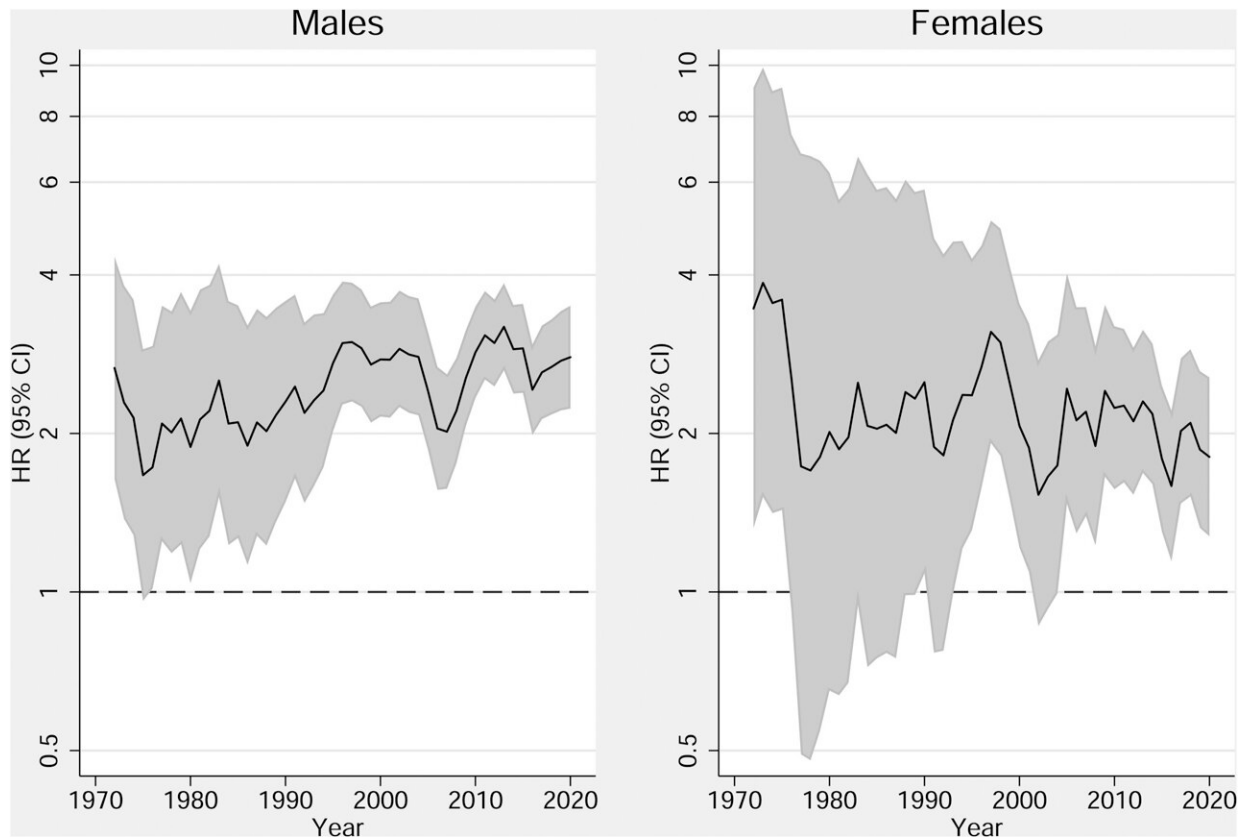


# Young men at highest risk of schizophrenia linked with cannabis use disorder

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Rolling average of adjusted hazard ratios between cannabis use disorder and schizophrenia, by sex and calendar year. Credit: *Psychological Medicine* (2023). DOI: 10.1017/S0033291723000880

Young men with cannabis (marijuana) use disorder have an increased

risk of developing schizophrenia, according to a study led by researchers at the Mental Health Services in the Capital Region of Denmark and the National Institute on Drug Abuse (NIDA) at the National Institutes of Health.

