

# ALTERNATIVE RESEARCH SERVICES, INC.

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## Monster Beverage (MNST) \$59.38

### Sell Short:

History of industry vs. state AGs  
More than one AG? Cockroach theory  
Documenting the industry's bad track record

Market Cap.	\$10.5 bil
Shares Out.	176 mil
Short Interest	1.9m
Days short	.80
Avg. Daily Vol.	2.2m
St. eps est. 2012	\$2.01
St. eps est. 2013	\$2.49
Px/book	8.89x
Px/sales	5.4x
Px/ EBITDA	17.6x

NY AG said to be responsible for subpoenas to Energy Drink industry (Aug 28, 2012)<sup>1</sup>

- We think that the infrastructure is in place for multiple state attorneys general to take action against the energy drink industry. These state AGs may be able to build on the research and connections established in back in 2009, when major brewers were pressured to remove from the market their alcoholic beverages that contained caffeine. In our last report, we posited that if another state attorney general issued subpoenas to the energy drink industry, it could trigger a sizable drop in the stock, as investors come to believe there will likely be more AGs on the horizon, possibly seeking fines on behalf of citizens in their states who have suffered damages due to drinking poorly labeled energy drinks. The *WSJ* reported on August 28<sup>th</sup> that the NY AG is “investigating whether the multibillion-dollar energy-drink industry is deceiving consumers with misstatements about the ingredients and the health value of its products.” Both MNST and Pepsi received subpoenas. “The probe is the latest in a series of attention-getting moves by New York officials. In May, New York City Mayor Michael Bloomberg announced plans to restrict the sale of large sodas at restaurants, movie theaters and other locations, sparking criticism from the beverage industry.”
- We spoke to the journalists that wrote the *WSJ* article and they confirmed that it was the NY AG that issued the subpoenas that MNST mentioned in its last earnings filing, a few weeks back. The journalists also have heard through the grapevine that other, as-yet undisclosed state AGs may also be involved. We have heard from what we take as a

<sup>1</sup> CITE: Reissig CJ, Strain EC, Griffiths RR. Department of Psychiatry and Behavioral Sciences, The Johns Hopkins University School of Medicine. *Drug Alcohol Depend.* 2009 Jan 1;99(1-3):1-10. Epub 2008 Sep 21. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2735818/>. (We have intentionally left several hyperlinks in place to allow readers to follow our trail by investigating other literature.)

reliable source that the subpoenas came from Maryland. That contradicts the *WSJ* article, though we still believe it to be credible. Another credible industry source conveyed to us a similar sentiment whether it is coming from MD or NY the chances of more scrutiny from other AGs is likely to spread.

- “The New York probe is focused on whether the drink makers are misleading consumers with inaccurate labeling and advertising, according to the person familiar with the matter. The investigation is in the early stages and could expand to other companies, that person said....[i]f energy-drink makers are found to have violated certain state laws regulating food and drugs, they could be forced to pay civil fines and penalties, and to change their labeling and marketing.”
- “The drinks are regulated more loosely than traditional sodas such as cola. In 2009, the FDA said it was ‘concerned’ certain ingredients such as botanical extracts were being added to beverages and foods beyond their traditional use, which it said raised questions about safety. The federal agency says the term ‘energy drink’ isn’t defined by any FDA regulation, describing it as an ill-defined marketing term with widely varying ingredients.”
- In this report we lay out in chronological order the recent history between the energy beverage industry, the state AGs and other related parties.

#### Caffeine-Stoked Energy Drinks Worry Docs<sup>2</sup> (Oct 2006)

- CHICAGO – “More than 500 new energy drinks launched worldwide this year, and coffee fans are probably too old to understand why....[v]ying for the dollars of teenagers with promises of weight loss, increased endurance and legal highs, the new products join top-sellers Red Bull, Monster and Rockstar to make up a \$3.4 billion-a-year industry that grew by 80 percent last year. Thirty-one percent of U.S. teenagers say they drink energy drinks, according to Simmons Research. That represents 7.6 million teens, a jump of almost 3 million in three years. [According to statistics, roughly 2.8 million college students *drive drunk* every year, and many of them end up injured, killed, or hurting someone else.<sup>3</sup>] Nutritionists warn that the drinks, laden with caffeine and sugar, can hook kids on an unhealthy jolt-and-crash cycle. But the biggest worry is how some teens use the drinks. Some report downing several cans in a row to get a buzz, and a new study found a surprising number of poison-center calls from young people getting sick from too much caffeine. *Danger only adds to the appeal, said Bryan Greenberg, a marketing consultant and an assistant professor of marketing at Elizabethtown College.*”
- “‘Young people need to break away from the bonds of adults and what society thinks is right,’ he said. They’ve grown up watching their parents drink Starbucks coffee, and want their own version. *Heart palpitations aren’t likely to scare them off.* ‘Monster is more of a hard rocker, maybe with a little punk thrown in, much more hardcore,’ he said.

<sup>2</sup><http://www.washingtonpost.com/wp-dyn/content/article/2006/10/29/AR2006102900290.html>

<sup>3</sup><http://www.jurewitz.com/library/caffeine-alcohol-effects.html>

'Rockstar is the more mainstream, glam rock band that's more about partying than playing.' *Following complaints from parents, convenience store operator 7-Eleven Inc. recently told franchises to pull the drink from its shelves.* [Cocaine Energy Drink] Red Bull founder Dietrich Mateschitz based his product on tonics sold in Asia. He started selling Red Bull in 1987 in Austria, his native country, and today 2.5 billion cans are sold a year in more than 130 nations. The industry leader grabbed more than 37 percent of the U.S. market last year, according to Beverage Digest.”

- “The potential for accidents and alcohol poisoning worries Dr. Sandra Braganza, a pediatrician and nutrition expert at the Children's Hospital at Montefiore in New York. As she prepared to write an article about energy drinks for a pediatrics journal, she was surprised how little published research she could find on them. ‘The truth is, we don't know what kind of effects these ingredients can have,’ Braganza said of taurine, glucuronolactone and guarana. ‘We have to start doing more studies on this.’ Earlier this month, a new study found a surprising number of caffeine overdose reports to a Chicago poison control center. These involved young people taking alertness pills such as NoDoz or energy drinks, sometimes mixed with alcohol or other drugs. During three years of reports to the center, the researchers found 265 cases of caffeine abuse. Twelve % of those required a trip to the hospital. The average age of the caffeine user was 21.”
- ‘Young people are taking caffeine to stay awake, or perhaps to get high, and many of them are ending up in the emergency department,’ said Dr. Danielle McCarthy of Northwestern University, who conducted the study. ‘Caffeine is a drug and should be treated with caution, as any drug is.’”
- A University of Wisconsin study of 14 students found that two energy drink ingredients, caffeine and taurine, didn’t improve short-term memory but led to slower heart rates and higher blood pressure. Since some energy drink ingredients generally speed up heart rates, the researchers could only speculate on the cause.
- Carol Ann Rinzler, author of “Nutrition for Dummies,” examined the labels of the top three energy drinks. “The labels simply don’t deliver all the facts,” she said. ‘For example, while all list caffeine as an ingredient, and most tell you exactly how much caffeine is in the drink, they also list guarana, a caffeine source, as a separate ingredient but don’t tell how much caffeine one gets from the guarana.’”

