

# Alcohol, Energy Drinks, and Youth: A Dangerous Mix



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The Marin Institute fights to protect the public from the impact of the alcohol industry's negative practices. We monitor and expose the alcohol industry's harmful actions related to products, promotions and social influence, and support communities in their efforts to reject these damaging activities.

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## Executive Summary

Public health and safety officials have become alarmed by the newest entry into the world of alcoholic beverages. Alcoholic energy drinks are prepackaged beverages that contain not only alcohol but also caffeine and other stimulants. Earlier this year, 29 state attorneys general signed a letter to Anheuser-Busch expressing their concern about Spykes, an alcoholic energy drink packaged in colorful 2-ounce bottles with obvious appeal to youth. The objections of law enforcement officials as well as parents and leading public health organizations caused Anheuser-Busch to pull Spykes from the market. But the story does not end there. Many other alcoholic energy drinks are still on the market.

Despite the sharp increase in sales of alcoholic energy drinks, their appeal to underage drinkers, and the health concerns involved in mixing stimulants with alcohol, research on the potential dangers of these products remains limited. This study reviews what data is available and takes an in-depth look at the alcohol industry's marketing practices promoting the consumption of alcoholic energy drinks. The results, while preliminary, are unsettling. Both scientists and policymakers should focus increased attention on this emerging product category.

## Targeting Youth

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To understand how alcoholic energy drinks are marketed, it is critical to examine the popularity of nonalcoholic energy drinks among youth. Teenagers and young adults are the core consumer group for these products. Thirty-one percent of 12- to 17-year-olds and 34 percent of 18- to 24-year-olds report regular consumption of energy drinks. Nonalcoholic energy drink producers promote youth consumption using "grassroots" level marketing strategies, as opposed to traditional channels (such as television, radio, magazine, and outdoor advertising). Companies are looking for "one-on-one relationships" gained through events, extreme sports sponsorships, Internet interactions, text messaging, and communication among users on Internet sites such as MySpace and Facebook.

Alcoholic energy drink producers have built on the popularity of nonalcoholic energy drinks in two ways: 1) promoting the mixing of energy drink products with alcohol, and 2) marketing premixed alcoholic energy drinks. Efforts to encourage the mixing of alcohol with energy drinks serve as a stepping stone to building a separate beverage category of premixed alcoholic energy drinks.

Miller Brewing Company and Anheuser-Busch, the two largest U.S. brewers, are the leading producers of this new alcoholic beverage category, with brands that include Sparks, Tilt, and Bud Extra. Their marketing tactics mirror those used for nonalcoholic energy drinks: "grassroots" consumer strategies; images and messages that promote their association with partying and other high energy activities; and containers that have sizes, shapes, and graphics similar to their nonalcoholic cousins. The similarities in containers create the potential for confusion among consumers, retailers, parents, law enforcement officers, and others regarding which products contain alcohol and which do not. Alcoholic energy drinks are also a cheap alternative to purchasing alcoholic beverages and energy drinks separately. Taken together, these strategies strongly suggest that alcohol companies are marketing alcoholic energy drinks to young people.

## Health Concerns

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Although there is debate regarding the overall risks and benefits of energy drink and moderate caffeine consumption, health researchers agree that caffeine consumption can have adverse health consequences, particularly at high doses. Among the most common negative effects are increased anxiety, panic attacks, increased blood pressure, increased gastric acid, bowel irritability, and insomnia.

With the rising popularity of energy drinks and with more young people ingesting high levels of caffeine, more serious health problems are now being reported in the nation's poison centers, while reports from other countries suggest potentially serious consequences from caffeine overdose.

Although the research community has not yet fully confronted the potential health risks associated with adding alcohol to energy drinks, the studies that have been done suggest serious cause for concern. Caffeine, a stimulant, masks the intoxicating effects of alcohol, which may lead to increased risk-taking. Young people are therefore particularly vulnerable to increased problems from ingesting these products, since they are more likely to take risks than adults and to suffer high rates of alcohol problems, including alcohol-related traffic accidents, violence, sexual assault, and suicide.

## A Call to Action

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The available research suggests that alcoholic energy drinks create a dangerous mix. Yet the alcohol industry markets the beverages with messages that fail to alert users to the potential for misjudging one's intoxication. Indeed, these messages irresponsibly suggest that the beverages will enhance alertness and energy.

Action is needed from both the alcohol industry and from governments at all levels. Alcoholic beverage producers should discontinue the production of alcoholic energy drinks pending further scientific study that demonstrates the products' safety, particularly for young people. The federal government should conduct investigations into the marketing of these products, conduct research to determine any link to both short- and long-term health problems, particularly among young people, and initiate a public information campaign to alert consumers, parents, and law enforcement to the risks associated with mixing alcohol and energy drinks. State and local governments should not wait for federal action and should initiate their own investigations, research, and public information campaigns.

Community groups, parents, law enforcement agencies, and citizens also need to take action, calling for industry marketing reforms and governmental action. The alcohol industry's marketing of alcoholic energy drinks should be vigorously opposed before the products become even more popular. To risk delaying action until further studies can be conducted is to experiment with the health of young people. Furthermore, past experience shows that a swift response is critical or the economic benefits associated with alcoholic energy drinks' sale will become entrenched, making regulation far more difficult.

## Introduction

Alcoholic energy drinks—prepackaged beverages that contain alcohol, caffeine, and other stimulants—are the newest entries into the world of alcoholic beverages. Their introduction has alarmed public health and safety officials, as illustrated by the reaction to Spykes, a 12 percent alcoholic energy drink packaged in 2-ounce bottles that come in flavors such as “hot chocolate” and “spicy mango.” On May 10, 2007, 29 state attorneys general sent a letter to Anheuser-Busch, Spykes’s producer, which stated in part:

Given the documented health and safety risks of consuming alcohol in combination with caffeine or other stimulants, Anheuser-Busch’s decision to introduce and promote these alcoholic energy drinks is extremely troubling. Young people are heavy consumers of non-alcoholic energy drinks, and the manufacturers of those products explicitly target the teenage market. Promoting alcoholic beverages through the use of ingredients, packaging features, logos and marketing messages that mimic those of nonalcoholic refreshments overtly capitalizes on the youth marketing that already exists for drinks that may be legally purchased by underage consumers.<sup>1</sup>

The uproar from not only a majority of states’ chief law enforcement officials but also parents and leading organizations and officials in public health, education, and nutrition led to Anheuser-Busch’s decision to pull Spykes from the market.<sup>2</sup> Yet, despite this concession, the alcohol industry, including Anheuser-Busch, has introduced numerous other alcoholic energy drinks, is using the very marketing tactics criticized by the attorneys general, and views these drinks as having great market-growth potential. This report asks the following questions:

- How are these products marketed?
- How are they connected to nonalcoholic energy drinks?
- Does combining alcohol with caffeine and other stimulants create risks beyond those associated with alcohol consumption alone?
- Do these products create particular risks for young people?
- If the concerns being raised are justified, what should be done?

