

## High Fructose Corn Syrup — it's even worse than we thought

More studies demonstrate the many health dangers from consuming high fructose corn syrup (HFCS).

They show how this sweetener can damage the liver, cause chronic inflammation, increase the permeability of the intestines (“leaky gut”) and result in what is being called “metabolic syndrome,” the name used for a group of health conditions that includes high blood pressure, high levels of blood sugar, excess fat around the waist, and greater risk for diabetes, heart disease and stroke. [Stanhope 2015, Dekker 2010, Bray 2010, Wiernsperger 2010, Tappy 2010, Beglinger 2015, Hsu 2015]

Additional problems found to be the result of HFCS consumption include arthritis [DeChristopher 2016], chronic bronchitis [DeChristopher 2015], gout [Batt 2014, Kedar 2012, Rho 2011], irritable bowel syndrome and autism.



### Autism and HFCS

Research published in the journal *Clinical Epigenetics* in 2012, concluded that HFCS consumption causes a loss of zinc, a mineral that helps the body detoxify from things like mercury and pesticides, leading to brain inflammation. In addition, maternal zinc deficiency can impair an infant's ability to deal with the toxins he encounters.

### HFCS and the Brain

Research published in the journal *Hippocampus* (February, 2015) showed that diets high in HFCS damage the brain and nervous system. And a UCLA researcher Fernando Gomez-Pinilla found that processed fructose interferes with the ability of the brain to heal after a traumatic injury. [Cerebral Blood Flow and Metabolism, October 2015]

### Some good news about brain injury

“According to emerging science and clinical experience, aggressive intake of omega-3 fatty acids seems to be beneficial to traumatic brain injury, concussion, and post-concussion syndrome patients.” [Science Daily August 2016]

### Glucose vs fructose

With table sugar (sucrose), the amounts of glucose and fructose are balanced, and our bodies have a mechanism for handling it, but when the percentage of fructose climbs above 50%, health problems result. Regular HFCS is either 42 or 55% fructose, but some companies have long used a version that is as much as 90% fructose! According to the Corn Refiners Association, the Food and Drug Administration has been aware of this from the start.

Samples of Coke, Pepsi and Sprite have been found to contain as much as 65% fructose. [Ventura 2010]

The name “high fructose” comes from the fact that the sweetener is high in fructose compared to regular corn syrup, which is just glucose. Corn syrup is created from corn starch which has been broken down into individual glucose molecules. To make HFCS, enzymes are added to corn syrup in order to convert some of the glucose to another simple sugar called fructose. Manufactured fructose is different from the fructose that occurs naturally in fruit and is handled differently by our bodies.



### HFCS seems to be everywhere!

How did HFCS find its way into so many foods and not raise alarms about its danger? Science journalist Faye Flam writes that it crept into our food supply mostly because health warnings about the growing obesity epidemic were focused on the danger of fats. Sadly, while saturated fat (butter, coconut oil, etc.) was being demonized, consumers ate more of the damaging trans fats and didn't

notice the growing amount of HFCS in their food. Corn syrup has been around for a long time, and high fructose corn syrup didn't seem very different, especially since most people think of natural fruit sugar when they hear the word “fructose.”

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## HFCS and obesity

One important factor is that fructose does not stimulate the production of leptin, a hormone that lets the body know we have eaten enough food to feel satisfied. Earlier research has shown that rats who were fed HFCS quickly gained weight.

*“Our study shows for the first time the surprising speed with which humans make body fat from fructose. Once you start the process of fat synthesis from fructose, it’s hard to slow it down.” Dr. Elizabeth Parks, University of Texas Southwestern Medical Center.*

Pediatric endocrinologist and obesity expert Robert Lustig, M.D., believes that HFCS is a major factor in the growing incidence of diabetes in children. He notes, “The fructose in HFCS ‘tricks’ the brain into wanting more food and stimulates excessive and continued consumption.” An excess of fructose leads to fatty liver, which leads to insulin resistance, the first step in developing diabetes.



Glucose is sent to parts of the body by the liver to create energy, but fructose is stored in the liver as fat. Dr. Kimer Stanhope of UC Davis believes, “liver fat decreases insulin’s ability to do its job, and that increases the risk of diabetes....when your insulin isn’t working well it also causes more fructose to be turned into fat...”

*In 2013 an expert on addiction, Dr. Francesco Leri, presented his findings to the Canadian Association for Neuroscience. He explained how HFCS caused an addiction in test animals that is similar to the addictive effects of drugs.*

*“What’s a really creepy irony to me is that we’re growing corn for ethanol and using petroleum for color and flavor.”*

*Bridget Becker*

## How HFCS is hidden in food

How can a company sneak HFCS into foods? As a growing number of consumers get wise to the down side of HFCS, the industry is finding new ways to hide this very sweet, very cheap additive. General Mills received howls of protest in 2015, when the company advertised their Vanilla Chex as containing “no high fructose corn syrup” but listed “fructose” (HFCS) in the ingredients.



### Names used to disguise HFCS include:

- Fructose
- Fructose syrup
- Isolated fructose
- Glucose-fructose
- Isoglucose
- Crystalline fructose
- Corn syrup
- Maize syrup
- Glucose syrup
- Glucose/fructose syrup
- Dahlia syrup
- Fruit fructose

Big Food loves HFCS. It’s very sweet, convenient to use since it’s in liquid form, and, thanks to taxpayer subsidies for corn, it’s cheap. And it’s usually made from GMO (genetically modified) corn.