#### 11 State AGs and FDA Want to Decaffeinate Alcoholic Drinks <sup>4</sup> (June 2008)

- Part of MNST’s success has been due to the legal pressures applied to the major beer manufacturers. Several of the major brewers (e.g. Anheuser-Busch/InBev), developed several products with 12% alcohol and caffeine, supposedly targeted at underage drinkers. Several State AGs – 11, to be exact – went after these manufacturers, causing these companies to discontinue sale of those products. Monster and competitors were able to increase their sales by filling the vacuum created by a marketplace that had no

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<sup>4</sup> [http://www.consumeraffairs.com/news04/2008/06/energy\\_drinks.html](http://www.consumeraffairs.com/news04/2008/06/energy_drinks.html)

longer had a pre-mixed product to meet the demand of consumers wanting to mix alcohol with energy drinks. It seems possible that MNST's success over the last few years has been partially driven by expanding market share into markets where underage drinkers have access to alcohol.

- “Under fire from the attorneys general of 11 states, Anheuser-Busch has agreed to discontinue its popular alcoholic energy drinks, including Tilt and Bud Extra, and vowed it will not produce any caffeinated alcohol beverages in the future...Anheuser-Busch's [recent decision](#) at the prodding of eleven state attorneys general to discontinue its two energy drinks, Tilt and Bud Extra, has won nods of approval from health care professionals.”
- “But despite Busch's action, there are an estimated 200 energy drinks still on the market. That's a lot of energy. ‘There was a time when we would get our caffeine intake from coffee and cola, but now there are a number of caffeine containing beverages and we need to be careful because over a period of 24 hours that caffeine intake is cumulative,’ said Dee Rollins, R.D., PhD, dietitian with Baylor Regional Medical Center at Grapevine, Texas.”

#### Anheuser-Busch Spikes Spykes

- “Anheuser-Busch's recent decision at the prodding of eleven state attorneys general to discontinue its two energy drinks....Attorneys General Charged the Drink is Aimed at Minors 05/19/2007<sup>5</sup>—*Thirty states are blasting Anheuser-Busch* for targeting young people with alcohol energy drinks like Bud Extra, Spykes and TILT. The drinks are spiked with caffeine and other stimulants but consumers aren't warned about the health risks posed by the products.<sup>6</sup> Raising specific concerns about the illegible labels, New York Attorney General Andrew Cuomo called on the company to provide readable warnings about the risks of mixing energy drinks with alcohol.”

#### MillerCoors Sued Over “Sparks” Alcoholic Energy Drink<sup>7</sup>

- “The Center for Science in the Public Interest has filed suit against MillerCoors Brewing Company, formerly Miller, over its alcoholic energy drink, Sparks. *The product has more alcohol than regular beer and contains unapproved additives, including the stimulants caffeine and guarana, according to the lawsuit, which is asking the Superior Court of the District of Columbia to stop MillerCoors from selling the controversial drink, which is also under scrutiny from state attorneys general.*”
- “Drinkers of caffeinated alcoholic drinks are more likely to binge drink, ride with an intoxicated driver, become injured, or be taken advantage of sexually than drinkers of

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<sup>5</sup> [http://www.consumeraffairs.com/news04/2007/05/bud\\_extra03.html](http://www.consumeraffairs.com/news04/2007/05/bud_extra03.html) June 30, 2008

<sup>6</sup> [http://www.consumeraffairs.com/news04/2007/05/bud\\_extra.html](http://www.consumeraffairs.com/news04/2007/05/bud_extra.html) 5/10/2007

<sup>7</sup> [http://www.consumeraffairs.com/news04/2008/09/cspi\\_sparks.html](http://www.consumeraffairs.com/news04/2008/09/cspi_sparks.html) 9/9/08

non-caffeinated alcoholic drinks, according to a *2007 study* conducted at Wake Forest University.”

### AGs Seek Scientific Opinion in 2009

- We spoke with one of the original scientists that wrote the letter in September 2009 to the state AGs. At that time, the intent was to include the energy beverage industry in their warnings about the mixture of alcoholic beverages and high caffeine products. It was not entirely specific to the brewers that used caffeine as an additive. It was the FDA that separated the two, using a legal interpretation to disallow caffeine as an added ingredient to premixed alcohol, leaving the energy drinks – which are classified as dietary supplements – untouched. Our source concurred with our thesis that the energy drink companies filled the vacuum left by the major brewers. MNST’s 2008/09 sales growth rate was 10%, then increased to 55% from 2009/2011.
- Source has not done research in that area for 2 years, but was one of the key players in consulting the 3 AGs that sought out scientific opinion on the issue. Source believes the FTC route, and not the FDA route, will be the most viable source of successful pressure that can be brought to bear on the energy drink companies, because of the FTC’s mandate to protect consumers from misleading marketing.
- Source then directed us to a former state AG source that is now retired, but still connected. We conducted a lengthy interview with him. Source expressed a very high level of concern over the issues of alcohol and caffeine, and seemed to concur with our theses regarding potential outcomes for the industry in terms of being regulated as a beverage or being banned from marketing to underage drinkers.
- Originally, the states established a task force of 3 state AGs (CT, UT, and Guam), plus our source. The task force sought scientific evidence about the dangers of caffeine and alcohol, then CC’ed the other 15 or 16 state AGs with the findings in the letter to the state AGs (forwarded to the FDA by the AGs four days after receipt). That infrastructure is easily accessible in the current situation with NY issuing subpoenas as many of the players involved in 2009 are still in place.

