RIA Reaching Others with Energy Drink Research

Energy drinks are highly caffeinated beverages designed to provide a short-term energy boost. These drinks typically contain as much caffeine as a cup of coffee and three times as much as a standard soft drink, with some brands containing much higher doses. Energy drinks also contain sweeteners, amino acids such as taurine or l-carnitine, massive doses of B vitamins, and plant or herbal extracts such as gingko biloba, ginseng, or milk thistle. The potential interactions among these ingredients are not well understood.

With sales expected to approach $20 billion a year by 2013 in the U.S. alone, energy drinks such as Red Bull, Monster, and Rockstar have become staples of the adolescent and young adult market. Although provocatively named brands such as Full Throttle, Daredevil, Havoc, Rage, Bawls, Who's Your Daddy, Whoop Ass, and Extreme Ripped Force are designed to appeal to a target demographic of 18-25 year olds, they are nearly as common among high school students.

Excessive energy drink use is associated with several potential health risks. Overuse can lead to symptoms ranging from mild (headaches, jitteriness, anxiety) to severe (insomnia, heart palpitations, seizures). Poison control centers and emergency rooms have documented a rapidly growing number of cases of caffeine intoxication involving energy drink use, particularly when coupled with alcohol or other substance use. After several highly publicized cases in 2010, the FDA no longer permits ready-to-drink alcoholic beverages such as Four Loko, Joose, or Maxx to contain caffeine. However, caffeinated mixed drinks such as Red Bull & vodka or Jagerbombs remain extremely popular.

Timely Research

Highlights of RIA research findings in this area included:

- Risk-taking and energy drink use in college students. Undergraduate students who used energy drinks frequently were three times as likely to smoke cigarettes, abuse prescription drugs, or be in a

Expert Advice from RIA Researchers

ATHLETES: Energy drinks before or during games or practices? Probably not a good idea. Though often confused, energy drinks are not sports drinks. Where Gatorade or Powerade are designed to provide hydration and replace electrolytes, caffeine actually contributes to dehydration. Adults and especially children may experience headaches, heart palpitations, hypertension, or blackouts if they combine energy drinks with heavy exercise.

CAFFEINATED COCKTAILS: Combining alcohol (a depressant) with caffeine (a stimulant) may make drinkers look, sound, and feel less drunk than they actually are. Underestimating one's own intoxication puts you at greater risk for drunk driving, alcohol poisoning, and even sexual victimization. Mixing caffeine and alcohol may also lead to heavier drinking than alcohol alone for three reasons: (1) caffeine postpones the sleepiness associated with intoxication, so you can drink longer; (2) energy drink flavors mask the taste of alcohol, so drinks taste better; and (3) caffeine has a "priming" effect on alcohol—that is, it strengthens cravings for another drink.

CAFFEINE: Many consumers of energy drinks and other caffeinated beverages forget that caffeine is a psychoactive stimulant drug, and like other drugs, it is highly addictive. Just like alcohol, if you're going to drink energy drinks, do it responsibly! Unlike soft drinks, there are no official limits on how much caffeine an energy drink may contain. Read the label, and if it doesn't specify the exact caffeine content (many don't), go on-line and find out. Knowledge is power.

MYSTERY INGREDIENTS: Energy drinks typically contain a brand-specific proprietary blend of plant and herbal extracts. Most of these ingredients (such as gingko biloba or ginseng) are probably harmless. Others may not be.

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serious physical fight as infrequent users or nonusers. Frequent energy drink consumers also reported drinking alcohol, having alcohol-related problems, and using marijuana about twice as often as less frequent consumers. Other risk behaviors associated with frequent energy drink use included unsafe sex, not using a seatbelt, participating in extreme sports, and doing something dangerous on a dare.

- Demographic differences. Men were significantly more likely to consume energy drinks than women (46% vs. 31%). Whites were also significantly more likely to consume them than African Americans (40% vs. 25%).
- Energy drinks and alcohol. Two thirds of college student energy drink users also used energy drinks as mixers with alcoholic beverages.

- Substance use and energy drink use in musicians. In a RIA study of amateur and professional musicians between the ages of 18 and 45, energy drink users were more likely than nonusers to report misuse of legal substances, including binge drinking (76% vs. 59%), alcohol-related problems (78% vs. 69%), and misuse of prescription drugs (31% vs. 13%). Energy drink users were also significantly younger on average (25.7 years vs. 30.4 years) and scored higher on personality measures of sensation-seeking, an attraction to novel and varied experiences.

Expert Advice (cont'd)

For example, the bitter orange found in some brands is closely related to ephedra, a compound banned by the FDA in 2004 due to a number of consumer deaths. Because energy drinks are classified as dietary supplements, their content is not subject to direct regulation or oversight by the FDA. It's up to the user to investigate the label. Buyer beware-- Know what you're drinking!

PARENT ALERT: Because they are smaller and their brains are less developed, children are even more sensitive to the health effects of caffeine use than adults are. Kids are at greater risk for caffeine intoxication and their consumption habits should be subject to adult supervision. There is also evidence to suggest that heavy energy drink users are at higher risk for other problem behaviors, such as smoking, drug use, binge drinking, unsafe sex, or fighting. Energy drink use is less of a "gateway drug" than a potential red-flag warning sign for other health-compromising activities.

Reaching Others

These research results have been communicated to various constituencies – individuals, families, medical professionals, addiction treatment providers, other scientists -- in multi-media kinds of ways: newspapers, tv and radio, websites and blogs, peer-reviewed journals. A selection of 'media hits' demonstrate the widespread interest by diverse publics on this subject:

Newspaper/TV/Radio: *The New York Times; Chicago Tribune; Dallas News; Buffalo News;* Buffalo Criterion; *Woman's World Magazine;* UPI; Hamilton, Ontario radio; various Buffalo radio stations; *Addiction Professional Magazine;* CBC; the *Sciences et Avenir*, a French science newspaper; British newspaper *The Independent; USA Today;* Today Show; CNN Headline News; National Public Radio; Medscape Psychiatry from WebMD; *Odyssey Magazine* (for teens 11-18); Global Television-Toronto; *EAP Lifeworks Program* newsletter; the *Seattle Post Intelligencer* and more!

Web: foodconsumer.org; topix.com/forum/city/buffalo; www.genengnews.com (Genetic Engineering & Biotechnology News); http://www.dailydose.net of Great Britain; webmd.com, rodale.com (Men's Health, Women's Health, Prevention), ScienceDaily.com, wkbw.com (Buffalo TV), philly.com/inquirer (*The Philadephia Inquirer*), HealthNewsDigest.com, WNED Radio; musicindustryreport.org; http:www.breitbart.com; esciencenews.com; stonehearthnewsletters.com; topix.com; medicalxpress.com; medscape.com/psychiatry; examiner.com/sandiego; futurity.org/health-medicine; WUSA-TV, Washington, DC; mms.news-medical.net/news; scienceblog.com; *Milwaukee Journal Sentinel* blog; scienceline.com; collegenews.com, topnews.co.uk; citytowninfo.com; *International Business Times;* aol.com; dailyindia.com and more!

Scientific Journals: *Journal of Adolescent Health, Journal of American College Health, Journal of Caffeine Research, Addictions Newsletter.*