

Response to alcohol, peers, expectancies, and coping all contribute to adolescent drinking

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A low level of response (LR) to alcohol is one of several genetically influenced characteristics that may increase an individual's risk for heavy drinking and alcohol problems. A new study has confirmed key elements of a LR-based model of risk through examination of a large sample of adolescent boys and girls in the United Kingdom, moving beyond smaller U.S.-based samples and to younger subjects.

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

"The effect of a low LR on later heavier drinking actually occurs through a process of a series of steps," explained Marc A. Schuckit, distinguished professor of psychiatry at the University of California, San Diego, and corresponding author of the study.

"One, an individual is likely to consume the amount of [alcohol](#) needed to achieve desired effects; two, if more alcohol is required for such effects, they are likely to drink more per occasion; three, the low LR contributes to association with peers who are likely to have a similar response to alcohol and who, therefore, consume similar higher doses of alcohol per occasion; four, a person's low LR and the influence of similar peers is likely to affect what one should expect from alcohol during a drinking session; and five, the low LR, peer influences, and more positive alcohol expectancies [collectively] encourage using alcohol to cope with life problems." This process contributes to the likelihood of drinking heavily,

Schuckit said, which increases the [risk](#) for [alcohol problems](#).

Victor Hesselbrock, professor of psychiatry at the University of Connecticut School of Medicine, agreed. "This paper demonstrates that a person's LR to alcohol is an important feature of the process in which peer drinking, the expectancies of alcohol's effects, and coping with stress influence [drinking behavior](#), including heavy drinking."

"The question to ask here is 'why do some kids drink a lot and why do others not drink so much?'" said Schuckit. "LR is about 60 percent genetic, so how does this interact with the culture or environment? Alcoholism is about 60 percent genetic as well, so how does this genetic influence interact with the environment?"

"Country comparisons can be of particular value in understanding drinking behavior and the influences on drinking behavior since there can be wide cultural differences with respect to alcohol use," added Hesselbrock. "Factors that are considered very important in one country, such as alcohol expectancies, can be much less important or absent in another culture/country. Processes that are primarily biological, however, such as alcohol metabolism or alcohol absorption, should yield fairly consistent findings across cultures. We will continue to see cross-cultural/cross-country studies as investigators work to unravel the 'vulnerability' issue, particularly with respect to gene – environment interactions. Likely in countries with different dominant religious or political views, other factors may be major contributors to the susceptibility to heavy drinking and alcoholism."

Schuckit and his colleagues evaluated data on 1,905 17-year-olds (1,063 females, 842 males) that were generated through the Avon Longitudinal Study of Parents and Children (ALSPAC), a study that began in 1991 to prospectively follow children born to 14,541 pregnant women in Avon, England between April 1991 and December 1992. LR was measured

with the Self-Rating of the Effects of Alcohol Questionnaire (SRE), outcomes were based on drinking quantities and problems, and standardized questionnaires were used to evaluate peer substance use, alcohol expectancies, and using alcohol to cope with stress.

"Our findings demonstrate that the LR model used in the U.S. also worked very well in another country such as the U.K.," said Schuckit. "We also clarified that the LR model that works with 18- to 20-year-olds also works very well with 12-, 14- and 16-year-olds. Third, the LR model that we have used in other papers is here represented in a very large sample, thus, the results are not haphazard; this is a big sample with large statistical power."

"This study further confirms what we already know about the importance of three known risk factors – expectancies, coping, peer drinking – and adds a fourth, LR," said Hesselbrock. "Having knowledge of LR will better able the clinician to construct more appropriate treatment, and maybe prevention, programs. This will be particularly important for those individuals early in their drinking career but beginning to have drinking problems."

Schuckit agreed. "If you want to find out how environmental factors contribute to the genetic risk for alcohol issues, the environment representing 40 to 50 percent of the picture, this is the kind of work you can do," he said. "If you identify kids who are at risk for heavy drinking early in life because of characteristics such as a low LR that reflect their loading this will allow you to work with them to help prevent them from developing alcohol issues due to environmental factors." Schuckit added that his group is about to start a prevention trial to see whether or not that is possible, that is, if working to change 40 to 50 percent of the LR effect that is the environment will have an impact on their heavy drinking risk.

"It is well understood that there is no single 'cause' of [heavy drinking](#) and alcohol-related problems," said Hesselbrock, "rather, these problems are multi-factorial with environmental, psychological and biological [elements](#). What Dr. Schuckit and his colleagues have shown is that his proposed LR model has some equivalence for both sexes ... and that there are common factors affecting the course of early drinking behavior in girls and boys. Further, peer substance uses, expectancies of alcohol effects and coping operate in the U.K. similar to the U.S."

"Simply put," said Schuckit, "people's lives are better if you can identify a factor that affects the risk for a disease, the world becomes a better place if you can help prevent disease-related problems."

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