### Quotes from the letter to AGs (September 21, 2009)

- “The advertising of caffeinated alcoholic beverages often suggests that they are ‘stimulating,’ fueling the popular, but incorrect, notion that drunkenness may be ameliorated or altogether averted by mixing caffeine with alcohol, even when the amount of ingested alcohol is extreme. This particular consequence is a health and safety concern for many reasons. Being able to accurately perceive one’s level of intoxication is important; an *inaccurate perception will, for example, increase the likelihood of driving while intoxicated* or alcohol poisoning, or inflicting injury to oneself or another person. Expectancies regarding the palliative effects of caffeine may

further exacerbate these risks by undermining compensatory adaptive responses to alcohol-induced impairment (Fillmore, Roach, & Rice, 2002).”

- “In addition, being wide awake and drunk at the same time increases the risk of engaging in several forms of violent or other high-risk physical behaviors that can cause injury. Even after adjusting for the amount of alcohol consumed, college students who consumed alcohol mixed with energy drinks had a significantly higher prevalence of serious alcohol-related consequences such as being taken advantage of sexually, taking advantage of someone else sexually, riding with a drunken driver, and being physically injured, compared to students who drank alcohol alone (O'Brien et al., 2008).”
- “In light of the foregoing health and safety issues, there has been growing international concern regarding the consumption of alcoholic energy drinks. The European Centre for Monitoring Alcohol Marketing (EUCAM), the Dutch National Foundation for Alcohol Prevention (STAP), the Food Safety Promotion Board of the Republic of Ireland (SafeFood), Educ'alcool of Quebec, the French Minister of Health, and the governments of Australia and New Zealand have all issued warning statements about the physiological and safety risks associated with combining alcoholic beverages and energy drinks.”

#### Prior Research by Dr.'s Goldberger and Griffith (Both signed the 2009 Letter)

- “In a study published last year in the *Journal of Analytical Toxicology*, Bruce A. Goldberger, director of toxicology at the University of Florida College of Medicine, tested the caffeine content of 10 energy drinks, including Red Bull, Red Devil, and Hair of the Dog.<sup>8</sup> In most energy drinks, he said, caffeine levels were higher than the FDA limit for sodas, which is 65 mg of caffeine per 12 ounces. The FDA does not regulate caffeine in energy drinks, some of which, like Cocaine, contain huge amounts of caffeine: 280 mg in an 8.4-ounce serving, compared with about 100 mg per 6 ounces in coffee.”
- “Overall, caffeine ‘is relatively benign and is not associated with life-threatening health risks,’ said psychopharmacologist Roland Griffiths, a professor in the department of psychiatry and neuroscience at Johns Hopkins University and a caffeine expert. ‘But here it is being promoted in the form of energy drinks and, *alarmingly, in many cases to children and adolescents,*’ Griffiths said.”

#### The 18 State AGs’ Letter to FDA Commissioner (Sept 25, 2009)

- While this letter is directed at the FDA from 3 state Attorneys General, it CC’s another 16, and lays the foundation for a legal position toward the rest of the unregulated energy drink companies, today. In effect, if one state attorney general can issue subpoenas (as MNST disclosed 3 weeks ago), we see no reason other states won’t join or follow suit.

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<sup>8</sup> [http://www.boston.com/yourlife/health/fitness/articles/2007/01/29/are\\_energy\\_drinks\\_bad\\_for\\_you/](http://www.boston.com/yourlife/health/fitness/articles/2007/01/29/are_energy_drinks_bad_for_you/) January 29, 2007

The history of getting caffeinated beer off the market will likely serve as a legal precedent and indicator of future action by regulators.

- The letter starts, “We write to express our grave concerns about the health and safety hazards posed by alcoholic energy drinks (AED’s), also known as caffeinated alcoholic beverages. AED’s are a class of alcoholic beverages to which are added caffeine and other stimulants, *such as guarana, that are metabolized as caffeine.*” (emphasis added)
- “A food additive is presumed ‘unsafe’ unless its particular use has been approved by federal regulation or is GRAS under the conditions of its intended use. Under the GRAS guidelines, the burden is on the manufacturer to prove that (1) an additive is safe for its intended use based on the published scientific literature, and (2) there is a consensus of scientific opinion regarding the safety of the use of the substance. 21 CFR §§ 170.3, 170.3. The FDA has approved caffeine as GRAS only for use in non-alcoholic cola-type beverages in concentrations no greater than 200 parts per million. 21 CFR 182.1180. The FDA has not approved caffeine at any level in alcoholic beverages.”
- “Several recent scientific studies published in peer reviewed journals demonstrate the dangers of mixing caffeine with alcohol. As these studies show, stimulants such as *caffeine appear to mask the intoxicating effects of alcohol, which may lead to increased risk-taking and other serious alcohol related problems....*”
- “In addition, the GRAS standard requires there be *a consensus* about the safety of the substance for its intended use among qualified experts based on generally available scientific data.<sup>9</sup> On the contrary, experts in the field agree that the use of caffeine added to alcohol poses a significant public health threat and that it has never been shown or demonstrated that any quantity of or level of caffeine is safe for use in alcohol.”

#### Senator’s Urge FDA for Release of Energy Drink Dangers (July 2010)

- “Schumer, Feinstein, Klobuchar & Merkly tell FDA: Alcoholic ‘Energy Drinks’ such as Four Loko and Joose, may be unsafe or even illegal—Senators urge agency to release findings about drinkers’ potential dangers, especially for young drinkers.”<sup>10</sup>
- “In November 2009, the FDA demanded that the makers of these beverages supply information to prove the safety of their product, but the agency has yet to produce a finding. In a letter to FDA Administrator Dr. Margaret Hamburg, the senators said the drinks appear to be *marketed to underage teens*, misleading parents and law enforcement by designing labels and containers so the products resemble non-alcoholic energy drinks. They pressed the agency to complete its probe into the drinks and issue a public finding.”
- “‘The FDA needs to determine once and for all if these drinks are safe, and if they’re not, they ought to be banned,’ Schumer said. ‘Caffeine and alcohol are a dangerous mix,

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<sup>9</sup> Emphasis added by us. We think that the scientific literature is quickly changing since this letter was written, implying there could be a lack of consensus over energy drinks.

<sup>10</sup> [http://www.schumer.senate.gov/new\\_website/record.cfm?id=326791](http://www.schumer.senate.gov/new_website/record.cfm?id=326791)

especially for young people. Other drink manufacturers have voluntarily stepped back from peddling these products, but certain companies are still out there targeting young consumers'....[a] recent study found that *young and underage drinkers* who combine alcohol with caffeine, which occurs with increasing frequency given the prevalence of beverages like Four Loko and Joose, are more likely to suffer injury, be the victim of sexual assault, drive while intoxicated, and require medical attention than drinkers who consume caffeine-free beverages....[e]arlier this month, Schumer pushed the FTC to launch an investigation into these drink manufacturers' marketing practices. The FTC has yet to indicate whether it has acted on that request."

