

# Nutrition News

Department of Human Nutrition



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## Update on the Fructose Controversy

Fructose is a natural component of sugar and honey. The food industry has been using a form of it known as high fructose corn syrup (HFCS) for years because it is inexpensive and has better flavor, texture and “pour-ability” than common sugar. Table sugar, or sucrose, is fructose *bonded* to glucose. Some researchers contend that when fructose is found alone, it may exhibit a different physiological effect on the body than when it is combined with glucose. This also may be true of HFCS. In fact, a few studies have found an association between high fructose corn syrup consumption and adverse health outcomes. However, because of their preliminary nature, additional studies (including epidemiological ones) need to be conducted before any cause and effect can be drawn. In the meantime, the American Medical Association has issued a statement advising the

consumer to follow the 2005 *Dietary Guidelines for Americans* which recommend limiting the amount of caloric sweeteners in our diets.

### What are some of the preliminary findings?

A recent study published in the *Journal of Nutrition* suggests fructose can convert into body fat more quickly and easily than glucose can. Surprisingly, researchers found that when fructose was consumed by their subjects at breakfast time, the calories from fat in food they ate at lunchtime (four hours later) were more likely to be stored (as fat) than burned.

Another study in the *Archives of Internal Medicine* indicates that there may be an increased risk of type 2 diabetes for African American women who drink two or more soft drinks or fruit juices sweetened with HFCS per day. It is speculated that HFCS may exacerbate weight gain, due to the effect it has on insulin and leptin release.

At a meeting of the Endocrine Society earlier this year, Peter Havel from UC Davis presented findings from his 12 week study in which one half of 33 overweight and obese individuals were given 25% of their calories from fructose, and one half were given 25% of their calories from glucose. Both groups gained the same amount of weight (3.3 lbs). However, subjects consuming the fructose had an increase in abdominal fat –belly fat— which is linked to a higher risk of diabetes and heart disease. Those who consumed the fructose also developed a higher level of triglycerides.

Again, these studies are preliminary and require further investigation before it can be said unequivocally that there is a cause and effect of fructose or HFCS and the increase in triglycerides or other health effects.

## **What are consumers to do now?**

While we wait for the results of future studies, it makes good sense to follow the advice of expert scientists who establish the Dietary Guidelines and limit the amount of caloric sweeteners in our diet. It is good for us and good for our children.

### Sources:

American Medical Association. Report 3 of the Council on Science and Public Health. *The Health Effects of High Fructose Syrup*. 2008

Archives of Internal Medicine. vol 168 Issue 12. *Sugar-sweetened Beverages and Incidence of Type 2 Diabetes Mellitus in African American Women*. 2008.

International Food Information Council. *The Science of Sugars*. 2008

Journal of Nutrition. *Dietary Sugars Stimulate Fatty Acid Synthesis in Adults*. June 2008.

## **Sources of Fructose**

Dietary fructose comes from three main sources:

- Sucrose (table sugar)
- High fructose corn syrup
- Fruit\*

Descending order of prevalence of fructose in the American diet:

- Sugar-sweetened beverages such as soft drinks.
- Bakery products such as pastries
- Fruit juice and fruit\*

\*Fruit does not have a high concentration of fructose as it contains fiber and other important nutrients. Whole fruit is an important part of a healthy diet.

For more information about healthy eating, contact your local extension office.

The Food Assistance Program can help people of all ages with low income buy nutritious foods for a better diet.

To find out more, call toll-free 1-888-369-4777.

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