

Genes and environment contribute to personal and peer drinking during adolescence and beyond

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Alcohol use typically begins during adolescence, within social contexts, and is often correlated with the drinking of one's peers. A new study of how a person's drinking is related to the alcohol use of their peers from early adolescence through to early adulthood has found that both genetic and environmental factors contribute to the correlation between one's own drinking and peer drinking.

Results will be published in the February 2015 online-only issue of *Alcoholism: Clinical & Experimental Research* and are currently available at Early View.

"Peers can influence adolescent [drinking](#) in different ways," said Alexis C. Edwards, assistant professor in the department of psychiatry at Virginia Commonwealth University as well as corresponding author for the study. "Peer pressure can work in both directions: some kids feel pressured, others are the ones exerting the pressure for whatever reason. Peer pressure doesn't have to be explicit; kids can perceive pressure that's never verbalized. Another way that peers can influence drinking is simply by providing access to [alcohol](#). Furthermore, adolescent drinking behavior often occurs in the context of peer groups rather than in solitary situations. Therefore, it's important not to overlook the role that choice plays in all these scenarios: to varying extents, kids select which peers they hang out with, which in turn has consequences for alcohol use."

"Peer behavior is perhaps the most enduring social correlate of both contemporaneous and subsequent alcohol use, so studies specifically designed to explore the etiology underlying these associations, and particularly those that examine mechanistic processes, are tremendously important to the field," added Shawn J. Latendresse, assistant professor in the department of psychology & neuroscience at Baylor University.

"We have access to a rich twin dataset that uniquely allows us to tease apart the complicated relationships of peer selection and [peer influence](#), all in the context of genetic and environmental influences underlying behavior," said Edwards. "We examined men simply because we only had the necessary data for men. It would be very interesting to see if the same patterns hold among women, because there are some differences in drinking behaviors across the sexes."

Edwards and her colleagues used data collected in Wave Three of the Virginia Adult Twin Study of Psychiatric and Substance Use Disorders. From that larger study of adult Caucasian twins, study authors analyzed data from a sample of 1,790 men, provided through structured clinical interviews that included retrospective reports of their own drinking as well as their peers' alcohol-related behaviors from adolescence into young adulthood, ages 12 to 25 years. The influence of three plausible models of genetic and environmental influences on the relationship between phenotypes was examined over time.

"There seem to be two take-home messages," said Edwards. "First, genetic and environmental factors contribute to the [correlation](#) between one's own drinking and their peers' drinking. Second, apart from these shared genetic and environmental liabilities, there are causal processes at play: your own drinking phenotype causes you to select peers based on their drinking, and your peers' drinking influences your own drinking."

"Most notable, from the perspective of developmental science, is the fact

that this study provides initial evidence of bidirectional influences among the drinking behaviors of individuals and their peers," added Latendresse. "Yet, despite increasing additive genetic influences across adolescence, the majority of the variance in alcohol consumption continues to be attributable to environmental factors. This is particularly encouraging, as there remains great potential within the research community to identify modifiable aspects of the environment that can then serve as the focus of applied prevention/intervention efforts."

Both Edwards and Latendresse commented on the finding of a clear increase in the influence of genetic factors as the adolescents moved into adulthood, and a corresponding decrease in the influence of shared [environmental factors](#).

"The increase in the relevance of genetic factors is pretty typical," said Edwards. "As we age and gain more autonomy, our behavior is driven more by our own genetic liabilities and we are less influenced by the familial environment."

"In general, as twins mature and become more independent of one another - for example, attend different schools, live in separate homes - they tend to share fewer of the influences within their physical and social environments, while their genetic similarities remain constant," added Latendresse. "Of course, unique aspects of the twins' environments are just as influential as their shared biology, and often more so, when it comes to their own alcohol consumption and the perceived consumption of their [peers](#)."

"I hope that our study helps clarify the relationship observed between self and peer drinking behaviors across adolescence into adulthood," said Edwards. "But there's no way around the fact that this relationship is complicated. Our contribution is to provide evidence that shared genetic/environmental liabilities and causal processes are at play

simultaneously: the association isn't an either/or situation."

Latendresse agreed. "It is also important to note that the increasing role of genes across development that is evidenced in this, and many other studies, might not be as straight forward as it appears. For example, because one's genes generally aren't subject to change, any change in the influence or expression of one's genes is likely 'triggered' by other biological and/or environmental processes. However, within the types of statistical models employed in this study, all of these conditional effects would necessarily be partitioned in with the additive genetic variance. In this way, environmental influence has the potential to be misallocated."

More information: "Multiple Mechanisms Influencing the Relationship between Alcohol Consumption and Peer Alcohol Use," *Alcoholism: Clinical & Experimental Research*, 2015.

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