### One Bad Apple?

- "The beverages, nicknamed 'blackout in a can', responsible for hospitalization of 23 students"<sup>11</sup>—"After 23 students were hospitalized for alcohol intoxication at the beginning of the Fall semester, Ramapo College in Mahwah, New Jersey banned all alcoholic energy drinks on campus. While all brands of alcoholic energy drinks are banned, one brand in particular, Four Loko, was called out by name. The drink, which comes in 23.5 oz cans, in flavors like Fruit Punch, Blue Raspberry, and Cranberry Lemonade, is cheap (about \$2.50 each) and has an alcohol content of 12%."
- "Washington State Bans Alcoholic Energy Drinks like Four Loko"<sup>12</sup>—"Gov. Chris Gregoire joined Washington State Liquor Control Board Chair Sharon Foster on Wednesday to announce an emergency rule that bans the sale of alcoholic energy drinks in Washington state. 'At my request, the board this morning voted to ban this new breed of alcoholic drinks in our state. I applaud its members for their action,' Gregoire said. 'I was particularly concerned that these drinks tend to *target young people*. Reports of inexperienced or underage drinkers consuming them in reckless amounts have given us cause for concern.'"
- "People looking to purchase alcoholic energy drinks in Michigan will now have to cross state lines to get their fix."<sup>13</sup>—"The Michigan Liquor Control Commission (MLCC) has rescinded the approval of all alcohol-infused energy drinks, like the headline-making Four Loko, in light of several studies regarding the popular drinks, the widespread community concerns aired by substance abuse prevention groups, parent groups and various members of the public, as well as the FDA's decision to further investigate these products."

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<sup>11</sup><http://www.consumeraffairs.com/news04/2010/10/new-jersey-college-bans-alcoholic-energy-drinks-from-campus.html> October 10, 2010

<sup>12</sup><http://www.consumeraffairs.com/news04/2010/11/washington-state-bans-alcoholic-energy-drinks-like-four-loko.html> November 11, 2010; <http://articles.mercola.com/sites/articles/archive/2010/12/10/washington-state-may-ban-alcoholic-energy-drinks.aspx>

<sup>13</sup><http://www.consumeraffairs.com/news04/2010/11/michigan-bans-all-alcohol-infused-energy-drinks.html>

- “Schumer also asked FDA to make *public its probe into marketers of energy drinks*. ‘The probe was launched after a letter by 18 attorneys general last year expressed ‘grave concerns’ about the drinks’ safety and asked the FDA to remove them from the market.’”

#### Illinois Tries To Block All Alcoholic Energy Drinks<sup>14</sup>

- “Orders manufacturers to halt sales in the state – Energy drinks containing a caffeine and alcohol mixture may be on their way to becoming a thing of the past. Yet another state has announced intentions to block their sale. In the wake of a [ruling by the Food and Drug Administration](#) (FDA) that found the products unsafe for consumption, Illinois Attorney General Lisa Madigan has issued letters to manufacturers demanding they halt sales of these beverages in her state. Madigan warned that failure to adhere to the immediate removal of these drinks could amount to violations of the state's Consumer Fraud and Deceptive Business Practices Act and the Food, Drug and Cosmetic Act. She emphasized businesses could stand to lose licenses to manufacture market or sell any alcohol products statewide if they fail to comply.”
- The FDA has the ability to demand quick responses from the industry if necessary, as in the following example: “Agency gives four manufacturers 15 days to respond to warning letters<sup>15</sup>—Caffeinated alcoholic beverages may be going the way of Joe Camel. The U.S. Food and Drug Administration has warned four companies that make malt liquors containing *caffeine that it considers the caffeine to be ‘an unsafe food additive.’* The letters went to four companies: Charge Beverages Corp., New Century Brewing Co. LLC, Phusion Projects LLC (which does business as the Drink Four Brewing Co.), and United Brands.”

#### Health Officials Aren't Finished With Energy Drinks<sup>16</sup>

- “Researchers call for more consumer education and stricter federal regulations. Even though controversy has died down over Four Loko and other highly-caffeinated alcoholic beverages, it appears health officials still have a *wary eye trained on energy drinks*. Love Red Bull? You might want to stock up now. According to researchers at the University of Maryland School of Public Health and [Wake Forest University School of Medicine](#), highly-caffeinated energy drinks -- even those containing no alcohol -- may pose a significant threat to individuals and public health.”
- “Non-Alcoholic Energy Drinks May Pose 'High' Health Risks”<sup>17</sup> – COLLEGE PARK, Md. – “Highly-caffeinated energy drinks - even those containing no alcohol - may pose a

<sup>14</sup><http://www.consumeraffairs.com/news04/2010/11/illinois-tries-to-block-all-alcoholic-energy-drinks.html>11/29/2010

<sup>15</sup><http://www.consumeraffairs.com/news04/2010/11/fda-wants-to-decaffeinate-alcoholic-drinks.html> 11/17/10

<sup>16</sup><http://www.consumeraffairs.com/news04/2011/01/health-officials-aren-t-finished-with-energy-drinks.html> 1/28/2011

significant threat to individuals and public health, say researchers at the University of Maryland School of Public Health and Wake Forest University School of Medicine...”

- WINSTON-SALEM, N.C.<sup>18</sup> – “College students who drink alcohol mixed with so-called ‘energy’ drinks are at dramatically higher risk for injury and other alcohol-related consequences, compared to students who drink alcohol without energy drinks, according to new research from Wake Forest University School of Medicine. *The researchers found that students who consumed alcohol mixed with energy drinks were twice as likely to be hurt or injured, twice as likely to require medical attention, and twice as likely to ride with an intoxicated driver, as were students who did not consume alcohol mixed with energy drinks.* ‘We knew anecdotally – from speaking with students, and from researching internet blogs and websites -- **that college students mix energy drinks and alcohol in order to drink more, and to drink longer,**’ said Mary Claire O’Brien, M.D., associate professor of emergency medicine and public health sciences and lead researcher on the study. ‘But we were surprised that the risk of serious and potentially deadly consequences is so much higher for those who mixed energy drinks with alcohol, even when we adjusted for the amount of alcohol.’ *Compared to current drinkers who did not consume alcohol mixed with energy drinks, students who did drink significantly more during a typical drinking session (5.8 drinks versus 4.5 drinks/typical session).* They reported twice as many episodes of weekly drunkenness (1.4 versus 0.73 days/week). The greatest number of drinks in a single episode was *36 percent higher* for students who reported drinking energy drinks with their alcohol (8.3 versus 6.1 drinks.) O’Brien and colleagues conducted a web-based survey of 4,271 college students from 10 universities. Students were asked approximately 300 questions about alcohol use, its consequences, and other health risk behaviors. Of students who reported drinking alcohol in the past 30 days, 24 percent said they consumed alcohol mixed with energy drinks.”
- “The Food and Drug Administration (FDA) limits caffeine to 65 milligrams per serving of a food or beverage. Since energy drinks are currently not regulated by the FDA, they can contain as much as 300 milligrams of caffeine in a single serving.”
- **“Twenty-nine state attorneys general have already condemned alcoholic energy drinks,”** said O’Brien.”

