

# FDA report describing deaths sheds light on high-caffeine beverages

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By Hannah Krakauer October 29, 2012

Last week, the Food and Drug Administration released incident reports describing several deaths that have occurred following the consumption of Monster Energy drinks. Much of the concern over energy-drink consumption centers on the high caffeine content of such beverages.

Here's a Q & A about some of the issues raised by the reports:

## How did these deaths come to light?

Anais Fournier, 14, of Hagerstown, Md., died suddenly last December from a heart arrhythmia that led to cardiac arrest. She had apparently drunk two Monster Energy drinks over two days. In mid-October, Fournier's mother, Wendy Crossland, filed a lawsuit against Monster Beverage, based in Corona, Calif., claiming that the company did not make clear the risks that come with drinking the beverage.

As part of a Freedom of Information request by Crossland, the FDA released details of the other four cases, plus one nonfatal heart attack, all of which are alleged to be associated with drinking Monster Energy. The company maintains that its drinks are safe.

## How much caffeine is in energy drinks such as Monster Energy?

Actually, not a huge amount. A 24-ounce can of Monster Energy contains 240 milligrams of caffeine. A typical eight-ounce cup of brewed coffee contains 90 to 200 milligrams of caffeine.

## How much caffeine could kill me?

A lethal dose of caffeine is about five grams for most adults, so it would take more than 25 cups of coffee to reach that point. Part of the reason it is easy to avoid death by caffeine is that the symptoms that come with the early stages of caffeine toxicity

— lightheadedness, nausea and headache — are quite unpleasant, says [Sarah Kerrigan](#), a forensic toxicologist at Sam Houston State University in Huntsville, Tex.

For children and for the elderly, the dose that causes serious effects may be significantly less than five grams, but the amount has not been firmly established.

### **How common is death by caffeine?**

Not common at all. Only a handful of cases appear in the scientific literature, although it is possible that such deaths are underreported. However, nonfatal emergency-room visits are on the rise. Between 2005 and 2009, ER visits related to energy drinks went up tenfold in the United States. But at least 44 percent of these visits were due to mixing energy drinks and another substance, such as alcohol.

The amount of caffeine in a can of Monster Energy would, at worst, probably only cause only a case of the jitters in most healthy adults. But Fournier had Ehlers-Danlos syndrome, a genetic disorder marked by easily damaged blood vessels. Since caffeine dilates blood vessels, this condition could have made her much more sensitive to caffeine.

### **What conditions could make someone vulnerable to caffeine?**

Just about anything that makes the heart muscle weaker can increase the sensitivity to caffeine's cardiovascular impacts, says [Rita Redberg](#), a cardiologist at the University of California at San Francisco. Conditions such as obesity and diabetes, which we do not normally associate with arrhythmia, can weaken the heart and open the door for caffeine to cause dangerous palpitations.

But caffeine sensitivity is also a highly individual trait, according to [Jeff Goldberger](#), a cardioelectrophysiologist at Northwestern University in Chicago. A 2011 review of the literature on caffeine showed that it is nearly impossible to pinpoint consistent disease factors that link large doses of caffeine to arrhythmia in the general population. Labels on Monster Energy drinks says they are not recommended for children younger than 12 or for people sensitive to caffeine.

### **Why aren't energy drinks regulated?**

The FDA can only regulate food and drugs. Because energy drinks are sold as nutritional supplements, they are not subject to the requirements placed on foods that contain caffeine. In the United States, soft drinks are limited to 71 milligrams of caffeine in a 12-ounce drink, a concentration about one-third lower than is found in Monster Energy. Energy drinks are not required to specify how much caffeine they contain on their labels.

### **What else is in energy drinks?**

Taurine and guarana are often included as stimulants, along with other substances. Many of these ingredients have not been studied, says Kerrigan, and “certainly not to the extent that you'd study a new drug if you were going to start prescribing it or

selling it over the counter.”

*This article was produced by New Scientist magazine and can be read in its entirety at [www.newscientist.com](http://www.newscientist.com).*