

The Sweet Life—Lived a Little More Consciously

We are born loving sugar. Mother's milk is a natural source of the sugar lactose. As babies and children grow and develop, enjoying the taste of sweetness is one of life's pleasures. One evolutionary theory substantiated by recent research suggests that children are biologically hard-wired to crave sugar to ensure that they get the calories they need during growth spurts. This innate physiological predisposition is healthy when the sources of those sweet calories are fruits, vegetables and milk—or "real" foods. In contrast, the consumption of processed foods that contain added sugars can have adverse metabolic consequences.

In recent decades, Americans have become heavier than ever. Despite the fight to prevent obesity, the number of children and adults who are obese remains high, with the most recent national survey identifying 17 percent of 2- to 19-year-olds and 35 percent of adults as obese. Along with being overweight comes a host of metabolic abnormalities—high blood pressure, abnormal cholesterol levels, insulin resistance that can progress to Type 2 diabetes—that are increasing the risk of heart disease in children and adults alike.

At Children's Hospital Oakland Research Institute (CHORI), Director of Atherosclerosis Research Dr. Ronald M. Krauss, whose preventive research program focuses on diet and drug effects on heart disease risk, states, "More and more studies are pinpointing sugar as a dietary factor associated with heart disease." A 2014 Harvard study that evaluated 88,520 women enrolled in the Nurses' Health Study showed that consuming 2 or more servings of sugar-sweetened beverages daily was associated with a 35 percent greater risk of heart disease. In another study of U.S. adults participating in the National Health



The recommendation from the USDA is to keep added sugar intake to less than 10 percent. For a person who consumes 2,000 calories a day, that is about 50 grams of added sugar a day. Be aware of the sugars in the beverages you consume.

and Examination Survey, people consuming the most added sugars (>25 percent of total energy) were 2.75 times more likely to die of heart disease than people who consumed less than 10 percent of their calories from added sugar.

Data from these studies have contributed to the 2015 recommendation by the USDA Dietary Guidelines committee to limit added sugar intake to less than 10 percent of total calories consumed. The most stringent recommendations—issued by the American Heart Association and the World Health Organization—put that number at less than 5 percent; that is about 25 grams, or 6 teaspoons a day for women and 36 grams or 9 teaspoons for men.

So, where is this added sugar? Sodas, fruit juices, and sweetened beverages—which include sports and energy drinks and many teas—are obvious sources of sugar and extra calories. But there are also many "hidden" sugars in foods that would seem healthy. Low-fat yogurts, salad dressings, breakfast cereals, pasta sauces, and other sauces can provide up to 30 grams of sugar per serving—as much sugar as in a Snickers bar.

The type of sugar we eat seems to

matter. There is increasingly more scientific evidence showing that the sugar fructose has adverse effects on human metabolism independent of its effects on body weight. In other words, even if a person doesn't gain weight, eating high levels of fructose can lead to fat accumulation in the liver, which leads to abnormal fat metabolism in the blood, ultimately resulting in cholesterol profiles that increase a person's risk of heart disease. This growing body of research runs counter to the sugar industry's argument that "a calorie is a calorie" and that sugar—in all its forms—can be part of a healthy diet.

The Family Heart & Nutrition Center at Children's Hospital Oakland Research Institute aims to make research relevant and accessible to the community.



For more information, go to <http://bitly.com/CHORI-FHNC>, or call Dr. Ronald M. Krauss at 510-450-7912.

C · H · O · R · I
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Sugar cheat sheet

Sugar Breakdown

Teens can also help advance medical discoveries!

One of Dr. Krauss's research studies is looking at the effects of fructose and heart disease risk in teens, in particular teens that consume fructose-sweetened beverages. The study's findings may guide future nutritional recommendations, helping consumers make educated decisions on how to best feed themselves and their families.

ARE YOU A TEENAGE MALE WHO DRINKS 2 OR MORE CANS OF SODA EVERY DAY?



The Cholesterol Research Center (CRC) is looking for **teen boys ages 13 to 18 for an 8-week research study on the effects of replacing soda with reduced-fat milk on cardiovascular disease risk factors.**

To be eligible, participants must:

- Be male, 13-18 years old
- Currently drink at least 24 oz. (2 cans) of soda or other sugary drinks per day

We will determine final eligibility at the clinic visit.

If you qualify and complete our study, you will receive:

- Up to \$370
- Education on healthy lifestyle practices

To see if you are eligible:

- Go to sams.studysites.net
- Or go to CRCstudy.org
- Or call 866-513-1118. Refer to the "SAMS Study"



SUGAR SOURCES

 <p>White</p>	<p>Table sugar or sucrose (composed of 1 glucose and 1 fructose molecule) is derived from sugar cane and sugar beets. The molasses has been removed, and the sugar crystals are treated to refine it into its final white color. Sugar is classified as a carbohydrate and provides 4 calories of energy per gram but offers no nutrient value.</p>
 <p>Brown</p>	<p>Brown sugar is also sucrose and offers no health benefits. Its color comes from molasses that has been added back in during the production process—which provides more moisture for baking.</p>
 <p>High Fructose Corn Syrup (HFCS)</p>	<p>HFCS-55 is a popular food product additive because of its high sweetness compared to other sugars. The number refers to the percentage of the total sugar content that fructose contributes; HFCS-55 is 55 percent fructose. Fructose was originally preferred as an alternative because it did not raise blood sugars as much as glucose. However, recent evidence shows fructose goes straight to the liver, where it can stimulate fat production—which creates adverse consequences for metabolism and heart health.</p>
 <p>Milk</p>	<p>Lactose is the naturally occurring sugar in milk and milk products. One cup of milk contains about 12 grams of lactose. Chocolate milk, however, has been sweetened and adds an additional 11 grams of sugar per cup.</p>
 <p>Fruit</p>	<p>Fruit is a natural source of the sugar fructose. Consumed whole, fruit is a healthy food choice that provides fiber, vitamins, minerals, other nutrients, and water.</p>
 <p>Fruit Juices</p>	<p>Drinking just the juice of fruit strips away the fiber and some of the nutrients and concentrates the sugars to levels comparable to artificially sweetened sodas. Keep in mind that a serving of fruit juice is 1/2 cup; most bottles contain 4 times that amount.</p>
 <p>Honey</p>	<p>Honey has the same relative sweetness as table sugar. A tablespoon of honey provides about 17 grams of sugar. It contains around 30 percent glucose and 40 percent fructose along with other sugars that are a little less rapidly digested.</p>
 <p>Agave</p>	<p>Agave has been marketed as a natural alternative to sugar, but this sweetener is 90 percent fructose and 10 percent glucose. Despite its original reception as a healthy substitute for table sugar and HFCS, its high fructose content should make consumers wary.</p>
<p>SUGAR SUBSTITUTES: Artificial sweeteners are synthetic sugar substitutes that provide a sweet taste without the calories. Limiting or avoiding artificial sweeteners can allow a consumer to better taste the natural sweetness of fruits and other foods.</p>	
 <p>Stevia</p>	<p>Stevia is a sweetener extracted from the stevia plant which grows in Brazil and Paraguay. In combination with erythritol and "natural" flavors, stevia is sold as a sugar substitute called Truvia. It offers no calories.</p>
 <p>Aspartame</p>	<p>An artificial sweetener 200 times more sweet than table sugar, aspartame is the key ingredient in Equal and Nutrasweet. Aspartame is used in over 6,000 food products, including diet sodas, and consumed by over 200 million people.</p>