JAMA Commentary (Feb 2011)<sup>19</sup>

- “In a new online commentary in the Journal of the American Medical Association (JAMA), they recommend immediate consumer action, education by health providers,

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<sup>17</sup> <http://newsdesk.umd.edu/vibrant/release.cfm?ArticleID=2328> Contacts: Neil Tickner, 301 405 4622 or [ntickner@umd.edu](mailto:ntickner@umd.edu) 1/26/2011

<sup>18</sup> [http://www.wakehealth.edu/News-Releases/2007/Study\\_Shows\\_Energy\\_Drink\\_“Cocktails”\\_Lead\\_to\\_Increased\\_Injury\\_Risk.htm](http://www.wakehealth.edu/News-Releases/2007/Study_Shows_Energy_Drink_“Cocktails”_Lead_to_Increased_Injury_Risk.htm) November 5 2007

<sup>19</sup> <http://phys.org/news/2011-01-non-alcoholic-energy-pose-high-health.html>

voluntary disclosures by manufacturers and new federal labeling requirements. *‘Recent action to make pre-mixed alcoholic energy drinks unavailable was an important first step, but more continued action is needed,’* says University of Maryland School of Public Health researcher Amelia Arria.”

- “‘Individuals can still mix these highly caffeinated energy drinks with alcohol on their own. It is also concerning that no regulation exists with regard to the level of caffeine that can be in an energy drink.’ Arria, who also directs the Center on Young Adult Health and Development, and co-author Mary Claire O’Brien, associate professor of emergency medicine at Wake Forest University School of Medicine, alerted various state attorneys general to the risks of alcoholic energy drinks starting in 2009. *These actions culminated last November in actions against Four Loko and similar products by the U.S. Food and Drug Administration and the Federal Trade Commission.*”
- “*‘Recent action to make pre-mixed alcoholic energy drinks unavailable was an important first step, but more continued action is needed,’* says University of Maryland School of Public Health researcher Amelia Arria, who directs the Center on Young Adult Health and Development. ‘Individuals can still mix these highly caffeinated energy drinks with alcohol on their own. It is also concerning that no regulation exists with regard to the level of caffeine that can be in an energy drink.’ Arria and co-author Mary Claire O’Brien, associate professor of emergency medicine at Wake Forest University School of Medicine, **alerted various state attorneys general to the risks of alcoholic energy drinks starting in 2009**, steps that culminated last November in actions against Four Loko and similar products by the U.S. Food and Drug Administration and the Federal Trade Commission.”
- “The JAMA paper cites three public health concerns surrounding all packaged energy drinks with moderate to high levels of caffeine: [1] Consumers often mix alcohol and energy drinks: ‘Energy drinks have become enmeshed in the subculture of partying,’ the paper says....‘[r]esearch has demonstrated that individuals who combine energy drinks with alcohol underestimate their true level of impairment’. [2] Caffeine can have adverse health effects in susceptible individuals: ‘Therefore continued public health awareness regarding high levels of caffeine consumption, no matter what the beverage source, in sensitive individuals is certainly warranted,’ the researchers write. The commentary recommends several ‘proactive steps to protect public health’...”
- *“Regulatory agencies should require energy drink manufacturers to disclose caffeine content and appropriate warnings about the risks on the labels. The JAMA paper, The ‘High’ Risk of Energy Drinks, is available online: [link replaced; see footnote below].”*<sup>20</sup>

#### Suspect Ingredient #1: Taurine

- We found scores of articles on Taurine and its effects on the human body. What seems to be accepted about Taurine in energy drinks by the medical and scientific community

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<sup>20</sup> <http://jama.jamanetwork.com/article.aspx?articleid=645466>

is: 1) Taurine mitigated the increases in heart rate and blood pressure caused by caffeine, sugar, and other stimulants found in most energy drinks; and, 2) conclusive research on the long-term effect of Taurine supplementation and the use of Taurine in energy drinks is lacking. Our suspicion is that these companies add Taurine to defeat the normal physiological response, thereby inducing consumers to drink more toxically-caffeinated energy drinks in a shorter period of time.

- “Red Bull May Not Give You Wings: A Combination of Caffeine and Taurine Has No Effect on Short Term Memory but Induces Changes in Heart Rate and Mean Arterial Blood Pressure”<sup>21</sup> – “Taurine May Override Effects of Caffeine on Heart Rate: Subject heart rates decreased by ~8 beats per minute within 45 minutes of consuming caffeine and taurine. Ingestion of caffeine, however, is expected to increase heart rate by triggering the release of epinephrine.<sup>22</sup> The decrease in heart rate might therefore be attributed to the effects of taurine. Baum and Weis found that taurine *in combination with caffeine* significantly increased cardiac stroke volume in young endurance athletes after exercise.<sup>23</sup> While we cannot be certain that taurine triggered this sequence of events, the fact that heart rate did not increase as expected with caffeine consumption suggests that taurine was doing something to alter cardiovascular physiology....caffeine and taurine in combination elevate blood pressure, but the effect occurs more slowly than the drugs’ actions on heart rate (*i.e.*, HR decreased 45 minutes after treatment was ingested while MABP changes were not observed until after 70 minutes had passed).”
- “Caffeine reduced feelings of fatigue and increased tension and vigor. Taurine reversed the effects of caffeine on vigor and caffeine-withdrawal symptoms. No effects were found for salivary cortisol or heart rate.”<sup>24</sup>
- *Taurine Side Effects*<sup>25</sup> – by Priya Johnson – March 9, 2012 – “The ones who are most plagued by questions regarding taurine's long-term effects on the body, are mostly bodybuilders. Taurine is helpful to bodybuilding enthusiasts, as it increases nitric oxide production. Nitric oxide is a gas which is produced, every time the muscle contracts and the blood vessel enlarges. Taurine helps widen the blood vessels, thereby increasing the blood flow to the muscle cells. It increases the efficiency of rigorous workout sessions and ameliorates the overall performance. However, the chronic use of these supplements makes them worry about the various taurine side effects....[s]ide effects of taurine in energy drinks has still not been studied properly, so it is difficult to say anything in this matter.”

