A variable-number-of-tandem-repeats polymorphism in the dopamine D4 receptor gene affects social adaptation of alcohol use: Investigation of a gene-environment interaction

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Abstract

Research suggests that people adapt their own drinking behavior to that of other people. According to a genetic-differences approach, some individuals may be more inclined than others to adapt their alcohol consumption level to that of other people. Using a 3 (drinking condition) x 2 (genotype) experimental design (N = 113), we tested whether susceptibility to alcoholrelated cues (i.e., seeing someone drink) was related to the variable number of tandem repeats in exon 3 of the D4 dopamine receptor gene. A strong gene-environment interaction showed that participants carrying at least one copy of the 7-repeat allele consumed substantially more alcohol in the presence of a heavy-drinking individual than did participants without this allele. This study highlights that individual variability in sensitivity to other people's drinking behavior may be attributable to genetic differences. Carrying the 7-repeat allele may increase the risk for heavy alcohol use or abuse in the company of heavydrinking peers.
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