

Fructose: Sugar's Dark Side?

Study: Fructose Increases Heart Risk Factors -- and Weight

By [Daniel J. DeNoon](#)
WebMD Health News

Reviewed By [Louise Chang, MD](#)

June 25, 2007 (Chicago) -- Cane sugar has a dark side, a provocative new study shows.

The sweetener we call sugar is actually a double sugar. Half is the sugar called glucose, the body's most basic fuel. The other half is another sugar called fructose. Researchers have suspected that fructose is a bad actor, but the evidence so far has been circumstantial.

Can fructose really be worse for you than glucose? University of California, Davis researchers Peter J. Havel, PhD, Kimber Stanhope, and colleagues designed a clever study to find out.

First, they brought 23 overweight or obese adults, ranging in age from 43 to 70, into their clinical center. For two weeks, the volunteers' diets were strictly controlled. They got a high-carb (55%), moderate-fat (30%) diet that was balanced to give them no more energy than they spent in exercise.

After measuring their heart disease risk factors, such as blood fats, cholesterol, and weight, the researchers set them free.

Then for eight weeks, the volunteers were allowed to eat whatever they wanted except for one thing. Each person had to drink three sweetened beverages every day -- which gave them 25% of their recommended daily energy intake.

Half the subjects drank beverages sweetened with pure glucose. The other half got beverages sweetened with pure fructose. The researchers continued to test them for heart risk factors.

After the eight weeks, the volunteers again were confined to the clinical center, where they continued to drink their assigned beverages but had to return to an energy-balanced diet.

Just two weeks after they started drinking the beverages, the dark side of sugar became apparent. Those who drank fructose-sweetened beverages showed signs of increasing risk of heart disease. Those who drank glucose-sweetened beverages did not.

The fructose drinkers' LDL "bad" cholesterol, blood fats, and other signs of worsening heart risk all increased. And alarmingly, their insulin sensitivity decreased -- a sign that their diabetes risk was increasing, too.

To add insult to injury, the fructose drinkers gained about 3 pounds, while the glucose drinkers didn't gain weight.

"Most people get the majority of the added sugars in their diet from beverages," Havel tells WebMD. "We saw a lot of changes happen in just two weeks of drinking these beverages -- and in real life, people don't do this just for two or 10 weeks but as a lifelong habit. They are potentially exposing themselves to cardiovascular risk."

The news may be worse. Stanhope says that preliminary data from new studies show that regular sugar and high-fructose corn syrup each seem to have the same effect as fructose alone -- even though both are only about half fructose and half glucose (normal corn syrup is 100% glucose).

It's still far too early to draw any conclusions from the new study. But Stanhope says it's unlikely anybody is going to apply the health-food label to sweetened soft drinks.

"It doesn't look like a good idea to drink a lot of soft drinks," Stanhope tells WebMD. "We were feeding people at the rate of three sodas a day. Some do drink that much, some people in real life do more, and some have only one a day. Give me two years, and we will know a lot more about the safe level."

Stanhope reported the findings at the American Diabetes Association's 67th Annual Scientific Sessions, held June 22-26 in Chicago.

SOURCES: Stanhope, K. American Diabetes Association 67th Annual Scientific Sessions, Chicago, June 22-26, 2007. Kimber Stanhope, staff research associate, University of California, Davis. Peter Havel, PhD, DVM, associate researcher, University of California, Davis.

© 2007 WebMD Inc. All rights reserved.