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<sup>21</sup> <http://www.biotech.wisc.edu/outreach/pdfs/redbullposter.pdf>

<sup>22</sup> Widmaier P, Raff H, and Strang K. Vander, Sherman, and Luciano’s *Human Physiology: The Mechanisms of Body Function*. 9th Ed. New York: McGraw-Hill, 2004. [Citation number changed from internal citation in original]

<sup>23</sup> Baum M and Weis M. “The influence of a taurine containing drink on cardiac parameters before and after exercise measured by echocardiography.” *Amino Acids*. 2001; 20: 75-82. [Citation number changed from internal citation in original]

<sup>24</sup> Giles GE, Mahoney CR, Brunyé TT, Gardony AL, Taylor HA, Kanarek RB. “Differential cognitive effects of energy drink ingredients: Caffeine, taurine, and glucose.” *Pharmacol Biochem Behav*. 2012 Oct;102(4):569-77. Epub 2012 Jul 20. Retrieved online at: <http://www.ncbi.nlm.nih.gov/pubmed/22819803>

<sup>25</sup> <http://www.buzzle.com/articles/taurine-side-effects.html>

## Suspect Ingredient #2: Guarana

- Guarana is an ingredient common to MNST and other energy drinks. It contains caffeine, but its caffeine content is not counted towards total caffeine listed on MNST products' labeling. "Guarana is used for weight loss, to enhance athletic performance, as a stimulant, and to reduce mental and physical fatigue. It is a frequent addition to energy and weight loss products. Some people also use guarana to treat low blood pressure and chronic fatigue syndrome (CFS), and to prevent malaria and dysentery. It is also used to enhance sexual desire, to increase urine flow, and as an astringent."<sup>26</sup>
- "Guarana contains caffeine. Caffeine works by stimulating the central nervous system (CNS), heart, and muscles. Guarana also contains theophylline and theobromine, which are chemicals similar to caffeine."
- "Guarana...is likely unsafe and even deadly, due to its caffeine content, when taken in high doses or long-term. The fatal dose of caffeine is estimated to be 10-14 grams (150-200 mg per kilogram; the "typical" man weighs about 70 kilograms, so a lethal dose of caffeine for this man would be 10,500-14,000 mg). This is quite a high dose. Consider that one cup of brewed coffee provides from 95-200 mg of caffeine. However, serious poisoning can occur at doses lower than 150-200 mg per kilogram depending on an individual's caffeine sensitivity or smoking behavior, age, and prior caffeine use."

### Energy drinks pose risks for teen, young adults<sup>27</sup> (Aug 2012)

- With energy drinks under fire as high school and college classes resume, students are urged to avoid starting a habit involving the caffeine-crazy beverages. A 2007 study performed by Nutrition Journal showed that *51 percent of college students* said they consumed more than one energy drink a month each semester. The biggest reasons for energy drink consumption included insufficient sleep, to get an energy boost and to mix with alcohol while partying. About 500 college students were surveyed in the study.

### Dangers of energy drinks among young<sup>28</sup> (translated from French)

- "This article proposes to take our knowledge of the adverse effects of these drinks, particularly among young people. With the exception of caffeine, the effects of different components on the physical and mental performance remain very controversial and difficult to confirm experimentally. There is, however, a risk of caffeine intoxication in children and adolescents followers of caffeinated products....[t]he major risk associated

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<sup>26</sup> <http://www.webmd.com/vitamins-supplements/ingredientmono-935-GUARANA.aspx?activeIngredientId=935>

<sup>27</sup> <http://www.cleburnetimesreview.com/local/x1971508613/Energy-drinks-pose-risks-for-teens-young-adults>

<sup>28</sup> <http://www.ncbi.nlm.nih.gov/pubmed/20926266> -- Bigard, A.X. "[Risks of energy drinks in youths]". Institut de recherche biomédicale des armées. *Arch Pediatr*. 2010 Nov;17(11):1625-31., translated from French to English using Google Translate (<http://translate.google.com>), with modifications by us

with energy drinks is undeniably their association with alcohol. Between 25 and 40% of young people recognize associate energy drinks to alcohol during evenings.”

- “A fairly recent study reported an increase of 17% Global sales of these beverages in 2006 compared to the year previous, with nearly 3.5 billion liters sold world. It has likewise been an increase annual rate of nearly 50% of sales of energy drinks to United States from 2002 to 2006, the turnover was the substantial sum of 650 million U.S. dollars in 2006. These drinks are officially hit the French market two years ago and many questions are asked about their composition and their effects on health. They are especially popular with adolescents and young adults.”
- “Many marketing strategies and messages advertising are youth-oriented and aim to promote the consumption of such beverages. <sup>29</sup> Slogans used largely reflected in all advertising, which some attribute to the virtues of these drinks ‘give wings’ (Gives You wings) make them very popular among young people. A wide study of a population of 800 students has shown that the frequency of consumption of Energy Drinks (alone or in combination with alcohol) was associated with a need for identification with sport, expression of manhood and to risk behavior. Frequency of consumption energy drinks can even be considered as a marker of risk behavior among adolescents and young adults.<sup>30</sup>”
- “Caffeine or caffeinated products and beverages is increasing among youth in the United States, consumption of caffeine increased 70% among children and adolescents since 1977....children and adolescents were much more vulnerable to caffeine poisoning than adults....[a] survey by survey was conducted in the United States on a wide cohort of students (500 students), which showed that associated consumption of energy drinks and alcohol was a common practice for 73% of consumers regular.” (internal citations omitted)

#### Man's heart stops after Red Bull overdose (Aug 2007)<sup>31</sup>

- “A MAN whose heart stopped after he consumed eight Red Bull energy drinks in five hours has called for an overhaul of the product’s warning labels. Matthew Penbross, 28, collapsed after downing the popular drinks, each containing 80 milligrams of caffeine, last Sunday. He drank the Red Bull while competing in a motocross event on the state's Mid North Coast. His heart stopped and he needed defibrillation from ambulance officers. Now facing six weeks off work, he said warning labels on the products should be revamped to alert people that excessive consumption could lead to death. Labels currently warn against consuming more than two cans, or 1.5 bottles a day, without describing the consequences. Dr Malcolm Barlow, a cardiologist who treated Mr Penbross at Newcastle's John Hunter Hospital, said it *appeared excessive consumption of energy drinks had precipitated the heart attack*. He said Mr Penbross had no other

<sup>29</sup> V. Mahler. When the marketing targeting youth. In: Albin M, editor. *Alcohol and adolescence*. 2007. P. 132-50.

