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**[Gene alteration affects cannabis-induced psychosis in adolescent mice](#)**

DOI: 10.1038/npp.2010.100

While there is a well-recognized association between cannabis use and psychotic illness, the mechanism that confers individual risk is not yet fully understood. Adolescent male mice are particularly susceptible to the psychosis-like effects of cannabis, reports a study published online this week in *Neuropsychopharmacology*, indicating that age at exposure and genotype are important factors. The underlying mechanism appears to involve variation in the gene for catechol-O-methyltransferase (COMT), which breaks down dopamine in the brain.

Colm O'Tuathaigh and colleagues subjected mice lacking the COMT gene to chronic THC exposure – a component of cannabis already thought to be involved in psychosis – during

either adolescence or adulthood. Their adult behavioral phenotypes were then measured and assessed for psychosis-like symptoms. Adolescent THC exposure in mice lacking the COMT gene modified exploratory activity and spatial working memory, together with anxiety-related behaviors, particularly in male mice. Each of these behaviors is associated with brain areas known to play a role in psychosis.

These findings indicate a genetic factor that, together with developmental factors, contributes to the vulnerability of adolescent cannabis users to psychosis. The authors caution, however, that further studies are needed to clarify the overall risk for psychosis in human consumers of cannabis.

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