



Energy Drinks:
Where the Science Meets Main Street

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The Association between Energy Drinks and Later Drug Use among College Students

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PRESENTATION SUMMARY

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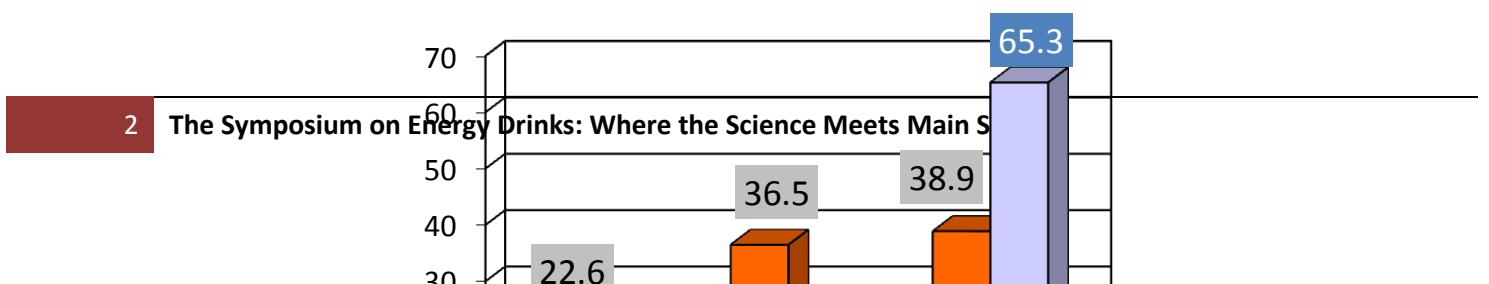
Introduction

Previous studies have observed a link between energy drink use and heavy alcohol consumption as well as increased risk-taking behavior. Little research has examined possible health and behavioral consequences of energy drinks. The lack of research is unfortunate given the explosion of marketing initiatives targeted at youth. Our research group is engaged in investigating the association between patterns of energy drink use and health risk behaviors, (including underage drinking and related consequences, nonmedical use of prescription drugs and illicit drug use) among a sample of 1253 individuals originally enrolled as first-time, first-year college students at a large university in the mid-Atlantic region of the United States. These participants have been involved now for several years in an ongoing research project called the College Life Study (For more information, please see: www.cls.umd.edu). Data were collected from 1,060 students in their second and third years of college.

Prevalence of Energy Drink Use during College

In the second year of the study, 264 students drank energy drinks (approximately 22.6% of all second year students) and in the third year, 429 students were energy drink users (36.5% of all third year students), for an annual increase of 62.5%. However, as seen in Figure 1 below, a higher proportion of the sample were classified as energy drink users when asked specifically about energy drinks, rather than when simply asked the question about "caffeinated products".

Figure 1. Changes in the prevalence of energy drink use in the College Life Study sample. In the senior year, two questions were asked to gather data on energy drink use. The more specific question yielded a greater proportion of users than the non-specific question.



"In the past 12 months, what energy drinks have you consumed?" →

"In the past 12 months, what types of caffeinated products have you typically consumed?" →

Comparison between Energy Drink Users and Non-users

Energy drink users were more likely to be male, but were otherwise demographically similar to students who did not drink energy drinks. For example, 72.2% of energy drink users self-identified as being White compared to 70.6% of non-energy drink users. Energy drink users also had a higher score than non-energy drink users on a scale that measures impulsive sensation-seeking, suggesting that risk-taking behavior might be inherently more likely among energy drink users. Interestingly, energy drink users were no more likely to be engaged in athletics than their non-energy drink using counterparts. Table 1 below compares the percentage of athletes and non-athletes who reported using energy drinks, by gender.

Table 1. Energy drink use by athlete status

	% Energy Drink Use
Males	
Athletes (n = 277)	51.3%
Non-athletes (n = 183)	43.3%
Females	
Athletes (n = 160)	32.0%
Non-athletes (n = 399)	28.8%

Energy drink users tended to drink more servings of caffeine per week on average than non-users. Energy drink users also had significantly greater levels of alcohol and drug involvement. For example, during the second year of the study, energy drink users drank alcohol on an average of 83.9 days in the past year compared to an average of 68.5 days for non-energy drink users. Energy drink users also drank more alcohol on a drinking day (6.0 vs. 4.7 drinks), used more drugs in the past year (1.7 vs. 1.2) and were more likely to have used tobacco (55.3% vs. 43.5%) than their energy drink non-user counterparts.

The Association between Energy Drink Use and Later Use of Illicit Drugs and Nonmedical Use of Prescription Drugs

The research also examined to what extent energy drink use was a risk factor or predictor of starting to use an illicit drug or a prescription drug non-medically. Nonmedical use of a prescription drug can be defined as using a medication

without having a personal prescription for it. Nonmedical use of prescription drugs, such as stimulant medications to treat Attention Deficit Hyperactivity Disorder (ADHD) and analgesic medications to manage acute and chronic pain is a growing concern among health officials and both secondary school and college personnel.

For most of the drugs they studied, “energy drink use did not significantly increase the risk of starting to use a drug for the first time in the subsequent year.” Among marijuana-naïve students in Year 2, the researchers observed new marijuana use by Year 3 in 12% of energy drink users and 10% of energy drink non-users. However, energy drink users were found to be significantly more likely to initiate nonmedical use of prescription stimulants (18.8% vs. 8.2%) and prescription analgesics (8.5% vs. 4.0%).

Explaining the Connection between Energy Use and Nonmedical Use of Prescription Drugs

There are a number of possible explanations for the observed association between energy drinks and subsequent initiation of nonmedical prescription drug use. First, energy drink users and substance users appear to have similar personal characteristics that place them at risk for use of illicit drugs. Second, users of both energy drinks and nonmedical use of prescription stimulants might find the physiological effects of stimulant drugs reinforcing, so it might be plausible that a youthful energy drink user might want to try a different type of stimulant in order to experience a similar or even stronger effect. Lastly, young energy drink users might be more likely to have peers who expose them to opportunities to try other types of drugs, including prescription stimulants and analgesics. More research is necessary to understand these interrelationships and evaluate the longer-term consequences of energy drink use.

Implications of the Findings for Parents, Coaches and School Officials

This study clearly demonstrated the growing popularity of energy drinks among college students. Moreover, and even more concerning, are the finding from this study linking energy drink use with heavier drinking and nonmedical prescription drug use. Energy drink use is associated with heavy drinking and appears to have a unique prospective relationship with nonmedical use of prescription stimulants.

Previous studies have shown that combining energy drinks with alcohol can decrease a person’s perception of their own alcohol-related impairment, thereby increasing the amount of time spent drinking and ultimately increasing the chances of alcohol-related problems or injury. More research needs to be conducted to understand this relationship, but there is enough evidence to suggest limiting the practice of mixing energy drinks and alcohol to reduce the chance of possible adverse health and safety consequences.

It is also plausible that energy drink use might exacerbate the development of a substance abuse disorder, particularly in individuals with an underlying susceptibility. Parents, educators, coaches, and health professionals should regard energy drink consumption as a possible marker for heavy drinking and other drug involvement. The research also suggests that policies be considered that discourage energy drink use, such as limiting advertisements in campus venues and publications, and limiting the sales of energy drinks in on-campus retail outlets. Finally, national regulatory agencies should enforce industry-wide standards requiring responsible messaging about the benefits and possible risks associated with energy drink consumption.

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 regarding the impact of health-related behaviors during college. A full description of the methods used is available.¹ For more information about the study, please visit www.cyahd.umd.edu.

¹ 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.