Remarkably, only limited research is available to guide us, despite the explosion in sales of nonalcoholic energy drinks and the health concerns of mixing drinks with alcohol. We have reviewed what research is available and conducted an in-depth examination of the alcohol industry’s marketing practices promoting the consumption of alcoholic energy drinks.

The report is divided into five sections: (1) the emergence of the nonalcoholic energy drink market, (2) the introduction and marketing of alcoholic energy drinks, (3) research on the health and safety risks of alcoholic energy drinks, (4) governmental responses to health and safety concerns, and (5) recommendations for action. Our goal is to provide enough information for an informed debate and the development of public policies to protect the public’s health, particularly America’s youth, who may face heightened risks of harm from these beverages.

## Energy Drinks

### Rapidly Expanding Market

The story of alcoholic energy drinks begins with the introduction and rapidly developing popularity of nonalcoholic energy drinks in the marketplace. High-caffeine soft drinks have existed in the United States since at least the 1980s beginning with Jolt Cola. Energy drinks, which have caffeine as their primary “energy” component, began being marketed as a separate beverage category in the United States in 1997 with the introduction of the Austrian import Red Bull.<sup>3</sup> Energy drink consumption and sales have exploded since then, with more than \$3.2 billion in sales in 2006, a 516 percent inflation-adjusted increase since 2001.<sup>4</sup>

This explosion has encouraged a proliferation of new brands: as many as 500 new energy drink products were introduced worldwide in 2006.<sup>5</sup> Yet the market in the United States is dominated by five producers, which account for 93.8 percent of sales.<sup>6</sup> Although Red Bull’s share has been slipping, it still is by far the largest manufacturer, with 42.7 percent of the market, followed by Hansen Natural Corporation (Monster brands—16 percent), PepsiCo (SoBe and Amp brands—13.2 percent), Rockstar International (12.1 percent), and Coca-Cola (Full Throttle and Tab brands – 9.8 percent). Mintel International Group, a leading marketing research firm, anticipates continued,

although less dramatic, growth of 84 percent in sales by 2011.<sup>7</sup> It also predicts rapid consolidation of the industry. This market growth has largely come at the expense of soft drinks, and soft drink manufacturers such as Coca-Cola and Pepsi have responded by aggressively entering the market, developing new hybrid soda/energy drinks, shifting marketing strategies, and distributing and then buying up new brands.<sup>8</sup>

### **Teens: Driving the Market for Nonalcoholic Energy Drinks**

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Teenagers and young adults are undoubtedly the core consumer group for energy drinks. This reality is a cause for concern, given the recent emergence of alcoholic energy drinks and the similarity in the packaging between the two categories. There is a paucity of epidemiological studies assessing the demographics of energy drink consumers, but data are available from market surveys. Mintel International Group has conducted the most comprehensive study, relying on Simmons Teen Survey data (a comprehensive analysis of teen purchasing behavior).<sup>9</sup> Thirty-one percent of 12- to 17-year-olds and 34 percent of 18- to 24-year-olds report regular consumption of energy drinks, compared with 22 percent of 25- to 34-year-olds, with rates decreasing rapidly with age. Only 3 percent of seniors 65 years of age and older report any consumption.

Consumption begins at very early ages: 28 percent of 12- to 14-year-olds report regular consumption of energy drinks. Teen consumption has grown rapidly since 2002. For 12- to 17-year-olds, rates increased from 18 percent in 2002 to 31 percent in 2006.

### **Marketing Strategies Promote Youth Consumption**

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Given the increasing concerns over alcoholic energy drinks, it is critical to understand how the nonalcoholic counterparts are marketed. Of course, it is legal for children to purchase energy drinks, but as discussed in the next section, alcohol companies appear to be mimicking the marketing strategies for nonalcoholic energy drinks, thereby capitalizing on the popularity of nonalcoholic energy drinks among youth.

With such a young core consumer base, energy drink marketing focuses on youth themes and strategies. Mintel International Group attributes the popularity of such themes and strategies to their association with teenagers' drive for rebellion, risk taking, and adventure seeking. Marketers use dramatic product names (e.g., Cocaine, DareDevil, Bawls, Pimp Juice, Rip It, and Monster Assault), edgy graphics on containers, and sponsorships of extreme sporting events and lifestyles, such as wakeboarding, skateboarding, motocross, and surfing.<sup>10</sup>

Manufacturers support the marketing messages and themes with higher concentrations of caffeine, increasing the "jolt" or stimulant effect of the products. Many energy drinks contain substantially higher levels of caffeine than do servings of coffee. Youth appeal is further supported through the easy access of energy drinks at convenience stores, an important venue for teen purchasing.

The marketing strategies are communicated at a "grass-roots" level, as opposed to traditional channels (such as television, radio, magazine, and outdoor advertising), because companies are looking for "one-on-one relationships" gained through events, extreme sports sponsorships, Internet interactions, text messaging, and communication among users on Internet sites such as MySpace and Facebook. For example, the Monster brand's "ambassadors" give away free samples at sporting events, concerts, and other teen venues. Red Bull owns teams such as the New York Red Bulls soccer team and plans to start its own NASCAR team.

