

How dangerous are energy drinks for young people?

November 21 2012, by Jenny Hall



Credit: Vladimir Melnik, photoxpress.

(Medical Xpress)—News reports broke this week that since 2003, three Canadian teens have died from drinking energy drinks, and 35 others have suffered series side effects like amnesia and irregular heartbeat. Young people are increasingly turning to energy drinks to fuel study sessions, as well as coming to rely on them in everyday life. But according to a U of T caffeine expert, these kids are playing a dangerous game.

Full of sugar and caffeine, [energy drinks](#) are increasingly being marketed at kids. And, says, Ahmed El-Sohemy of [nutritional sciences](#), "the makers of these energy drinks are continuing to push the envelope on caffeine. Some of them have as much as 500 milligrams per can." By comparison, a can of cola has 34 milligrams and an eight-ounce cup of

coffee has 80 to 100 milligrams of caffeine.

"We don't know the long-term [health consequences](#) of the increased caffeination of our youth," he cautions.

El-Sohemy is an expert on how caffeine is processed in the body. His discovery of the "coffee gene" in 2006 made headlines around the world. Using a combination of dietary assessment and [genetic analysis](#), his team found that half their study population were "slow metabolizers," of caffeine—it broke down more slowly in these people's bodies and lingered longer. This population was at [risk of heart attack](#) based on [caffeine consumption](#). The other half were "fast metabolizers," and there was no increased [heart attack risk](#) associated with increased [caffeine intake](#).

We inherit our "caffeine" genes from our parents. This means that some teens will have the "slow" gene to begin with. But this doesn't mean the "fast gene" teens are safe. The gene controls the level of an enzyme that breaks down caffeine and this level is always lower among children. This means, says El-Sohemy, that "all kids are slow metabolizers. Even if you're going to become a fast metabolizer as an adult, as a child you have an impaired ability to eliminate caffeine from your system."

The problem is compounded by the fact that the negative effects of all this caffeine aren't likely to be obvious right away. "Eighteen-year-olds don't generally suffer heart attacks," he says. "But if 17- and 18-year-olds are knocking back several cans of energy drinks a day, what will happen when they're 40?"

He speculates that epidemiologists of the future will see negative cardiovascular outcomes for this population, but believes it's important not to wait that long.

"We should be concerned now. We already have evidence that high amounts of caffeine can be harmful to children."

Some countries have banned energy drinks or prevented their sale to minors. El-Soheemy reports that since caffeine is a naturally-occurring substance, marketers in Canada are claiming that their products are natural health products, which allows them to sidestep guidelines about how much caffeine can be added to beverages.

"Nutritional advice can be tricky because lots of things—like coffee—can be bad for some conditions and some individuals but good for others in moderation. But the high levels and high concentrations of caffeine in these products—which also tend to be very high in sugar—have absolutely no health benefit."

His practical advice? "Talk to your children about the harms of consuming energy drinks. Let them know that it's not good for them in the long run, even though it may make them feel good right now."

Provided by University of Toronto

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