

This week I am focusing on **energy drinks** - especially when consumed by children, adolescents and college-age adults. My attention was drawn to this issue by a recent review published in the journal Pediatrics (Seifert et al, Pediatrics, 127: 511-528, 2011).

Energy drinks are the fastest growing segment of the US beverage market, and half of all the energy drinks sold in the United States are consumed by children, adolescents and young adults (19-25 years old). "What's the problem with energy drinks?" you might ask.

To begin with they are **sweetened beverages** and, as such, contribute to the obesity epidemic in this country. However, a more pressing concern is the **caffeine content** of these beverages which can range from 70 mg to over 160 mg per serving - that's 3 to 5 times greater than the caffeine content of a typical cola drink.

And natural ingredients such as guarana, kola nut and yerbe mate are no better. For example, each gram of guarana supplies 40 to 80 mg of caffeine, and the biological potency of caffeine from guarana may be greater than the same amount of caffeine in a cola drink because it has a much longer half-life in the blood.

The large amount of caffeine in energy drinks is allowed only because of a loophole in our regulatory system. The FDA limits the amount of caffeine that can be added to soft drinks because they are regulated as foods. Energy drink manufacturers get around those restrictions by classifying their drinks as dietary supplements.

And, of course, the problem isn't just the amount of caffeine in a single energy drink, it is that many children, adolescents and young adults drink more than one energy drink a day - **in addition to soft drinks, coffee and other caffeine containing foods and beverages**.

Adolescents in the US consume an average of 70-80 mg/day of caffeine, and some consume up to 800 mg/day. That much caffeine can be a problem! For adults 12.5 - 100 mg/day has mostly beneficial effects such as improved exercise endurance, alertness, reaction time and mood - especially if the individual is sleep deprived.

However, caffeine intakes of 135 - 400 mg/day can lead to anxiety, jitteriness and insomnia. And daily intakes above that can cause tremors, irregular heart beat, palpitations and nausea. But that's just the average adult. Some adults and many children experience the adverse effects of caffeine at much lower doses.

That's a real concern because 28% of 12-14 year olds, 31% of 12-17 year olds, 34% of 18-21 year olds and 51% of college students report consuming one or more energy drinks on a daily basis. And to make matters even worse **54% of the college students regularly mix energy drinks with alcoholic beverages**.

The health risks of high caffeine intake are not trivial. Poison control centers in the US and several other countries are reporting an upswing of children, adolescents and young adults admitted with **seizures, agitation, psychotic conditions, tachycardia, cardiac dysrhythmias, high blood pressure, heart failure and even death due to overconsumption of energy drinks**.

The message is simple: Energy drinks have all of the disadvantages of soft drinks AND they have a much higher caffeine content. While caffeine can serve as a simple pick-me-up if consumed in moderation, it can have serious health consequences if consumed in excess.

A word to the wise would be to add up the total amount of caffeine you - and especially your children - are consuming on a daily basis. If your total caffeine consumption exceeds 100 mg/day (50-70 mg/day for children depending on their age), you might want to consider reducing your intake of energy drinks.

To Your Health!
Dr. Stephen G Chaney