Mintel reports that these nontraditional forms of marketing are critical to energy drink promotions, highlighting, in particular, consumer interactions on the Internet:

The most current trend in energy drinks marketing is from its users in cyberspace. Users of most brands have created their myspace.com pages where users are shown drinking energy drinks. For example, on [www.myspace.com/drinkcocaine](http://www.myspace.com/drinkcocaine), there are many pictures of teens drinking Cocaine energy drink. This kind of exposure is a boon to marketers, because users are in effect advertising the products for free. Moreover, it adds street credibility and reflects strong grassroots support.<sup>11</sup>

## Enter the Alcohol Industry

### Mixing Alcohol and Red Bull in Bars

Premixed alcoholic energy drinks have their roots in bars and nightclubs, where bartenders began mixing Red Bull with vodka and other distilled spirits, a common practice in Europe before it took hold here. Both alcohol and energy drink companies encourage this practice. Although Red Bull denies it, the company's marketing practices suggest otherwise. Red Bull's director of communications stated in 2001 that Red Bull is perfect for nightclubs and bars. "People at nightclubs don't want to be there for 20 minutes; they want to stay all night to socialize and dance. Red Bull gives them energy to do that," he explained.<sup>12</sup> Red Bull encourages alcohol mixers with logo stickers, menus, cross-promotions, and contests with trips and prizes for bartenders and cocktail servers. A bar owner in Manhattan has attributed improved Red Bull sales to these and similar promotions. He says: "The young, American downtown crowd has started to drink it and I can easily charge \$10 for a vodka and Red Bull."<sup>13</sup> The company also states that it is unconcerned about any potential harm.<sup>14</sup>

SoBe's nonalcoholic Adrenaline Rush is billed as a "maximum energy supplement" with the tagline "Get it Up, Keep it Up," a message geared toward young consumers. Recognizing the trend toward mixing energy drinks with alcohol in bars, the company is planning promotions with Adrenaline "nurses" in nightclubs. John Bello, CEO of the former South Beach Beverage Company (since acquired by PepsiCo), which is the producer of Adrenaline Rush, states: "Young people want to get a buzz and stay up all night. We make no pretense that this is a health drink. This is the party market."<sup>15</sup>

Alcohol companies have adopted the same strategy for their traditional alcohol products, encouraging consumers to mix them with energy drinks. For example, the Diageo product Captain Morgan Tattoo (black, spiced rum) has only one recipe on its website, for "Ink Drop," which is to mix 1.5 ounces of rum with 3 ounces of energy drink, and "serve straight."<sup>16</sup>

Anheuser-Busch has been the leading promoter of energy drink mixing among alcohol companies. The world's largest brewer entered the nonalcoholic energy drink market in

2006 with a product called 180, which refers to how drinkers will experience a 180-degree turnaround or lift in their energy levels. From the beginning, the combination with alcohol has been key to product success. One of Anheuser-Busch's wholesalers has posted recipes for combining 180 with rum, vodka, tequila, and other alcoholic products, and the company is promoting combining the energy drink with its new product Jekyll & Hyde, a distilled spirit.<sup>17</sup> Anheuser-Busch distributes 180 through its extensive distribution network, in particular, trendy high-end bars and restaurants, along with convenience stores, the latter with extensive point-of-sale items. In doing so, Anheuser-Busch promotes the connection between energy drinks and alcohol. Anheuser-Busch's vice president explains that with 180 the company is capitalizing on the energy drink trend, "with usage occasions spread throughout the day, from morning 'pick me-ups' to nightclubbing."<sup>18</sup>

In February 2007, Anheuser-Busch increased its ties with nonalcoholic energy drinks when it announced a deal with Monster's manufacturer, Hansen Natural. Anheuser-Busch will manage the sales, distribution, and merchandising of Monster Energy drinks at bars, restaurants, and nightclubs. (The company had already been distributing Hansen drinks in grocery and convenience stores.) Most of the 600 independent distributors that work with Anheuser-Busch nationwide will have the choice to distribute Monster Energy to what's known as "on-premise" locations. This will enhance Hansen's ability to compete with Red Bull in bars, which accounts for 13 percent of energy drink sales.<sup>19</sup>

### Introduction of Premixed Energy Drinks

The efforts to encourage the mixing of alcohol with energy drinks serve as a stepping stone to building a separate beverage category of premixed alcoholic energy drinks. According to Mintel:

Growth in the popularity of energy drinks can be attributed to bars and clubs, where energy drinks have been used as mixers. Now consumers can find pre-mixed alcoholic energy drinks at a nearby convenience store or grocery store. Alcoholic beverage (especially beer) manufacturers are increasingly launching products that are likely to appeal to young adults aged 21–24 who are most likely to drink beer and distilled spirits—ideal alcoholic drinks to mix with energy drinks.<sup>20</sup>



Another article makes a similar point: “Manufacturers of the new alcoholic drinks are hoping to mirror the success of the nonalcoholic energy drinks, which have challenged traditional soft drinks.”<sup>21</sup> Sales of carbonated soft drinks have been falling in the United States, sending manufacturers scrambling for alternative products. Alcoholic beverage makers are seizing an opportunity to capitalize on the increasing popularity of energy drinks.

The trend began in 2000 with the introduction of Agwa (distilled from coca leaves), which was billed as the “world’s first alcoholic energy drink.” From the start, Agwa’s marketing promoted its druglike effects, suggesting that it increased sexual prowess and earning the nickname “Vi-Agwa.” The drink’s marketing strategist was quoted: “We cannot bottle cocaine. But certainly people who have tried it have enjoyed amazing effects with it.”<sup>22</sup> (The product’s website attempts to dispel “rumors” that the drink contains cocaine.)

Hansen Natural introduced the product Hard E also in 2000. Although it was discontinued in 2004,<sup>23</sup> the marketing strategy is revealing for the category. By 2000, Hansen had already established itself as a serious competitor to Red Bull with its Monster line of energy drinks. Hard E was a neon yellow drink that started with a beer base and mixed in vodka, flavorings, and “ingredients similar to Hansen’s Energy drink,” including ginseng and vitamins.<sup>24</sup> One trade article describes how the Hard E product launch was aimed at Generation Xers and the “20-something crowd,” with taglines such as “party Hard E” and creating “a new kind of buzz.” Ray LaRue, vice president of sales at Hansen, said research told the company that college students were already buying their energy drinks at convenience stores, purchasing the vodka separately, and then mixing the two in a flask for use on the dance floor. “To promote Hard E, LaRue said that Hansen has been designing marketing promotions in nightclubs in large cities, such as Excalibur in Chicago, and at legal raves, all-night parties in empty warehouses that are popular with kids today.”<sup>25</sup>

These two brands started a trend that has picked up momentum in the last six years, with numerous small producers introducing new products. In a sign that the industry sees the category as having potential, Miller and Anheuser-Busch, the two largest U.S. brewers, have entered the market. Miller purchased Sparks in 2006 for \$215 million. Sparks, the leading alcoholic energy drink on the market, was created by McKenzie River Partners in 2002, a start-up firm known for controversial, aggressive marketing.<sup>26</sup>

Anheuser-Busch introduced three malt-based energy drinks—Tilt, B to the E (now called Bud Extra), and Spykes. (As mentioned earlier, the company withdrew Spykes in May 2007 under public pressure.)

