

Adolescent alcohol use linked with genetic variation in DRD2 gene and drinking to cope

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Drinking is a popular pastime for most adolescents, but when copious amounts of alcohol are consumed (known as bingeing) on a regular basis, it could be indicative of a deeper problem. Therefore, researchers in the Netherlands set out to answer two questions: Why do some adolescents engage in bingeing so frequently, and is there a possible genetic component?

The answers will be published in the April 2011 issue of *Alcoholism: Clinical & Experimental Research* and are currently available at Early View.

Carmen S. van der Zwaluw, senior author of the study and PhD candidate at Radboud University in the Netherlands, said that this study is the first to examine the possible association between different genes, coping drinking, and risky alcohol use in [adolescents](#).

"Other studies have shown that alcohol use, and especially risky alcohol use, is partly heritable," said van der Zwaluw. "These studies did not show, however, which specific genes are involved in the genetic predisposition for risky alcohol use. Thus, one of the things that alcohol researchers are now trying to clarify is which genes make up the genetic vulnerability for alcohol (mis)use."

The researchers examined 282 Dutch adolescents that had consumed [alcohol](#) at least once during their lives, collected DNA samples and administered questionnaires to determine their reasons for drinking and

the intensity of alcohol-related problems that they had experienced.

For the DNA analysis, variations in two different genes were examined: the dopamine D2 receptor gene (DRD2) that is involved in the reward pathway, and the serotonin transporter gene (SLC6A4), which plays a role in emotional states. The results showed that the risk allele of the DRD2 variation, and not in the SLC6A4 gene, implicates a genetic vulnerability for both binge drinking and alcohol-related problems that may only appear if they drink to suppress or eliminate negative emotions.

"I am thrilled about the gene-environment interaction that was found in this study indicating that the relation between coping motives and [alcohol](#) consumption was stronger among the DRD2 risk allele carriers," said Helle Larsen, a PhD candidate at the Behavioural Science Institute, Radboud University. "This relation should definitely be investigated more thoroughly in future research."

Van der Zwaluw agrees that since the research is the first of its kind, it must be replicated to show that it was correct and not just an anomaly.

"[The next step] would be examining whether other genetic variants increase the risk for drinking problems, and if this risk can be decreased by learning other coping styles to handle the problems."

Provided by Alcoholism: Clinical & Experimental Research

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