<sup>30</sup> KE Miller. Energy drinks, race and problem behaviors among college students. *J Adolesc Health* 2008; 43:490-7.

<sup>31</sup> <http://www.smh.com.au/articles/2007/08/18/1186857834956.html>

risk factors apart from smoking and had told him he previously experienced chest pain at times when his intake of the drinks was high. NSW Health has urged people to be extremely cautious of overdosing on stimulant products. Department spokesman Dr Robert Batey said consuming high levels of stimulants had the potential to cause heart attacks. A spokeswoman for Red Bull said she was unable to comment on Mr Penbross's case, but that the product label was clear in advising against excessive consumption. She said labeling requirements for energy drinks were set by the Federal Government.”

#### Five cases of fatal overdose from caffeine-containing ‘look-alike’ drugs<sup>32</sup>

- **Monster Energy Drink Side Effects<sup>33</sup> – Chandramita Bora – November 23, 2010** – “Like other energy drinks, the monster energy drink is also taken to raise the level of energy, reduce fatigue and increase mental alertness. However, overuse or injudicious use can cause several side effects, which are discussed in this article. 8 oz or 240 ml of the original drink contains 100 calories, 27 gm total carbohydrates, 27 gm sugar, 1000 mg taurine, 60 mg vitamin C, 20 mg niacin, 2 mg vitamin B6, 6 mg vitamin B12, 1.7 mg riboflavin, 180 mg sodium, 200 mg panax ginseng and 2500 mg energy blend. The low carb drink is low in carbohydrates and calories. 8 oz of low carb monster energy drink contains about 10 calories, 3 gm total carbohydrates, 3 gm sugar, 2 mg vitamin B6, 60 mg vitamin C, 20 mg niacin, 60 mcg vitamin B12, 1.7 mg riboflavin, 1000 mg taurine, 180 mg sodium, 20 mg panax ginseng and 2500 mg energy blend.”

#### Wired: energy drinks, jock identity, masculine norms, and risk taking<sup>34</sup>

- “The author surveyed 795 undergraduate students enrolled in introductory-level courses at a public university. The author conducted linear regression analyses of energy-drink consumption frequencies on sociodemographic characteristics, jock identity, masculine norms, and risk-taking behavior. Of participants, 39% consumed an energy drink in the past month, with more frequent use by men (2.49 d/month) than by women (1.22 d/month).”
- “In the past few years, health officials have grown concerned about the use of energy drinks as mixers with alcoholic beverages; for instance, the Web site [Drinknation.com](http://Drinknation.com) offers recipes for an impressive 201 Red Bull-based alcoholic concoctions.<sup>35</sup> Increasingly popular among clubgoers, these cocktails are widely believed to increase enjoyment while reducing the symptomatic lethargy and physical impairment associated with drunkenness. To my knowledge, only Ferreira et al<sup>36</sup> have tested the interaction of energy drinks and alcohol. Compared with alcohol alone, ingestion of the mixed cocktail

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<sup>32</sup> <http://www.ncbi.nlm.nih.gov/pubmed/4010239>

<sup>33</sup> <http://www.buzzle.com/articles/monster-energy-drink-side-effects.html>

<sup>34</sup> <http://www.ncbi.nlm.nih.gov/pubmed/18400659>

<sup>35</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2562885/?tool=pubmed#R17>

<sup>36</sup> <http://www.ncbi.nlm.nih.gov/pubmed/16573577>

reduced perceptions of impaired coordination, headache, weakness, and dry mouth, whereas objective impairment of visual reaction time, motor coordination, and breath alcohol concentration remained unaffected. *Combining the stimulant effect of caffeine and the depressant effect of alcohol may lead drinkers (and the bartenders who determine when they will no longer be served) to underestimate their level of intoxication, with potentially lethal consequences.*"

#### Risks of energy drinks in youths<sup>37</sup> (Nov 2010)

- "However, issues related to energy drink ingredients and the potential for adverse health consequences remain to be elucidated. This aim of the present paper is to review the current knowledge on putative adverse effects of energy drinks, especially in youths."
- "Except caffeine, the effects of energy drink ingredients on physical and cognitive performances remain controversial. Researchers identified moderate positive effects of energy drinks on performances, whereas others found contrary results."
- "The practice of consuming great amounts of energy drink with alcohol is considered by many teenagers and students a primary locus to socialize and to meet people. This pattern of energy drink consumption explains the enhanced risk of both caffeine and alcohol toxicity in youths. Twenty five to 40% of young people report consumption of energy drink with alcohol while partying. However, even after adjusting for alcohol consumption, students who consume alcohol mixed with energy drinks had dramatically higher rates of serious alcohol-related consequences. It has been reported that the subjective perceptions of some symptoms of alcohol intoxication are *less intense* after the combined ingestion of the alcohol plus energy drink; however, these effects are not detected in objective measures of motor coordination and visual reaction time."

#### Wrongful Death vs. 5-Hour Energy Lawsuit<sup>38</sup>

- A [wrongful death lawsuit](#) has been filed against the makers of 5-Hour Energy, the popular 2-ounce energy drink, which one family says caused a heart attack for a 27-year old Tennessee man. The product liability lawsuit was filed by Monica Hassell, the wife of Antonio Hassell, in U.S. District Court in Tennessee late last month against Living Essentials, the company that manufactures 5-Hour Energy. According to the complaint, Hassell had been drinking the shot-like concoctions to stay awake during late shifts at a warehouse. Hassell suffered a heart attack on August 2, 2009, while playing basketball, after about a month of drinking 5-Hour Energy on a regular basis. He died about seven months later. The lawsuit alleges that Living Essentials failed to properly warn

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<sup>37</sup> <http://www.ncbi.nlm.nih.gov/pubmed/20926266>

<sup>38</sup> <http://www.aboutlawsuits.com/5-hour-energy-wrongful-death-lawsuit-12261/>  
<http://www.lawyersandsettlements.com/articles/frs-healthy-energy/interview-frs-energy-healthy-3-15517.html>

consumers about the health risks of 5-Hour Energy or its potentially lethal side effects. The lawsuit claims that the labels of the energy drinks are designed to lead consumers to believe that there has been pre-marketing clinical testing on the safety of the products, which is untrue. According to the 5-Hour Energy Drink lawsuit, Hassell's doctors determined that the drink, which contains a combination of caffeine, taurine, glucuronolactone, malic acid, and other ingredients, *was the sole cause for his heart attack*. Living Essentials has kept the specific recipe for the drink a secret, but the lawsuit claims that the ingredients as listed are known to increase the risk of strokes, blood clots, heart attacks and other illnesses.