Anheuser-Busch describes Tilt as being for “contemporary adults [who] are looking for innovative beverages that fit into their fast-paced, highly social lifestyles. Tilt was developed with this in mind because it is suited to a variety of drinking occasions.”<sup>27</sup> While the original alcohol content was 6 percent, more recently, Anheuser-Busch announced a new Tilt variety that contains 8 percent alcohol, predicting that that the product would be “a strong competitor” in the category.<sup>28</sup>

### Targeting Young People with a Cheap Alternative to Mixed Drinks

Producers of alcoholic energy drinks are using several tactics to promote their brands, many of which mirror the marketing of nonalcoholic energy drinks. The first tactic involves price: premixed alcoholic energy drinks provide a cheap alternative to purchasing the two types of beverages separately. (Youth are particularly sensitive to price.) In fact, in at least some convenience stores in California, alcoholic energy drinks are cheaper than nonalcoholic energy drinks.

**Price Comparison**—Three alcoholic brands cost about 25 percent less than three nonalcoholic brands.<sup>29</sup>

#### **Alcoholic Brands**

■ Rockstar 21	\$1.59
■ Sparks	\$1.53
■ Tilt	\$1.53

#### **Nonalcoholic Brands**

■ Rockstar Juiced	\$2.03
■ Lost Energy	\$2.07
■ SoBe Adrenaline Rush	\$2.03

One analysis (or “review”) of Sparks described it as a direct competitor to drinks that mix Red Bull and vodka:

Pitched as an alternative to ‘so last year’ Red Bull-and-vodka combinations, a fresh drink on the market proposes to be the top choice to get your alcohol fix with a zap of energy. Launched in 8 oz. steel cans, Sparks is quickly gaining a reputation amongst partygoers and trendsetters as the newest addition to the energy-drink market. The 6% alcohol content doesn’t deter the

mainstream crowd; shaped like a battery, the vibrant orange and metal silver cans are almost toy-like in composition.<sup>30</sup>

The *Phoenix*, a Boston entertainment newspaper, described the advantages of Sparks's cheap price compared with the cost of Red Bull and vodka, despite the bad taste:

But people aren't knocking back Sparks for its flavor. It tastes like carbonated cough syrup, sickly sweet, with a wince-inducing, orange-lemon flavor that takes a few sips to stomach. But at \$1.50 per 16-ounce can, about 60 cents cheaper than an 8.3-ounce can of Red Bull, it packs the triple-buzz punch of alcohol, taurine, and caffeine for a much lower price than a Red Bull and vodka—which can cost anywhere between four and eight bucks, depending on the bar.<sup>31</sup>

Another sign that the premixed alcoholic energy drink category is targeted to young people as a low-cost alternative to Red Bull and vodka comes from an article about the development of a product called Catalyst, just released in 2006. The product was created by two graduates of the University of California, Santa Barbara, who right after leaving school started experimenting with combining alcohol with ingredients such as caffeine, taurine, and L-carnitine. At first they added vodka because they had combined alcohol with energy drinks, like Red Bull and vodka while they were still in college. Vodka was soon discounted as an ingredient option because it was too expensive; the inventors wanted college students to be able to purchase the drink for a low cost. After months of experimentation, the ingredients for Catalyst were refined into a malt liquor and energy formula. After finalizing the ingredients for Catalyst, the formula was then sent to a taste company to change the drink's flavor.<sup>32</sup>

### **Creating Brand Confusion with Nonalcoholic Energy Drinks**

Alcohol producers promote the close association of their products with energy drinks by mimicking their containers, including size, shape, and graphics. These similarities create the potential for confusion among consumers, retailers, parents, law enforcement officers, and others regarding which products contain alcohol and which do not.

One product that stands out in this respect is Rockstar. There are several versions of the nonalcoholic variety, including Rockstar Original, Sugar-Free Rockstar,

Rockstar Zero Carb, Rockstar Juiced Plus Guava, and Rockstar Juiced Plus Juice. The drink's tagline is "Party Like a Rock Star." The alcoholic version is called Rockstar 21, and lining up the cans it is nearly impossible to tell them apart. Rockstar is the No. 3 brand of nonalcoholic energy drinks, doubling its sales from 2004 to 2006. Coca-Cola started distributing nonalcoholic Rockstar products in 2005; sales grew from \$1 million in 2001 to \$77 million in 2006. The potential for confusion is particularly troubling when one considers that nonalcoholic Rockstar drinkers (both male and female) are reportedly more likely to enjoy taking risks and to drive faster than normal.<sup>33</sup>

In addition, marketing messages used for alcoholic energy drinks frequently mirror those used by their nonalcoholic cousins: images of rocket ships and exploding nuclear reactors; images and slogans referencing risk taking, sports, and all-night partying. Explicit sexual imagery or messages are often included, suggesting that the products can lead to sexual success for males, particularly in party situations. The messages are communicated primarily through the same channels used by energy drink marketers, with emphasis on nontraditional media: Internet sites, chat rooms, sporting event sponsorships, and the like. Consumer-to-consumer communication on Internet sites such as MySpace often involving underage drinkers is also occurring.

Moreover, in the first five months of 2007, the Kentucky Office of Alcoholic Beverage Control cited 25 clerks for selling alcoholic energy drinks to minors in that state. In the news account, the agency said the situation was especially troublesome because the drinks often contain higher alcoholic content than most other malt beverages. "This new line of alcoholic beverage product is extremely similar in look and feel to the popular energy drinks that contain no alcohol," said Chris Lilly, executive director of the Office of Alcoholic Beverage Control. "Our youth are at risk when clerks and retailers cannot differentiate between non-alcoholic and alcoholic beverages being sold."<sup>34</sup>

In Utah, health advocates are concerned enough about the confusion that they are expected to lobby Utah lawmakers for a change in the labeling law to prevent mistaken sales to minors.<sup>35</sup> A bill to require special labels on alcoholic beverage containers that may be confused with nonalcoholic beverages is now being considered by the California legislature.<sup>36</sup>



## Alcoholic Energy Drinks and Health: What Are The Risks?

Energy drinks, and now alcoholic energy drinks, constitute a new market phenomenon, viewed by producers and marketers as having great potential for increasing sales and profits. But what are the potential risks of drinking beverages with high levels of caffeine, other stimulants, and sweeteners, particularly to youth? And what added risks are associated with the combination of alcohol and caffeine? Unfortunately, public health researchers have largely ignored these questions. In fact, researchers have given more attention to the potential health benefits of energy drinks than to their potential for harm. This section provides an overview of the research that is currently available.

