

Greater religiosity during adolescence may protect against developing problem alcohol use

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Phenotypes are measurable and/or observable traits or behaviors. The heritability of an alcohol-related phenotype depends upon the social environment within which it is measured, such as urbanicity, marital status, or religiosity. A new study of the effects of religiosity on the genetic variance of problem alcohol use in males and females has found that religiosity can moderate genetic effects on problem alcohol use during adolescence but not during early adulthood.

Results will be published in the September 2010 issue of *Alcoholism: Clinical & Experimental Research* and are currently available at Early View.

"Levels of alcohol-related phenotypes, such as frequencies of drinking and intoxication, can be dependent on social background," explained Tanya M.M. Button, a postdoctoral fellow at the University of Colorado at Boulder and corresponding author for the study.

"For instance, people with a religious background may be less likely to express alcohol-related phenotypes than those from nonreligious backgrounds," she said. "Furthermore, the influence of genes on these phenotypes also varies according to social background. We also know that genes play a more important role in alcohol-related phenotypes in people from urban backgrounds, unmarried women, and nonreligious individuals than those from rural backgrounds, married women, or those

with a religious upbringing."

Button and her colleagues examined 1,432 twin pairs: categorized as identical or monozygotic (MZ) if they had similar physical characteristics and were concordant on all markers; and fraternal or dizygotic (DZ) if they presented with dissimilar physical characteristics and were discordant on any of the markers. For the two time periods examined, adolescence and early adulthood, participants were: 312 male MZ pairs, 379 female MZ pairs, 231 male DZ pairs, 235 female DZ pairs, and 275 opposite-sex DZ pairs. Religiosity was measured using the Value on Religion Scale, and problem alcohol use was measured using the Composite International Diagnostic Interview-Substance Abuse Module.

"Our study showed that genetic factors could influence problem alcohol use more in nonreligious [adolescents](#) than adolescents with a greater religious outlook," said Button. "This attenuation in religious participants indicates that religiosity exerted a strong enough influence over the behavior of religious individuals to override any genetic predisposition. The same was not true for young adults, however, for whom the genetic influence was consistent across levels of religiosity."

Button noted that she and her colleagues had expected to find a similar pattern of effects in adolescents and young adults.

"These findings provide evidence that problem [alcohol](#) use in adolescents is subject to controlling influences associated with [religiosity](#), even when genetic risks are present," said Button. "Thus, adolescents who are raised to value religious concepts are less likely to develop problems with [alcohol](#) use, even in the presence of a genetic predisposition for doing so."

Provided by Alcoholism: Clinical & Experimental Research

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