of Public Health (NIPH), together with colleagues from Virginia Commonwealth University,

examined the relationship between cannabis and psychosis using psychiatric interviews of Norwegian twins. The interviews reveal whether the twins had [symptoms](#) of psychosis and cannabis abuse.

"Previous research has shown that patients with psychotic disorders use cannabis more often than the general population. However research has been divided over whether cannabis use was the cause of the [psychotic disorders](#)," says Ragnar Nesvåg, senior researcher at NIPH and the main author of the study.

Genetic factors influence both cannabis abuse and psychosis and the same genes may lead to an increased risk for both problems.

"The relative importance of genes in the causes of a disease is known as heritability, and we know from previous studies at the NIPH that cannabis abuse is very heritable, explains Eivind Ystrom, senior researcher at NIPH.

"In order to determine whether cannabis abuse can lead to psychosis, it is important to account for [genetic risk](#)," he adds.

The researchers therefore tested both the hypotheses that cannabis use causes psychotic symptoms and that [psychotic symptoms](#) lead to cannabis abuse.

## **Abuse increased the risk by 3.5**

The hypothesis best suited to the data was that cannabis abuse caused symptoms of psychosis. Within a twin pair, the twin with symptoms of cannabis abuse had a 3.5 times higher risk of developing symptoms of psychosis compared with the twin who did not have symptoms of cannabis abuse.

"Our analyses showed a significant association between cannabis abuse and symptoms of psychosis in the [general population](#). We also tested the hypothesis that symptoms of psychosis caused cannabis abuse, but the hypothesis was less suited to the data. Therefore, it appears that cannabis abuse can be a cause of psychosis," says Ystrom.

## Confirmed high heritability

Previous studies have shown that cannabis abuse is very heritable, which was also confirmed in this study. As much as 88 per cent of the causes of why some people abused cannabis, yet others did not, could be attributed to some people having risk genes.

Despite this, the researchers found that a common genetic risk could not explain the entire association with symptoms of psychosis. Even after genetic risk and risk of childhood environment were taken into account, people with cannabis abuse still had a multiplied risk of developing symptoms of psychosis.

Nesvåg says that [psychosis](#) is associated with huge costs to society. These findings should be considered when evaluating the cost of policies for increased cannabis availability, such as decriminalisation or legalisation.

## About twin studies

Investigating whether a particular risk factor causes disease requires studies where you look at two people who are otherwise identical, where one is exposed to a risk factor and the other is not. The effects on their health can be investigated. For obvious reasons, these experiments are neither practical, ethical or legally feasible.

Studying twins is a viable option because they have genetic similarity,

they have grown up in the same family, and they have the same socioeconomic background.

**More information:** Ragnar Nesvåg et al. Genetic and Environmental Contributions to the Association Between Cannabis Use and Psychotic-Like Experiences in Young Adult Twins, *Schizophrenia Bulletin* (2016). DOI: [10.1093/schbul/sbw101](https://doi.org/10.1093/schbul/sbw101)

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