### Do Energy Drinks Improve Performance and Health?

The starting point for assessing the health implications of alcoholic energy drinks is a review of research regarding the risks and benefits of energy drinks themselves. Alcohol companies are benefiting from the widely held belief that energy drinks do in fact improve energy, mental alertness, and physical fitness. Producers of energy drinks rely on and promote these health and fitness perceptions as an integral part of their marketing message. Red Bull, for example, describes its product as a “functional beverage” that increases endurance, concentration, and reaction speed and “vitalizes the body and mind.”<sup>44</sup> According to its website, top athletes, students, taxicab drivers, and drivers on long journeys are among its users—people who, because of their physical demands, are more likely to appreciate these attributes.<sup>45</sup>

Survey data from Mintel show that these claims are effectively reaching consumers. Seventy-six percent of users do so for an energy boost, while 35 percent report alertness as a motivator. Another 21 percent report hydration as a reason they consume energy drinks (apparently unaware of the diuretic effects of caffeine), while another 18 percent report health and nutrition as a motivator.

Red Bull and other energy drink companies attribute these positive characteristics to the interaction of multiple additives, including caffeine, guarana, taurine, ginseng, ginkgo, and glucuronolactone. Their stimulant/energy effects, however, come primarily from caffeine, the most

widely used mood-altering drug in the United States. Other additives are minor contributors in terms of the immediate effects felt by users.<sup>46</sup>

Red Bull contains about the same amount of caffeine as a cup of coffee, but twice as much as a can of Coca-Cola, despite having about 40 percent less liquid per serving than Coke. Many energy drinks have significantly higher levels of caffeine. Because energy drinks are usually consumed as a cold beverage similar to soft drinks and packaged for rapid consumption, the body experiences a rapid increase or rush in caffeine’s effects that is more pronounced than with coffee, which is usually served as a hot beverage and consumed more slowly.

Caffeine is popularly viewed as a relatively benign drug. Indeed, numerous scientific research studies report that the consumption of caffeine in general, and energy drinks in particular, results in some improvements in human mental and physical performance, including enhanced memory, reaction time, strength, and endurance.<sup>47</sup> Some studies have found enhanced performance associated with the ingestion specifically of Red Bull energy drink and have speculated that the results may be attributable not just to the caffeine but to the interaction of the drink’s ingredients.<sup>48</sup>

The studies cited above have been criticized on methodological grounds: they fail to account for caffeine withdrawal symptoms.<sup>49</sup> In other words, the studies are comparing individuals who are experiencing withdrawal symptoms with those who are not. Studies of caffeine consumption among nonusers and intermittent users who are likely not subject to withdrawal symptoms have found modest positive mood effects as well as some negative effects, although the reactions to the drug vary with each individual. One set of researchers summed up the research on caffeine’s beneficial effects as follows:

The caffeine-induced improvements in performance and mood often perceived by consumers do not represent net benefits, but rather reversal of the performance-degrading effects of caffeine withdrawal. It appears from a minority of low/non-consumer and long-term abstinence studies that there may be some modest improvement in mood, and perhaps performance, as an acute effect of caffeine when ingested in the absence of withdrawal. However, these effects are small and inconsequential compared with the effects attributable to withdrawal reversal.<sup>50</sup>

## Negative Health Impacts of Caffeine and Energy Drinks

Although there is debate regarding the benefits of energy drink and caffeine consumption, there is consensus among health researchers that caffeine consumption can have adverse health consequences, particularly at high doses. Among the most common negative effects are increased anxiety, panic attacks, increased blood pressure, increased gastric acid, bowel irritability, and insomnia. According to an article published by the American Society of Addiction Medicine, caffeine is considered an addictive drug under standard drug diagnosis criteria, and doses of 500 mg or more (four to eight servings of most energy drink brands) can result in caffeine intoxication.<sup>51</sup> Dependent users report an inability to quit or to cut down their consumption, despite having medical or psychological problems made worse by caffeine, and they report continued use of caffeine to avoid experiencing caffeine withdrawal symptoms. Contrary to popular belief and industry marketing claims, caffeine does not enhance sports performance and can have a negative impact at high doses because of its diuretic effects.<sup>52</sup>

With the rising popularity of energy drinks and with more young people ingesting high levels of caffeine, more serious health problems are now being reported in the nation's poison centers. One three-year study by a Chicago poison center found more than 250 cases of caffeine overdose, with 12 percent of those requiring hospitalization. Nearly two-thirds of the hospitalizations involved the intensive care unit.<sup>53</sup> Symptoms included insomnia, palpitations, tremors, sweating, nausea, vomiting, diarrhea, chest pains, and neurological symptoms. The average age of patients was 21.

Another poison center study focused on Redline, a high-potency nonalcoholic energy drink containing 250 mg of caffeine per serving. Nine cases requiring hospitalization related to this specific drink were reported in the California Poison Control System Database in a two-year period, with severe symptoms involved.<sup>54</sup>

Recently, a nonalcoholic energy drink called Spike Shooter, containing 300 mg of caffeine per serving, caused an uproar in Colorado Springs. In just one week, 18 high school students there reported becoming sick after drinking this product. The principal of the high school became so alarmed that she banned the drink on campus and convinced the nearby convenience store to stop selling it.

