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Energy Drinks: Calling Bull on Taurine

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Energy Drinks

Calling Bull on Taurine

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Loaded with caffeine and taglines — "It gives you wings!" — energy drinks have rapidly emerged from relative obscurity into a $9 billion dollar industry that sponsors everything from soccer teams to space missions. These so called "dietary supplements" promise unlimited energy, weight loss, and even improved athletic performance, all while existing in a legal gray area unregulated by the FDA Since their rise to popularity in the late '90s, energy drinks have been plagued by

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negative publicity, yet a mix of savvy marketing and celebrity endorsements have allowed the industry to experience constant growth. In fact, many companies seem to capitalize on the danger surrounding their product, cultivating an "extreme" image with brand names like "Monster" or "Cocaine", appealing to risk-takers. News reports frequently cite the blend of unusual and imposingly scientific-sounding ingredients in energy drinks, such as taurine and glucuronolactone, as evidence of their danger. Although recent studies and media outlets have proclaimed these substances hazardous, the small amounts contained in each vibrantly-colored can have virtually no effect on the human body.

A British study conducted in 2001 found that drinking one can of Red Bull actually does improve aerobic endurance, memory, alertness, and reaction time when compared to placebos. The researchers concluded that "these consistent and wide ranging improvements in performance are interpreted as reflecting the effects of the combination of ingredients [found in Red Bull]." The manufacturers of Red Bull cite this study, among others, as evidence to support their claim that Red Bull "vitalizes the body and the mind."

Although each company claims to have a unique combination of ingredients, the composition of energy drinks rarely varies from brand to brand. Diverse taglines, brand names, and serving sizes aside, all energy drinks are composed of essentially the same four active ingredients in large quantity: taurine, caffeine, guarana and ginseng. For instance, a can of Rockstar contains 2000 mg of taurine, 160 mg of caffeine, 400 mg of guarana and 50 mg of ginseng — concentrations typically found in any other energy drink. Although the makers of Red Bull may try to convince you that each one of these ingredients serves a vital role in its effect, in reality many of these ingredients offer no tangible benefit.

Taurine, for instance, is an amino acid used by the body to maintain skeletal muscles and remove fatty liver deposits, which, in theory, could lead to greater endurance. However, to get even a slight effect from taurine — positive or negative — you would need to ingest at least several thousand milligrams, equivalent to drinking three or four cans of Rockstar in quick succession, which would also mean taking in a dangerously high dose of caffeine. Ginseng, included to increase immune function and stamina, is no better. Studies suggest at least 200-2000 mg of ginseng a day would be the minimum quantity needed to yield any effect, adverse or otherwise. As a typical energy drink contains 50 mg, the ginseng does not likely confer its advertised benefits. Guarana, an herb that is frequently peddled as an "all natural energy supplement," is actually just a small source of caffeine, insignificant when compared to the amount that is already artificially added.

For all intents and purposes, caffeine is the only active ingredient in any energy drink. An 8-ounce Red Bull has as much caffeine as two cups of coffee, but squeezed into a much smaller package. So yes, it may give you wings, but the wings are made of caffeine, not some ingenious secret formula. Caffeine has long been known to lower heart rates, increase endurance, and improve cognitive functions when consumed in moderate amounts — the exact same effects that the British researchers attributed to Red Bull's "combination of ingredients." The other ingredients found in energy drinks, although you've never heard of them, are just a clever marketing ploy: an attempt to convince you to buy their product.

Though the more unusual chemicals in energy drinks may be harmless, caffeine can pose a big health risk. Though it increases memory and mental performance, caffeine also may cause insomnia, anxiety and heart palpitations, as anyone who's ever had a coffee-fueled study session can tell you. Caffeine is also an extremely strong diuretic, meaning it can easily lead to dehydration, sometimes with fatal results. Energy drink manufacturers have recently begun to target athletes as a consumer base, claiming that their product enhances performance and reaction times. This marketing practice was banned in certain countries, following the death of several adolescent athletes after they consumed many cans of Red Bull before their sports events.

Even without intense physical activity, energy drinks have the potential to be dangerous. Reading a list of the side effects associated with the drinks calls to mind those prescription drug commercials on television. You can almost hear the narrator hastily reading aloud: "Frequently reported side effects include seizures, birth complications, heart palpitations, and severe tooth decay." Drugs that have adverse effects like these would ordinarily undergo years of testing, be regulated by the FDA, and require a doctor's prescription, but anyone can buy a Red Bull at their local gas station. These dangers are very real, yet since the FDA have classified these chemicals as dietary supplements, energy drinks are not required to list them on the can. As hospitalizations related to the drinks among adolescents have been rising (there were more than 16,000 reported cases in 2008), this classification is likely to change soon. As more than half of these cases involve males ages 18-30, researchers have highlighted the risks these drinks pose to adolescents, particularly boys drawn in by the drinks' "extreme" image.

Despite these dangers, no one can deny that if you're in need of a quick burst of productivity, energy drinks get the job done. Yet, as the risks associated with frequent consumption become more and more apparent, the cost of this productivity must be considered. Personally, even knowing the side effects, I still find myself reaching for a can of Rockstar during finals season, simply because nothing else works as effectively.