Public health advocates in recent years have become concerned not with the consumption of energy drinks by youth but also their joint consumption with alcohol by young adults. New research provides evidence of a mechanism through which energy drinks may increase binge drinking: combining energy drinks with alcohol increases people's desire to keep drinking more than if they drank alcohol alone.

Results will be published in the August 2014 online-only issue of Alcoholism: Clinical & Experimental Research and are currently available at Early View.

"A number of cross-sectional studies show that young adults who mix alcohol with energy drinks (A+ED) have higher levels of alcohol consumption than their peers who don't mix energy drinks with alcohol, and some studies suggest that this practice increases the risk of 'binge drinking,'" explained Rebecca McKetin, a fellow at the Australian National University's Centre for Research on Ageing, Health and Well-being. "However, it may simply be the case that people who drink more often are more likely to drink A+EDs among other things. Yet if it is the case that energy drinks increase binge drinking, the popularity of A+EDs could exacerbate alcohol-related harms among young people, particularly harms related to intoxication, such as car accidents and injuries from fights or falls." McKetin is also the corresponding author for the study.

"When we consider that research has shown much higher consumption rates in people attending licensed venues, this study suggests the need for our policy makers to get serious about addressing this issue," added Peter G. Miller, associate professor of psychology at Deakin University, Geelong Waterfront Campus in Australia. "Along with other research released recently from Western Australia showing increased harms on nights when people consumed energy drinks, it is becoming more apparent about how associations between energy drink consumption and greater levels of intoxication and harm can be explained, and that the concerns of researchers regarding social order and public health appear to be warranted, despite industry lobbying to the contrary." Miller noted the recent ban by Lithuania on the sale of energy drinks to anyone under 18 years of age.

Study authors assigned 75 participants (46 women, 29 men) aged 18 to 30 years to an alcohol-only or A+ED condition in a double-blind randomized pre-versus post-test experiment. Participants received a cocktail containing either 60 ml of vodka and a Red Bull® Silver Edition energy drink (n=36) or 60 ml of vodka with soda water (n=39); both cocktails also contained 200 ml of a fruit drink. The primary outcome measure was the Alcohol Urge Questionnaire that was taken at pre-test and 20 minutes later at post-test. Other measures taken at post-test were the Biphasic Alcohol Effects Questionnaire, the Drug Effects Questionnaire, and breath alcohol concentration (BAC).

"We found that when people drink A+EDs that they have a stronger desire to keep drinking than if they drank alcohol on its own," said McKetin. "This would mean that someone who drinks A+EDs would want to keep drinking more than their friends who don't. What we can't say is whether this translates into people drinking more. Obviously other factors would play a role there – people can over-ride their desires and many things play into a decision about whether someone would keep drinking or not. However, if it did translate into greater alcohol consumption, we would expect to see people who drink A+EDs drinking more than their peers who don't."

Miller agreed. "A greater urge to drink has substantial implications when we think about the nature of drinking episodes," he said. "As people become intoxicated, even at low levels, they show less inhibitions and are likely to drink more in a cycle of greater intoxication. Of course, the drunker
you get, the more likely you are to get injured, be a victim or perpetrator of an assault, or even drive home while drunk, let alone making bad choices about the people you associate with and possible sexual behaviour.

"The most important implication of the findings is in terms of policies around the sale of energy drinks in bars and night clubs where people are consuming alcohol, and the sale of pre-mixed A+EDs more generally," said McKetin. "Our findings suggest that energy drinks may increase people drinking to intoxication, and consequently increase the risk of alcohol-related problems like drunk-driving and alcohol-fuelled violence. Our study alone does not provide enough evidence to advocate for restrictions on the availability of energy drinks in bars, but it is an important step."

"These results tell us that findings in Australia are similar to those in the USA," added Miller. "It's also worth noting that the very low levels of alcohol and energy drinks used in these types of experiments are due to the restraints of ethics committees, yet people are using far more than this on average out on the street. This difference between what is acceptable in a strictly controlled and monitored experiment versus unregulated pubs and clubs tells us about the worrying degree to which unsafe behaviour is occurring and the need for regulators to act."

Provided by Alcoholism: Clinical & Experimental Research

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