The product's label warns that those under 18 and anyone with health concerns should not use it. According to the news account:

Despite the warning, 14-year-old Rachel Woodrow, a diabetic, drank one can and started shaking. Two days later, she was hospitalized for a seizure. Rachel's parents say doctors told them the drink increased her metabolism and may have triggered the seizure. Rachel admits she didn't read the label. Rachel says, "I thought it would make me feel hyper and everything, but I didn't think I would have a seizure." Another student wanted to "get a little hyper" by drinking "spike shooter." Instead, Chris Weir says, "My stomach started to cramp up. I had a headache and I started vomiting."<sup>55</sup>

Systematic studies assessing the impact of caffeine overdose do not yet exist, although anecdotal reports from other countries suggest potentially serious consequences. In 2000, an 18-year-old Irish student died after sharing four cans of Red Bull with friends and then playing basketball. In 2001, Swedish officials investigated the deaths of three young people who had been drinking Red Bull; two of them had mixed the product with alcohol.<sup>56</sup> Ultimately, no clear connections in the deaths were made and the Swedish government simply recommended that energy drinks not be used to quench thirst or be combined with alcohol. Other countries have followed Sweden's lead and put restrictions on the availability of energy drinks. Norway has limited sales to drug stores, and France and Denmark have banned the drinks altogether.<sup>57</sup>

In summary, although research is limited, we can conclude that people who consume caffeine experience similar (although less severe) effects on the body—addiction, withdrawal, and tolerance—as do consumers of other psychoactive drugs. Potentially serious health consequences occur when the drugs are consumed in high doses, and these occurrences are being reported more frequently by health providers as high-potency energy drinks become more available in the market. Yet, despite these health concerns, the primary focus of most research literature on caffeine and energy drinks is on whether the beverages enhance performance, with recent research questioning the industry's marketing claims. Largely ignored are the health implications of sustained consumption of high levels of caffeine, particularly among youth, and the impact of combining energy drinks with alcohol.

## Research on the Health Effects of Other Energy Drink Additives

Energy drink manufacturers also make marketing claims (or rely on the claims of others) that ingredients besides caffeine (e.g., taurine, ginkgo, ginseng, and guarana) enhance energy drinks' positive effects, including improved mental alertness and physical performance. According to Mintel, one in three surveyed said they drink nonalcoholic energy drinks for ingredients other than caffeine, noting that "most of these ingredients consist of herbs such as guarana and taurine, which create a mysterious aura that intrigues some energy drink users."<sup>58</sup>

These marketing claims are not supported in the research literature. For example, taurine supplements may have modest beneficial health impacts in some carefully defined situations, depending on individual health conditions and dosage.<sup>59</sup> Energy drinks are a poor vehicle for gaining these possible benefits because dosage levels (which are often not disclosed) vary widely across beverages, their possible impacts depend on individual characteristics of users, and safe upper dosage limits have not been established.<sup>60</sup>

Similarly, ginkgo and ginseng are popular among many alternative health providers and advocates for their potential to improve long-term health. Research has not confirmed any long- or short-term health benefits of these supplements, and providing unspecified dosages of them in energy drinks is unlikely to have any immediate effect on mental or physical performance.<sup>61</sup> Guarana is a powerful herbal stimulant that enhances the stimulating effects of caffeine. Research does not suggest any mental or physical effects beyond those attributable to caffeine.<sup>62</sup>

In summary, despite manufacturers' claims, there is no scientific basis for concluding that the noncaffeine additives in energy drinks contribute to either long-term health benefits or short-term mental alertness and physical performance. They may create health risks, particularly since dosage levels are often not disclosed. As suggested by Mintel, these ingredients appear to be included mainly for marketing purposes.

## Health Implications of Adding Alcohol to Energy Drinks

Energy drinks clearly have potential negative health consequences, and marketing claims regarding their benefits have limited support in the research literature. What health and safety implications exist for adding alcohol to the mix?

Alcohol is a leading cause of death and injury, from driving under the influence of alcohol to violence, sexual assault, and suicide, and contributes to family and community disruption, poor school performance, and other psychological and sociological dysfunctions. These problems are particularly acute for young people. Does mixing alcohol with energy drinks create more risks than alcohol alone?

While the health research literature here is limited, the studies that do exist suggest cause for concern. At least four studies on humans have examined the interaction of some energy drink additives with alcohol. In one study,<sup>63</sup> researchers gave 15 subjects either doses of caffeine and alcohol or alcohol alone and then tested them on a variety of performance measures. Subjects who ingested caffeine reported reduced depressant effects of alcohol, but showed only limited improvement in motor skills over the other subjects.

The remaining three studies, using similar designs, found no such improvements. The second found that energy drinks did not reduce alcohol's deleterious impact on heart rate, oxygen uptake, and other physiological variables during strenuous exercise. The third found that while energy drinks did reduce some subjects' perception of alcohol intoxication, motor coordination, and visual reaction tests, they had no impact on alcohol's negative effects. The subjects' performance was significantly worse after ingesting the alcohol-energy drink mix despite the volunteers' perception of increased alertness and reduced intoxication.<sup>64</sup>

The fourth study also concluded that caffeine does not counteract alcohol's effect, but went a step further, assessing the importance of consumers' expectancies.<sup>65</sup> Those who were not aware of the caffeine in the beverage compensated to some degree for alcohol's intoxicating effects, while those who were aware of the presence of caffeine did not. In other words, the belief that caffeine will counteract the alcohol may undermine the capacity to compensate for one's intoxication.

These findings support a truism among alcoholism recovery and prevention specialists that drinking coffee does not in itself counteract intoxication but rather results in a "wide-awake drunk." Public health and alcohol treatment experts generally advise against mixing energy drinks and alcohol, because, as suggested by research that is available, the combination may lead intoxicated persons to conclude mistakenly that they are capable of potentially dangerous activities,

such as driving. These risks may be particularly acute for young people, who are inexperienced and more likely to engage in risk-taking behavior.