The study, published in *Psychological Medicine*, analyzed detailed health records data spanning 5 decades and representing more than 6 million people in Denmark to estimate the fraction of [schizophrenia](#) cases that could be attributed to [cannabis](#) use disorder on the population level.

Researchers found strong evidence of an association between cannabis use disorder and schizophrenia among men and women, though the association was much stronger among young men. Using statistical models, the study authors estimated that as many as 30% of cases of schizophrenia among men aged 21-30 might have been prevented by averting cannabis use disorder.

Cannabis use disorder and schizophrenia are serious, but treatable, [mental disorders](#) that can profoundly impact people's lives. People with cannabis use disorder are unable to stop using cannabis despite it causing negative consequences in their lives. Schizophrenia is a [serious mental illness](#) that affects how a person thinks, feels, and behaves.

People with schizophrenia may seem like they have lost touch with reality, and the symptoms of schizophrenia can make it difficult to participate in usual, everyday activities. However, effective treatments are available for both cannabis use disorder and schizophrenia.

"The entanglement of substance use disorders and mental illnesses is a major public health issue, requiring [urgent action](#) and support for people who need it," said NIDA Director and study co-author Nora Volkow, M.D.

"As access to potent cannabis products continues to expand, it is crucial that we also expand prevention, screening, and treatment for people who may experience mental illnesses associated with cannabis use. The findings from this study are one step in that direction and can help inform decisions that [health care providers](#) may make in caring for patients, as well as decisions that individuals may make about their own cannabis use."

Previous studies indicate that rates of daily or near daily cannabis use, cannabis use disorder, and new schizophrenia diagnoses are higher among men than women, and that early, frequent cannabis use is associated with an increased risk of developing schizophrenia. However, few studies have examined differences in the relationship between cannabis use disorder and schizophrenia across different sex and age groups at the population level.

To address this research gap, investigators analyzed data from nationwide health registers in Denmark, which included health records data from more than 6.9 million people who were aged 16-49 at some point between 1972 and 2021. Using these nationally representative longitudinal data, the researchers investigated how the associations between cannabis use disorder and schizophrenia varied by different sex and age groups, and how these differences changed over time.

Although there are many [risk factors](#) associated with schizophrenia, in this study, researchers sought to estimate the proportion of all schizophrenia cases that may be attributed to cannabis use disorder specifically, across sex and age groups at the population level. The study team estimated that 15% of cases of schizophrenia among men aged 16-49 may have been avoided in 2021 by preventing cannabis use disorder, in contrast to 4% among women aged 16-49.

For young men aged 21-30, they estimated that the proportion of

preventable cases of schizophrenia related to cannabis use disorder may be as high as 30%. The authors emphasize that cannabis use disorder appears to be a major modifiable risk factor for schizophrenia at the population level, particularly among young men.

This study also adds to [existing evidence](#) suggesting that the proportion of new schizophrenia cases that may be attributed to cannabis use disorder has consistently increased over the past five decades. The authors note that this increase is likely linked to the higher potency of cannabis and increasing prevalence of diagnosed cannabis use disorder over time.

"Increases in the legalization of cannabis over the past few decades have made it one of the most frequently used psychoactive substances in the world, while also decreasing the public's perception of its harm. This study adds to our growing understanding that cannabis use is not harmless, and that risks are not fixed at one point in time," said Carsten Hjorthøj, Ph.D., lead author of the study and associate professor at the Mental Health Services in the Capital Region of Denmark and at the University of Copenhagen.

The authors note that further research is needed to examine potential differences in the potency and frequency of cannabis consumption between young men and women, and to examine the mechanisms underlying the higher vulnerability of young men to the effects of cannabis on schizophrenia. The association of cannabis potency with cannabis use disorder and psychosis may help inform public health guidelines; policies on cannabis sales and access; and efforts to effectively prevent, screen for, and treat [cannabis use disorder](#) and schizophrenia.

**More information:** Carsten Hjorthøj et al, Sex differences in associations between cannabis use disorder and schizophrenia overall

and by age, *Psychological Medicine* (2023). DOI: [10.1017/S0033291723000880](https://doi.org/10.1017/S0033291723000880)

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