- *Nashville, TN*: Alcoholic Energy Drinks have made headlines lately: a few months ago the FDA ordered seven manufacturers to either change their recipe or remove their products from the marketplace, and a number of lawsuits followed, including a wrongful death suit. But healthy energy drinks—such as FRS healthy energy and 5-hour ENERGY—have also been the subject of lawsuits, including wrongful death.
- The 5-hour energy drink maker, Living Essentials and Bio Clinical Development Inc., isn't alone in its deceptive advertising and marketing tactics, nor is it the only company that has been slapped with a lawsuit over its *deceptive health claims*.
- The recent wrongful death lawsuit says that Living Essentials **refuses to disclose the exact ingredients in their product**, saying only that it contains "about as much caffeine as in a cup of coffee." <sup>39</sup>The suit argues that the defendants should have disclosed medical information about the drink, including side effects and the risk of heart attacks and strokes... How many lawsuits will it take before the FDA cracks down on companies that continually dupe the public—from weight loss claims to immunity support? How many more wrongful death lawsuits need to be filed before these "energy drinks" will be required to contain medical information on the labels, including side effects and the risk of heart attacks and strokes? Perhaps in the near future, energy drinks will come with black box warnings...
- Dr. Allen Taylor, chief of cardiology at Georgetown University Hospital believes that it's not worth the risk to let children and young adults consume these energy drinks. He said "Between the caffeine, the sugar, its effects on blood pressure, and potential adverse effects, I think it's really difficult to justify a case for children and young adults to be using these substances right now." Even though this information has been provided by the medical community, many critics feel that these energy drinks are marketed directly to this at-risk group.<sup>40</sup>

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<sup>39</sup> <http://www.dailyfinance.com/2010/10/29/energy-drinks-faulted-for-not-disclosing-excessive-caffeine/> Two-thirds of the energy drink brands on the market do not disclose their caffeine content and the ones that do so, some ignore the threshold for what is considered excessive, researchers at GoodGuide.com

<sup>40</sup> <http://www.marcusandmack.com/blog/2012/05/energy-drinks-and-teens-a-deadly-mix.shtml>  
<http://www.thesportjournal.org/article/energy-drinks-effects-student-athletes-and-implications-athletic-departments>

**What If There Was a Way to Feel Intoxicated and Wide-Awake at the Same Time?  
Would You Do It, Even If There Was Severe Health Risks?<sup>41</sup>**

- It is no surprise why the combination of caffeine and alcohol is so popular. Adding energy drinks allows a person to drink more alcohol without passing out and party longer. It gives young drinkers the illusion that they are invincible...The American Dietetic Association considers 200–300 mg of caffeine a day to be a moderate amount... Popular energy drinks such as Red Bull, Full Throttle, Rockstar and Monster are a common choice of "mixers" for alcoholic beverages, but may pose health risks... They think they are less drunk because they are more awake. A study found that drinking alcohol and Red Bull together significantly reduces the perception of headache, weakness, dry mouth and impairment of motor coordination.

**Energy Drinks' Effects on Student-Athletes and Implications for Athletic Departments<sup>42</sup>**

- Worldwide, the market for so-called energy drinks has grown exponentially in the last decade. The primary targets of the industry's marketing campaigns *are young adults*, and college athletes are frequent consumers of the products... As a result, university and college athletes are frequent consumers of the products. The effects of these beverages can be quite significant... On college campuses today, students commonly use energy drinks as an ingredient in alcoholic cocktails...
- According to Cohen (2008), the marketing research firm A. C. Nielsen indicated that worldwide sales of the drinks rose from \$3.5 billion in 2006 to \$4.7 billion in 2007 (\$ 9 billion in 2011). This speaks volumes for the drinks' profitability and potential new markets, chiefly within the young teen to young adult demographic. Many studies have analyzed extended use of caffeine, generating mixed findings—although moderate use of caffeine is commonly accepted to pose little health risk. Fornicola (2007) found that on average, adults consumed *200 mg of caffeine per day*, the amount in about two cups of coffee.... Red Bull and Rock Star advise consumers not to exceed 500 ml of the product per day, while Monster recommends no more than 1,000 ml per day.
- The American Heart Association issued an alert in November 2007 concerning dangers energy drinks pose to those with known cardiovascular issues (Lofshult, 2008)... There remains considerable concern regarding the negative effects of energy drinks. Emergency room visits arising from energy drink consumption are becoming commonplace. For example, *Child Health Alert* reported a 23-year-old was hospitalized with a dangerously high heart rate... Several highly publicized deaths linked to energy drinks have fueled ongoing suspicion. In one such tragedy, a healthy 18-year-old Irish

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<sup>41</sup> <http://www.jurewitz.com/library/caffeine-alcohol-effects.html>

<sup>42</sup> <http://www.thesportjournal.org/article/energy-drinks-effects-student-athletes-and-implications-athletic-departments>

basketball player experienced cardiac arrest after consuming four cans of Red Bull prior to a game (Laquale, 2007).

- It is not clear how many adults consume energy drinks, but it is certain that, despite manufacturers' warnings, many children are regular consumers... But surprisingly, there is currently no restriction on children's purchase of energy drinks, *even though caffeine's effects are more pronounced in children than adults, due to body size and tolerance. It is furthermore clear that children and adolescents contribute significantly to the total market.* Some schools have banned energy drinks from school property, and many jurisdictions are *considering attempting to restrict energy drink sales to children...* The language and images of such advertising are not directed at mature adults. If anything, the marketing of energy drinks removes all ambiguity about whom these products are meant to appeal to: teens and young adults.
- *Miller further suggested that, in their appeal to the young, energy drink marketing strategies are similar to those of the tobacco and alcohol industry (p. 488).* Such an affinity between a "healthy natural product" and smoking and drinking is incongruous...Malinauskas et al. (2007) found that 51% of college students consume energy drinks... Consuming energy drinks along with alcohol lessens the subjective sense of intoxication (O'Brien, McCoy, Rhodes, Wagoner, & Wolfson, 2008). This means one can consume more alcohol than usual because one doesn't feel intoxicated... Although energy drink companies may caution consumers against mixing the products with alcohol, young people, especially, do so. According to Miller (2008), the website Drinknation.com contained 201 Red Bull-based alcoholic beverage recipes.

#### Disclaimer

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