The available research focuses on short-term intoxicating effects. Alcohol is also associated with a wide array of negative long-term consequences, including alcoholism and alcohol abuse, liver damage, cancer, and birth defects. It can also adversely affect brain development among teenagers and young adults.<sup>66</sup> Does routine consumption of high doses of caffeine exacerbate these problems? The research literature has thus far failed to investigate the potential physiological risks of combining caffeine and alcohol, a stimulant and a depressant, over time. Likewise, there is no literature on the triple combination of alcohol, caffeine, and sweeteners, all of which have the potential for leading to addiction.<sup>67</sup>

### **Conclusion: Combining Alcohol and Caffeine Is Potentially Harmful**

As the available research suggests, alcoholic energy drinks create a dangerous mix. Yet the alcohol industry markets the beverages with messages that fail to alert users to the potential for misjudging one's intoxication and, instead, suggest that the beverages will enhance alertness and energy. The industry promotes their use precisely in circumstances that may lead to alcohol-related harm: in social situations that may involve driving, as an enhancement to sexual encounters, and in late-night partying environments that may result in violence. At least one industry executive is aware of the misleading marketing messages. According to Mark Hall, sales executive for Hansen, discussing its alcoholic energy drink Hard E: "The effect is a heightened level of awareness. You will get intoxicated at the same rate as with any other alcoholic beverage. The difference is that you will seem more alert and more awake."<sup>68</sup>

### **Governmental Responses to Public Health Concerns**

What government oversight exists to address these potential risks to public health and safety and potentially misleading and unfair marketing practices? The short answer is: very little.

Federal law prohibits labeling and advertising of malt beverages that is "false or, irrespective of falsity, or by ambiguity, omission, or inference, or by the addition of irrelevant ... matter tends to create a misleading impression."<sup>69</sup> In addition, health statements that "imply that a physical or psychological sensation results" from consuming an alcoholic

energy drink may be prohibited or may require a specific disclaimer or qualifying statement to ensure that they are not misleading.<sup>70</sup>

The U.S. Tax and Trade Bureau (TTB), the agency primarily responsible for enforcing these provisions, issued an "announcement" in May 2005 alerting producers of alcoholic energy drinks to these provisions, stating:

It is TTB's policy that the use of advertising statements that imply that consumption of certain alcohol beverages will have a stimulating or energizing effect, or will enable consumers to drink more of a product without feeling the effects of the alcohol, are misleading health-related statements that are in violation of [federal law]. ... TTB will take appropriate enforcement action when we determine that there have been violations of the advertising provisions of the FAA Act or its implementing regulations.<sup>71</sup>

Yet, marketers have continued to use messages that clearly imply, and in many cases explicitly state, that the products will be stimulating and energizing.

#### **Anheuser-Busch: Party All Night Marketing**

**Tilt** – The Tilt web site contains several messages that convey a "party all night" theme.<sup>72</sup>

Use Tilt when you:

- *Gear up for a night to impress*
- *Move from party to after-party*
- *Get your 2nd wind*
- *Get your 3rd, 4th, and 5th wind*
- *Get amped up about the evening's possibilities*

**Bud Extra** – The Bud Extra web site uses numerous marketing messages to promote the product as a good means to partying all night.<sup>73</sup>

- *Who's up for staying out all night?*
- *That's you all right. Relaxed and Ready to Roll*
- *It's not about the close down*
- *There's no such thing as too late*
- *Fun doesn't punch the clock*
- *Stay around for every twist of the ride*
- *Say hello to an endless night of fun*
- *The weekend is a state of mind*

Bud Extra's advertising slogans use similar late-night partying themes:

- *You Can Go Home Early When You're Married*
- *You Can Sleep When You're 30*
- *Go Home With More Than a Burrito Tonight*

To date, TTB has not announced a single investigation or alleged a violation of these federal provisions. Nor has there been any action by the Federal Trade Commission or the Food and Drug Administration or any other federal or state agency with potential jurisdiction over false, misleading, or unfair advertising. Also ignored by federal agencies are the marketing tactics that associate the products with nonalcoholic energy drinks, and the implications of this association for underage drinking. Only a committee of state attorneys general has undertaken any investigation, as noted in the introduction, and their intervention with Anheuser-Busch contributed to the company's decision to withdraw Spykes, an alcoholic energy drink that is 12 percent alcohol.

A second regulatory issue involves the classification of alcoholic energy drinks as malt beverages. The malt beverage designation has important marketing advantages, including much lower state and federal taxes and expanded availability in retail outlets that can sell beer and not spirits. Many of these outlets, such as convenience stores, tend to be frequented by youth.

In recent years, controversy has increased over this classification because of the industry's production process and concern over youth consumption. According to a federal study, most malt-based "alcopops" (such as Smirnoff Ice and Mike's Hard Lemonade) start out as beer, but then companies remove beer characteristics, including taste and color, adding distilled spirits and other additives. The final product has little if any similarity to beer.<sup>74</sup> Although the federal government has not investigated the issue, alcoholic energy drinks appear to be produced in the same manner, since they are labeled as malt beverages but do not have any beer characteristics.

The TTB has determined that the products can maintain the malt beverage classification if their total alcohol content is 6 percent or less and if no more than 49 percent of their alcohol content comes from distilled spirits flavoring.<sup>75</sup> (Some energy drinks, such as Sparks Plus and Tilt do contain more than 6 percent alcohol, indicating potential violation of the federal rule, which is even stricter for beverages over the 6 percent threshold.)

In addition to federal law, each state has its own classification schemes for alcohol products. Most state laws (at least 29 as of 2003) do not permit the addition of distilled spirits

to beer, and where this is the case, most malt-based energy drinks are likely misclassified.<sup>76</sup> In other words, alcoholic energy drinks in these states probably should be taxed at a much higher rate and be made available only in stores that sell distilled spirits. The TTB and relevant state agencies have taken no action to investigate this classification issue.<sup>77</sup> Doing so could result in significantly higher prices for these products, potentially resulting in a decrease in youth consumption, since young people are particularly sensitive to price.

Another area of inadequate government oversight is labeling. Because nonalcoholic energy drinks are regulated by the FDA as a food or beverage, labels on these products are required to contain a listing of all ingredients, in addition to "nutrition facts." Alcoholic products, however, are regulated by the TTB, which does not impose any such labeling requirements. This means that consumers currently have access to more ingredient information about nonalcoholic energy drinks than the alcoholic products. Moreover, there is no federal requirement to disclose the amount of caffeine or other additives in the products, regardless of alcohol content (although some producers of nonalcoholic energy drinks provide the information voluntarily). This is critical consumer information, particularly since some products have very high levels of caffeine.

## Recommendations

Despite the limited science, we do know that alcoholic energy drinks constitute a potential danger to the health and safety of our communities, and particularly to our young people. We need not wait for more science to act. The alcohol industry's plan to market these beverages and promote the mixing of alcohol with energy drinks should be vigorously opposed before the products become even more popular. Past experience shows that a swift response is critical or the economic benefits associated with their sale will become entrenched, making regulation far more difficult or impossible.

