

# Energy Drink Consumption and Increased Risk for Alcohol Dependence

## MAJOR FINDINGS

Using data from personal interviews with 1,097 young adults, this study sought to understand whether or not the consumption of energy drinks is associated with higher risk for alcohol dependence. Importantly, the study focused on the consumption of non-alcoholic energy drinks, not the consumption of energy drinks that contain alcohol. Overall, nearly two-thirds (66%) of the sample had consumed an energy drink within the past year. On average, users consumed energy drinks 35 times per year, or a little less than weekly.

Researchers then classified 51% of the sample as low-frequency users of energy drinks (consumed energy drinks 1-51 days per year) and 10% as high-frequency users (consumed energy drinks 52 or more days per year—weekly or more). The low-frequency users did not differ from non-users on their risk for alcohol dependence. However, high-frequency users were 2.4 times more likely than non-users and 1.9 times more likely than low-frequency users to be alcohol dependent. High-frequency energy drink users were more likely than low-frequency users and non-users to be active in a fraternity or sorority, consume more caffeine overall, consume more alcohol, and to have begun drinking alcohol by age 15. In addition to their increased risk for alcohol dependence, high-frequency users of energy drinks were more likely than low-frequency users and non-users to experience a variety of negative consequences due to alcohol, including blacking out and both missing class or having usual activities limited because of a hangover.

One of the important aspects of this study is that the researchers statistically adjusted for the differences between high-frequency energy drink users, low-frequency users, and non-users when calculating the relative risks for alcohol dependence. In this way, the increased risk for dependence could be more closely tied to energy drink use, and not other factors, like being male or exhibiting conduct problems.

**Practice and Policy Suggestions:** Based on this study's findings that energy drink consumption is associated with an increased risk for alcohol dependence, parents should regard frequent energy drink use as a red flag for possible alcohol problems. Based on findings from prior studies, parents and young adults should be aware of the potential harms of mixing energy drinks and alcohol. For example, individuals should be aware that ingesting a large amount of caffeine might mask the impairing effects of alcohol.

Policymakers should take note of growing public health concerns around energy drink consumption, especially in light of emerging research linking it to cardiovascular consequences and a variety of negative alcohol-related consequences.

Given the considerable variability in caffeine content of different energy drinks, some consumers might be ingesting much more caffeine than they realize. Policymakers should consider requiring manufacturers to include caffeine content on all energy drink product labels.

### *Of major interest to:*

- College Administrators
- Parents
- Educators
- Health Professionals
- Students
- Law and Policy Makers



**What could explain these findings?** The cross-sectional nature of the study cannot establish a cause-effect relationship, but the researchers suggested several possible ways in which energy drink consumption might contribute to higher risk for alcohol dependence. For one, prior research indicates that co-ingestion of alcohol and energy drinks is common. This combination is dangerous because the high caffeine levels in energy drinks can mask alcohol's sedative effects, thereby reducing the subjective feeling of drunkenness without reducing alcohol-related impairment. This would also help explain why energy drink users are more likely to engage in physically hazardous behaviors—one of the symptoms of alcohol dependence—such as drunk driving. It is also possible that alcohol dependent individuals rely on energy drinks to help them function normally throughout the day. For example, a college student who drank heavily the night before might consume energy drinks to get through classes or pull all-nighters if frequent drinking has affected his or her study habits. Future research is needed to understand the association between energy drink consumption and alcohol dependence.

The complete publication referenced in this research brief can be found here: Arria, A.M., Caldeira, K.M., Kasperski, S.J., Vincent, K.B., Griffiths, R.R., O'Grady, K.E. (2011). Energy drink consumption and increased risk for alcohol dependence. *Alcoholism: Clinical and Experimental Research*. 35(2), 365-375. doi:10.1111/j.1530-0277.2010.01352.x



### About the College Life Study (CLS)

The CLS is a longitudinal study of 1,253 college students at a large, public, mid-Atlantic university. This study is one of the first large-scale scientific investigations that aims to discover the impact of health-related behaviors during the college experience. Any first-time, first-year student between 17 and 19 years old at the university in the fall of 2004 was eligible to participate in a screening survey. The researchers then selected students to participate in the longitudinal study, which consisted of two-hour personal interviews administered annually, beginning with their first year of college. A full description of the methods used is available.<sup>1,2</sup> Inherent to all self-reporting research methods is the possibility for response bias. Because the sample is from one large university, the ability to generalize the findings elsewhere is uncertain. However, response rates have been excellent and attrition bias has been minimal.

For more information about the study, please visit [www.cls.umd.edu](http://www.cls.umd.edu) or contact Amelia M. Arria at the University of Maryland School of Public Health at [aarria@umd.edu](mailto:aarria@umd.edu).

<sup>1</sup> Arria, A.M., Caldeira, K.M., O'Grady, K.E., Vincent, K.B., Fitzelle, D.B., Johnson, E.P., Wish, E.D. (2008). Drug exposure opportunities and use patterns among college students: Results of a longitudinal prospective cohort study. *Substance Abuse*. 29(4), 19-38.

<sup>2</sup> Vincent, K.B., Kasperski, S.J., Caldeira, K.M., Garnier-Dykstra, L.M., Pinchevsky, G.M., O'Grady, K.E., Arria, A.M. (2012). Maintaining superior follow-up rates in a longitudinal study: Experiences from the College Life Study. *International Journal of Multiple Research Approaches*. 6(1), 56-72.

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