

science FRONTIERS



ZAPPED! (Energy Drinks)

Have you ever wished you could run faster or stay up longer or play basketball without getting tired? Have you ever tried (or been tempted to try) a Red Bull to help you do it? Each day, thousands of kids think that drinking any one of the many high energy drinks on the market will give them the edge they need to do better. But what they don't realize is that the extra energy they gain now is depleting their resources for the future. The short term gains are definitely not worth the long term consequences.

What gives those drinks their zing? The main ingredient in most energy drinks is caffeine, the same substance found in coffee. Other energy drinks get their zip from guaraná, a South American seed. Guaraná seeds pack about 5 times as much caffeine as coffee beans. And unlike coffee, guaraná drinks do not have to list the amount of caffeine inside. That increases the danger of unwanted side effects, such as harmful changes in the body's levels of **glucose** (*sugar*) and potassium, increased heart rate and a rise in blood pressure. Caffeine products are especially damaging to the bodies of children and teens.

Caffeine makes people nervous and irritable, increases the cholesterol in the blood, raises blood sugar levels, and interrupts normal brain function. To make matters worse, while people think they are getting an energy drink to put water into their bodies, the caffeine in the drink is acting as a **diuretic** (*increases urination*), removing water from their systems. And if that weren't bad enough, the acids used to make these drinks fizzy damage teeth and weaken bones!

But the biggest problem with energy drinks is what they're taking away. They promise to give energy, but they don't tell you where that energy is coming from. And it's not from the drink! In order to give you more energy instantly, caffeine "borrows" from your own body's energy bank. It's like zapping you to make you work harder and faster. The problem is, you can't put that energy back for when you need it later on. Biotechnology has no way to restore **depleted** (*emptied out*) energy reserves in the body.

Thirsty? Drink water! Tired? Get some sleep!

Questions for Discussion or Research

Why is water so important for the body?

How do cells manufacture energy?

How much water is in the brain? Muscles? Bones?

What do the Bible and Ellen White say about taking care of our bodies?

Research Ideas

Guaraná, theobromine, caffeine, yerba mate