

Nutrition and Health Info Sheet

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Added Sugars and High-Fructose Corn Syrup

What are “added sugars”?



These are sugars that are not found naturally in foods, and have been added during processing. Most of the added sugars in the average American diet come from soda, desserts, fruit drinks, and candy (1). Foods that have naturally occurring sugars are milk, fruit and vegetables.

What is high-fructose corn syrup?

High-fructose corn syrup (HFCS) is made from regular corn syrup, which normally has no fructose. Enzymes are used to turn some of the glucose in corn syrup into fructose. High-fructose corn syrup is not pure fructose. There are two main types of high-fructose corn syrup that are used in foods:

1. 55% fructose/ 45% glucose: this is mostly used in sugary drinks, like soda, as well as in ice cream and other frozen desserts (2)
2. 42% fructose/ 58% glucose: this is mostly used in baked goods, like cookies and crackers, and canned fruits, condiments, and dairy products (2).



How is high-fructose corn syrup different from regular corn syrup and sugar?



Regular corn syrup is almost entirely glucose, and contains no fructose. High-fructose corn syrup is made from regular corn syrup. Enzymes are used to turn some of the glucose into fructose.

Table sugar usually comes from sugar cane or sugar beets, and is composed of a molecule called sucrose. Each sucrose molecule contains one fructose molecule and one glucose molecule bonded together. As a result, table sugar is 50% fructose and 50% glucose. High-fructose corn syrup has slightly higher or slightly lower concentrations of fructose, depending on the formulation (2). The fructose and glucose in HFCS are not bonded together, like they are in sucrose. Instead, they are free molecules.

Why do food manufacturers use high-fructose corn syrup instead of other sweeteners?

High-fructose corn syrup tends to be cheaper than sugar, it provides better browning in baked goods, and has more moisture than sugar with the same level of sweetness, helping help keep foods moist (3).

What is the health impact of too many added sugars in the diet?

Higher added sugar consumption may be related to high triglycerides, low HDL cholesterol, and high LDL cholesterol. These can raise risk of heart disease (4-6).



How are the health effects of high-fructose corn syrup different from table sugar?

Overall, there is little difference between HFCS and regular table sugar (sucrose). This is because they have very similar fructose contents.

Animal and human studies have found that eating large amounts of fructose from HFCS, sucrose, or pure fructose is detrimental to health (7). The negative health effects of high fructose consumption include higher triglycerides, decreased insulin sensitivity, and increased uric acid production (3, 8, 9).

What are the recommendations for added sugars and high-fructose corn syrup?

The *Dietary Guidelines for Americans* recommends that Americans eat less added sugars (1). This includes not just regular sugar, but also HFCS. There is no specific recommendation for HFCS.



Currently Americans on average get about 15% of their calories from added sugars, or around 360 calories a day (4). Added sugars are “empty calories”, in that they typically are in foods that don't provide many nutrients other than calories. Some ways to cut down on the amount of added sugars you eat would be to switch from sugary drinks like soda to water and drinks without sugary sweeteners, and to eat fewer desserts.

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