Communities need to aggressively seek both voluntary action by the alcohol industry and government action at all levels—national, state, and local—to protect our young people from harm. Specific recommendations for actions include the following:



## **Actions by Beverage Producers**

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1. Producers of nonalcoholic energy drinks such as Red Bull should immediately halt all promotional efforts aimed at encouraging the mixing of their products with alcohol, pending further review of the safety of this practice.
2. Producers of nonalcoholic energy drinks—companies such as Hansen Natural (maker of Monster products)—should reconsider their contracts with alcoholic beverage companies to distribute their products to bars, since this association encourages the mixing of energy drinks with alcohol.
3. Alcoholic beverage producers should discontinue the production of alcoholic energy drinks pending further scientific study that demonstrates the products' safety, particularly for young people. Policymakers should operate on the basis of the precautionary principle, which places the burden of proof on the manufacturers to demonstrate that their products are safe.
4. Producers who refuse to discontinue the production and sale of alcoholic energy drinks should at a minimum, do the following:
  - Fully disclose the ingredients in all alcoholic energy drinks and the amounts of additives, including stimulants such as caffeine and guarana, contained in the drinks;
  - Disclose the percentage of alcohol derived from distilled spirits, to ensure proper classification of alcoholic energy drinks as either malt beverages or distilled spirits under applicable federal and state laws; and
  - Provide prominent health and safety warning labels on each container, alerting consumers to the risks associated with consuming alcohol with caffeine and other stimulants contained in energy drinks.
5. The alcohol industry trade associations—the Distilled Spirits Council (DISCUS) and the Beer Institute—which take responsibility for the industry's self-regulation of its marketing practices, should investigate potentially deceptive marketing practices by their member companies, specifically marketing messages that appear to promote over-consumption and that target youth.
6. Manufacturers should initiate a public service campaign alerting alcohol consumers to the risks of mixing alcohol with energy drinks.

## **Actions by Alcohol Distributors and Retailers**

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Alcoholic beverage distributors and retailers should refuse to sell alcoholic energy drinks because of the potential health and safety risks they pose in communities. Also, bars and restaurants should stop mixing energy drinks with alcohol until the safety of such drinks can be proven.

## **Actions by the Federal Government**

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1. Congress should conduct hearings to assess the health and safety risks associated with alcoholic energy drinks, focusing particularly on underage drinking. Congress should then establish a national program designed to prevent harms associated with these products. Legislation should allocate necessary funding for the design and implementation of this program and should include specific directives to the Department of Health and Human Services, the Alcohol and Tobacco Tax and Trade Bureau, the Federal Trade Commission, the Federal Drug Administration, and the Department of Justice.

Congress should also hold hearings on the marketing of alcoholic energy drinks and targeted populations. The hearings should also focus on the encouragement given by nonalcoholic energy drink companies, bars, and restaurants to mix energy drinks with alcohol.
2. The Department of Health and Human Services should conduct research on the health and safety of alcoholic energy drinks, focusing particularly on the impact on underage drinking. Research should include assessments of the biological and psychosocial effects, addictiveness, youth consumption trends, alcohol industry marketing tactics, and role in alcohol-related violence and unintentional injury. The department should also develop a national media and public awareness campaign about the risks associated with alcoholic energy drinks.
3. The Tax and Trade Bureau should investigate and disclose the ingredients found in alcoholic energy drinks and determine whether the products are properly classified as malt beverages under federal law. It should also investigate the labeling and advertising practices associated with alcoholic energy drinks to determine whether they violate applicable law that prohibits false, misleading, and unfair marketing practices.
4. The Federal Trade Commission should conduct an investigation to determine whether any of the marketing practices associated with alcoholic energy drinks consti-

tute unfair business practices or deceptive or misleading advertising claims under applicable federal law.

5. The Food and Drug Administration should investigate the health and safety implications of mixing alcohol with caffeine, guarana, and other additives associated with energy drinks and should either ban such mixtures or require strict standards that protect the health and safety of consumers. The FDA should also study the effects of combining three potentially addictive substances: alcohol, caffeine, and sweeteners.
6. In what would likely be overlapping jurisdiction, the TTB and FDA should require ingredient labeling on all alcoholic products, and on alcoholic energy drinks in particular.
7. The Department of Justice should assess the impact of alcoholic energy drinks on crime and law enforcement and should incorporate a prevention program addressing these products into its Enforcing Underage Drinking Laws program.

### **Actions by State Governments**

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1. State legislatures should either ban or strictly limit the availability of alcoholic energy drinks, limiting their sale to retail outlets for distilled spirits and imposing a special tax surcharge, with tax revenues used to fund youth prevention and treatment programs.
2. State Alcoholic Beverage Control agencies and state taxing agencies with jurisdiction should investigate whether alcoholic energy drinks are appropriately classified as malt beverages instead of distilled spirits under applicable state laws. They should also conduct retail compliance checks to determine whether retailers are selling alcoholic energy drinks to minors (in part due to the similarity between alcoholic and nonalcoholic energy drinks).
3. State attorneys general should initiate investigations of the marketing and advertising practices associated with alcoholic energy drinks and ensure that applicable state laws regarding unfair business practices and misleading and deceptive advertising laws are properly enforced.
4. State health agencies with authority to address alcohol problems should assess the impact of alcoholic energy drinks on underage drinking problems in their states and should develop prevention and treatment programs.

### **Actions by Local Governments**

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1. Local governments should ban the mixing of alcohol with energy drinks in bars.
2. Local governments with authority to regulate the retail availability of alcohol should ban or strictly limit the sale of alcoholic energy drinks to retail outlets selling distilled spirits and impose fees or taxes on these drinks. Revenues collected should be used to establish a special youth prevention and treatment fund.
3. Local health agencies should work in collaboration with state agencies to develop locally based prevention campaigns designed to alert communities to the risks associated with alcoholic energy drinks.

Action is urgently needed before alcoholic energy drinks become further entrenched in the marketplace, which in turn would create powerful economic interests determined to maintain the status quo. These beverages are still in development, with major marketing efforts undoubtedly now being devised by the major brewers, among other producers. The uproar over Spykes, including the protest by 29 state attorneys general, resulted in Anheuser Busch's withdrawal of the product. This success should be used as a first step in a similar, broader campaign that challenges the entire beverage category.

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