High-fructose corn syrup in soda has much more fructose than advertised, study finds

28 October 2010, By Karen Kaplan

High-fructose corn syrup is often singled out as Food Enemy No. 1 because it has become ubiquitous in processed foods over about the last 30 years -- a period that coincides with a steep rise in obesity. One of the primary sources of high-fructose corn syrup in the American diet is soda -- in fact, many public health advocates refer to soda as "liquid candy."

That nickname is more apt than advocates realized, according to a study published online this month by the journal Obesity.

Researchers from the University of Southern California's Keck School of Medicine went shopping in East Los Angeles and bought 23 cans and bottles of popular beverages. Then they sent them off to a laboratory in Massachusetts that used a technique called high-performance liquid chromatography to determine how much fructose, glucose and sucrose were in each sample. Each beverage was tested three times, and all samples were unlabeled.

Before we get to the results, let's pause for a quick review on sugars. Fructose and glucose are simple sugars. Fructose is sweeter than glucose and has been shown to do more damage to your metabolism. Sucrose -- better known as table sugar -- is a 50-50 combination of fructose and glucose. The high-fructose corn syrup used in soda is supposed to contain no more than 55 percent fructose and 45 percent glucose, according to the Corn Refiners Association. (Another popular formulation is 42 percent percent fructose and 58 percent glucose.) This slight difference is the reason why we here at Booster Shots frequently say that HFCS is just as unhealthy as "natural" sugar.

But it turns out that some of the stuff they put in soda isn't HFCS, it's RHFCS -- Really High Fructose Corn Syrup.

The Keck researchers found that the sweeteners in Coca-Cola and Pepsi contained as much as 65 percent fructose (and only 35 percent glucose), and Sprite registered as much as 64 percent fructose (and 36 percent glucose).

"The type of sugar listed on the label is not always consistent with the type of sugar detected," they wrote. "Considering that the average American drinks 50 gallons of soda and other sweetened beverages each year, it is important that we have more precise information regarding what they contain, including a listing of the fructose content."

To make sure the high-performance liquid chromatography tests were accurate, the researchers also sent samples of pure fructose, pure glucose and pure sucrose. The test detected 9.9 grams of fructose in a 10-gram sample of fructose, 9.8 grams of glucose in a 10-gram sample of glucose, and 9 grams of sucrose in a 10-gram sample of sucrose.

The study included a few other surprises:

--Mountain Dew had 13 percent less sugar than advertised on the label, and Dr. Pepper had 8 percent less.

--Tested samples of Mexican Coca-Cola -- which is supposedly made with cane sugar instead of high-fructose corn syrup -- contained no sucrose, only fructose and glucose in a 52 percent-to-48 percent ratio.

--17 percent of the sweetener in Red Bull was fructose, even though sucrose and glucose are the only sweeteners listed on the label.

Here's what nutritionist Marion Nestle had to say about the study Tuesday on her blog, Food Politics: "I've been saying for ages that the sugar composition of high fructose corn syrup (or HFCS) is no different from that of table sugar (sucrose)."

Nestle continued: "At most, HFCS is supposed to be 55 percent fructose, as compared to the 50 perccent in table sugar. Most foods and drinks are supposed to be using HFCS that is 42 percent fructose. A percentage of 55 is not much different biologically than 50, which is why the assumption has been that there is no biologically meaningful difference between HFCS and table sugar. This study, if confirmed, means that this supposition may need some rethinking."

The USC researchers pointed out that the U.S. Food and Drug Administration allows for some wiggle room on nutrition labels. Sodas are allowed to have as much as 20 percent more of a nutrient -- including sugar and HFCS -- than is indicated on the side of the can. Even Cokes and Pepsis with 65 percent fructose instead of 55 percent are only 18 percent higher than advertised.

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