

Fructose: Sweet, But Dangerous

Is High Fructose Corn Syrup Worse Than Sugar?

By Laura Dolson, About.com Guide *Updated October 09, 2008*

What is fructose?

Fructose is a monosaccharide (simple sugar), which the body can use for energy. Because it does not cause blood sugar rise tremendously (has a low glycemic index), it was once thought that fructose was a good substitute for sucrose (table sugar). However, the American Diabetes Association and nutritional experts have changed their minds about this.

Is fructose bad for me?

A small amount of fructose, such as the amount found in most vegetables and fruits, is not a bad thing. In fact, there is evidence that a little bit may help your body process glucose properly. However, consuming too much fructose at once seems to overwhelm the body's capacity to process it. The diets of our ancestors contained only very small amounts of fructose. These days, estimates are that about 10% of the modern diet comes from fructose.

What happens if I consume too much fructose?

Most of the carbohydrates we eat are made up of chains of glucose. When glucose enters the bloodstream, the body releases insulin to help regulate it. Fructose, on the other hand, is processed in the liver. To greatly simplify the situation: When too much fructose enters the liver, the liver can't process it all fast enough for the body to use as sugar. Instead, it starts making fats from the fructose and sending them off into the bloodstream as triglycerides.

Why is this bad?

This is potentially bad for at least three reasons:

High blood triglycerides are a risk factor for heart disease.

Fructose ends up circumventing the normal appetite signaling system, so appetite-regulating hormones aren't triggered--and you're left feeling unsatisfied. This is probably at least part of the reason why excess fructose consumption is associated with weight gain.

There is growing evidence that excess fructose consumption may facilitate insulin resistance, and eventually type 2 diabetes. However, some of this effect may be from chemicals in soda which reacts with the high fructose corn syrup.

What are the major sources of fructose?

Fruits and vegetables have relatively small, "normal" amounts of fructose that most bodies can handle quite well. The problem comes with added sugars in the modern diet, the volume of which has grown rapidly in recent decades. The blame has often been pinned to high fructose corn syrup (HFCS), which is made up of 55% fructose and 45% glucose. However, sucrose is half fructose and half glucose. So, HFCS actually doesn't have a whole lot more fructose than "regular" sugar, gram for gram.

High fructose corn syrup has become incredibly inexpensive and abundant, partially due to corn subsidies in the United States. So, really, the problem is more that it has become so cheap that it has crept its way into a great number of the foods we eat every day.

Is corn syrup fructose different than fructose found in other foods?

No, all fructose works the same in the body, whether it comes from corn syrup, cane sugar, beet sugar, strawberries, onions, or tomatoes. Only the amounts are different. For example, a cup of chopped tomatoes has 2.5 grams of fructose, a can of regular (non-diet) soda supplies 23 grams, and a super-size soda has about 62 grams.

Which foods have high fructose corn syrup and other sugars?

Today, almost all packaged foods have sugar added in some form, which almost always includes a lot of fructose. Honey has about the same fructose/glucose ratio as high fructose corn syrup. Fruit juice concentrates, sometimes used as "healthy sweeteners," usually have quite a lot of fructose (never mind that the processing of these concentrates strips away most of their nutritional value). Look at the ingredients on packaged food labels and you will probably see sources of fructose. See my article, *Sugar's Many Disguises*, to learn what to look for.

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