

Cannabis use increases the risk of young people developing psychotic symptoms, particularly if already predisposed

Henquet C, Krabbendam L, Spauwen J, *et al.* Prospective cohort study of cannabis use, predisposition for psychosis, and psychotic symptoms in young people. *BMJ* 2004;**330**:11–14.

Q Does cannabis use increase the risk of developing psychotic symptoms in young people with or without a predisposition for psychosis?

METHODS

	Design: Prospective cohort study.
	Follow up period: Four years.
	Setting: The city and counties of Munich, Germany
	People: 2437 young people aged 14–24 years with or without a predisposition for psychosis and born between 1 June 1970 and 31 May 1981.
	Risk factors: Participants were assessed for cannabis use and for psychosis and predisposition to psychosis by the Munich version of the composite international diagnostic interview (M-CIDI), at baseline and four years follow up. Logistic regression was used to calculate odds ratios and 95% confidence intervals. The interaction between a predisposition for psychosis at baseline and cannabis use was calculated using an additive model.
	Outcomes: Psychosis; predisposition for psychosis; frequency of cannabis use.

MAIN RESULTS

After adjustment for age, sex, socioeconomic status, urban residence, childhood trauma, predisposition for psychosis at baseline, and use of other drugs, tobacco, and alcohol, cannabis use increased the risk for young people developing psychotic symptoms four years later (OR: 1.67, 95% CI 1.13 to 2.46). This effect was greater in young people with a predisposition for psychosis at baseline compared to those without ($p = 0.032$).

CONCLUSIONS

Cannabis use increases the risk for young people developing psychotic symptoms later in life, with a much greater effect in those already predisposed to psychosis.

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NOTES

A dose-response relation was observed between the frequency of cannabis use at baseline and the development of psychotic symptoms, which suggests causality. The authors also note previous studies which suggest that an interaction between cannabis use and a predisposition to psychosis is biologically plausible.

Commentary

Henquet *et al* suggest that not only does cannabis moderately increase the risk for psychosis but that it has a greater effect in those who may have a predisposition to psychosis. This recent paper makes a vital contribution to the current debate of the association between cannabis use and psychosis which is an attempt to untangle cause and effect. Do individuals start using cannabis because of some predisposition to psychosis or is cannabis implicated in the expression of psychosis?

There is research implying that cannabis use is associated with an increased risk for schizophrenia,¹ supported by more recent evidence suggesting that heavy use in adolescence increases later risk of schizophrenia.² Furthermore, this could potentially be mediated by the effects of dopamine.³ Now in the first prospective study, Henquet *et al* used data from a population based sample to investigate whether cannabis use at baseline increases the risk of later psychosis. These data suggest that the self-medication hypothesis is not the primary explanation for the association (although it does not entirely refute the self-medication hypothesis). The results further imply that not only does cannabis increase the risk of later psychotic symptoms but those who may be presenting with a vulnerability to psychosis are more at risk, and that there is an interaction between the early use of cannabis and a predisposition to psychosis.

Clinical implications are that cannabis can be harmful particularly for those who have a predisposition to psychosis, adding support to another area of mixed opinions—the debate as to whether cannabis should or should not be considered a harmful drug. In our practice, use of cannabis should be assessed and discouraged. Although our research evidence may not fully support the implication of cannabis in the onset of psychosis there is very little to disprove it.

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- 1 van Os J, Bak M, Hanssen M, *et al.* Cannabis use and psychosis: a longitudinal population based study. *Am J Epidemiology* 2002;**156**:319–27.
- 2 Asernault L, Cannon M, Witton J, *et al.* Causal association between cannabis and psychosis: examination of the evidence. *Br J Psychiatry* 2004;**184**:110–17.
- 3 Caspi A, Moffitt TE, Cannon M, *et al.* Moderation of the effect of adolescent-onset cannabis use on adult psychosis by a functional polymorphism in the catechol-O-methyltransferase gene: longitudinal evidence of a gene X environment interaction. *Biol Psychiatry* 2005;**57**:1117–27.