

Energy drinks linked to risk-taking behaviors among college students

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Over the last decade, energy drinks -- such as Red Bull, Monster and Rockstar -- have become nearly ubiquitous on college campuses. The global market for these types of drinks currently exceeds \$3 billion a year and new products are introduced annually.

Although few researchers have examined energy drink consumption, a researcher at the University at Buffalo's Research Institute on Addictions (RIA) has been investigating links between energy drinks and public health concerns like substance abuse and risky behaviors.

Two new research reports by RIA Research Scientist Kathleen E. Miller, Ph.D., examine the relationships between energy drink consumption and risk-taking in college students as well as "toxic jock identity" -- characterized by hyper-masculinity and risk-taking behaviors among college-age athletes.

Miller's research validates and expands upon existing concerns about energy drink consumption: "The principal target demographic for energy drinks is young adults ages 18-25, but they're nearly as common among younger teens," she explains. "This is a concern because energy drinks typically contain three times the caffeine of a soft drink, and in some cases, up to 10 times as much. They also include ingredients with potential interactions such as taurine and other amino acids, massive doses of vitamins, and plant and herbal extracts."

Miller is a sociologist and an adjunct research assistant professor in the Department of Sociology in UB's College of Arts and Sciences. The research was funded by a \$471,000 grant by the National Institute on Drug Abuse.

In the first set of results published online in June in the *Journal of Adolescent Health*, Miller identified links between energy drink consumption, risky

substance use and sexual risk-taking.

Frequent energy drink consumers (six or more days a month), according to Miller's findings, were approximately three times as likely than less-frequent energy drink consumers or non-consumers to have smoked cigarettes, abused prescription drugs and been in a serious physical fight in the year prior to the survey. They reported drinking alcohol, having alcohol-related problems and using marijuana about twice as often as non-consumers. They were also more likely to engage in other forms of risk-taking, including unsafe sex, not using a seatbelt, participating in an extreme sport and doing something dangerous on a dare. The associations with smoking, drinking, alcohol problems and illicit prescription use were found for white but not African-American students.

A total of 795 Western New York male and female undergraduate students participated in the study and 39 percent reported consuming at least one energy drink in the previous month. There was significantly higher consumption by men (46 percent) than by women (31 percent) and higher consumption by whites (40 percent) than by blacks (25 percent). Eighty-seven percent of the students in the study were white; 52 percent were male.

Two-thirds of the energy drink consumers in Miller's study had used energy drinks as mixers with alcoholic beverages. The growing popularity of this practice further heightens concern, Miller says.

"It is widely, but incorrectly, believed that the caffeine in energy drinks counteracts the effects of alcohol, so students will have the energy to party all night without getting as drunk," she explains. "While the combination may reduce perceptions of intoxication, it does not reduce alcohol-induced impairments of reaction time or judgment."

According to Miller, these findings suggest that frequent energy drink consumption may serve as a

useful screening indicator to identify students at risk for what scientists call "problem behavior syndrome."

"Energy drink consumption is correlated with substance use, unsafe sexual activity and several other forms of risk-taking," Miller notes. "For parents and college officials, frequent energy drink consumption may be a red flag or warning sign for identifying a young person at higher risk for health-compromising behavior."

"Although energy drink consumption can be used to predict other problem behaviors, it does not necessarily follow that drinking these substances is a gateway to more serious health-compromising activities," Miller cautions. "It is entirely possible that a common factor, such as a sensation-seeking personality or involvement in risk-oriented peer subcultures, contributes to both. More investigation is needed to study these relationships further, over longer periods of time."

In the second set of results, published in the March/April issue of the *Journal of American College Health*, Miller looked at energy drink consumption and "toxic jock identity."

"For many people, being an athlete is an important part of who they are," Miller explains. "Some go a step farther, though, and come to see themselves as 'jocks.' For them, sport is wrapped up in a larger identity that also emphasizes hyper-masculinity and a willingness to take excessive risks." Unlike an athlete identity, a jock identity can be considered "toxic," according to Miller, because it's associated with a wide range of risky or problem behaviors, including problem drinking, sexual risk-taking, interpersonal violence, academic misconduct, delinquency and even suicide attempts.

Miller's research found that undergraduates who consumed energy drinks more often were also more likely to develop a jock identity and to engage in risk-taking behaviors. "Ultimately," she says, "undergraduates' frequent use of Red Bull and other energy drinks should be seen by peers, parents and college officials as a potential predictor of 'toxic jock identity.'"

In the wake of several recent deaths linked to energy drinks, a number of countries have instituted restrictions on their use. Some, like France, Turkey, Denmark, Norway, Uruguay and Iceland ban high-caffeine/taurine energy drinks altogether, Miller notes. Sweden only permits them to be sold in pharmacies as medicinal products. Canada, which banned these drinks until 2004, now requires warning labels cautioning against use by children or pregnant women, use in large quantities or use with alcohol. However, energy drink consumption remains unregulated in the United States.

Miller says she hopes to develop future research into the influence of personality traits, peer norms and other factors that may influence the relationships among energy drink consumption, race, gender and risk-taking. Better understanding of these relationships, she argues, may be useful in developing programs for preventing substance use and other health-compromising behaviors.

Source: University at Buffalo

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