

Sports and Energy Drinks Responsible for Irreversible Damage to Teeth

ScienceDaily (May 1, 2012) — A recent study published in the May/June 2012 issue of *General Dentistry*, the peer-reviewed clinical journal of the Academy of General Dentistry, found that an alarming increase in the consumption of sports and energy drinks, especially among adolescents, is causing irreversible damage to teeth - specifically, the high acidity levels in the drinks erode tooth enamel, the glossy outer layer of the tooth.

"Young adults consume these drinks assuming that they will improve their sports performance and energy levels and that they are 'better' for them than soda," says Poonam Jain, BDS, MS, MPH, lead author of the study. "Most of these patients are shocked to learn that these drinks are essentially bathing their teeth with acid."

Researchers examined the acidity levels in 13 sports drinks and nine energy drinks. They found that the acidity levels can vary between brands of beverages and flavors of the same brand. To test the effect of the acidity levels, the researchers immersed samples of human tooth enamel in each beverage for 15 minutes, followed by immersion in artificial saliva for two hours. This cycle was repeated four times a day for five days, and the samples were stored in fresh artificial saliva at all other times.

"This type of testing simulates the same exposure that a large proportion of American teens and young adults are subjecting their teeth to on a regular basis when they drink one of these beverages every few hours," says Dr. Jain.

The researchers found that damage to enamel was evident after only five days of exposure to sports or energy drinks, although energy drinks showed a significantly greater potential to damage teeth than sports drinks. In fact, the authors found that energy drinks caused twice as much damage to teeth as sports drinks.

With a reported 30 to 50 percent of U.S. teens consuming energy drinks, and as many as 62 percent consuming at least one sports drink per day, it is important to educate parents and young adults about the downside of these drinks. Damage caused to tooth enamel is irreversible, and without the protection of enamel, teeth become overly sensitive, prone to cavities, and more likely to decay.

"Teens regularly come into my office with these types of symptoms, but they don't know why," says AGD spokesperson Jennifer Bone, DDS, MAGD. "We review their diet and snacking habits and then we discuss their consumption of these beverages. They don't realize that something as seemingly harmless as a sports or energy drink can do a lot of damage to their teeth."

Dr. Bone recommends that her patients minimize their intake of sports and energy drinks. She also advises them to chew sugar-free gum or rinse the mouth with water following consumption of the drinks. "Both tactics increase saliva flow, which naturally helps to return the acidity levels in the mouth to normal," she says.

Also, patients should wait at least an hour to brush their teeth after consuming sports and energy drinks. Otherwise, says Dr. Bone, they will be spreading acid onto the tooth surfaces, increasing the erosive action.

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