

High Fructose Corn Syrup

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Dr. Steve Edelson, Chiropractor (813) 831-8321 in South Tampa recently published a press release on the internet regarding the harmful qualities of high fructose corn syrup. Here is an alternate view sent in from James M. Rippe, M.D.:

Dear Dr. Edelson,

I am writing to offer some comments and raise a few concerns about some statements posted in your above referenced article. I am particularly concerned about some of the statements you made about High Fructose Corn Syrup.

In your article you state, "Although they taste sweet food products that contain high fructose corn syrup should be avoided. The body processes the sugar in high-fructose corn syrup differently than it does old-fashioned cane or beet sugar, which in turn alters your body's natural ability to regulate appetite. High fructose corn syrup blocks the ability of a chemical called leptin, which is the way your fat tells your brain it's there. It's not so much the 150 calories in the soda pop—it's the fact at that same meal you will normally consume an extra hundred calories of food than you would have."

Many of the statements that you made related to High Fructose Corn Syrup are simply scientifically incorrect.

Your article was brought to my attention by a colleague who is aware of the fact that my research laboratory has been the leading source of scientific information related to High Fructose Corn Syrup and sucrose (1-10).

There is wide scientific agreement that there is nothing about High Fructose Corn Syrup that uniquely leads to obesity or other metabolic problems. HFCS is no different from a nutritional or metabolic standpoint than sucrose (table sugar), honey, or concentrated fruit juices. Research in my laboratory (1-10) and in others (11,12) has shown that by every parameter yet measured in human beings High Fructose Corn Syrup and sucrose are identical. We have shown that High Fructose Corn Syrup and sucrose are identical in terms of short term energy regulating hormones such as insulin, leptin and ghrelin. They are also identical in terms of blood sugar response, uric acid and triglycerides, as well as appetite and calories consumed at the next meal.

You may be aware that the American Medical Association looked at whether or not there is a unique link between obesity and High Fructose Corn Syrup and after studying this question for over a year, in June 2008, concluded that: "High Fructose Corn Syrup does not contribute to obesity more than other caloric sweeteners." The American Dietetic Association reached a similar conclusion.

It is not surprising that HFCS and sucrose behave similarly since they are essentially chemically identical. Sucrose is 50% glucose and 50% fructose. HFCS has two major forms used in food, one is HFCS-55 which is commonly used in soft drinks, this contains 55% fructose, 42% glucose and 3% other sugars. HFCS-42 which is used in some baked

goods and other foods, has 42% fructose and 58% glucose. As a practical matter, sucrose and HFCS are absorbed identically by the human body, have the same sweetness and the same calories. From a nutritional standpoint there is good evidence that HFCS, sucrose, honey and cane sugar are essentially interchangeable from a nutritional point of view (15).

The issue of whether HFCS is chemically or metabolically different from sucrose or uniquely a cause of obesity or other metabolic abnormalities has been discussed in two recent expert panels related to nutritive sweeteners which have been published in the American Journal of Clinical Nutrition (13-16) and the Journal of Nutrition (17-19). In both instances the expert panels have unanimously concluded that there is no difference between HFCS and sucrose.

Even the initial authors who suggested there might be a link between HFCS and obesity, Drs. Bray and Popkin, have publically retracted this statement recognizing that it is not scientifically correct.

Perhaps Professor Dr. G. Harvey Anderson best summed up this issue in an editorial in the American Journal of Clinical Nutrition when he stated:

The hypothesis that the replacement of sucrose by HFCS in beverages plays a positive role in obesity is not supported on the basis of its composition, biologic actions, or short-term effects on food intake. Had the hypothesis been phrased in the converse, namely that replacing HFCS with sucrose in beverages would be seen as a solution to the obesity epidemic, its merit would have been seen more clearly. Put simply, a proposal that a return to sucrose containing beverages would be a credible solution to the obesity epidemic would have been met with outright dismissal (20).â€•

You may not be aware that more sucrose (table sugar) is consumed each year in the United States than HFCS. Worldwide, nine times as much sucrose is consumed as HFCS. In parts of the world such as Mexico, Europe and Australia there is essentially no HFCS consumption and yet all of these areas are in the midst of epidemics of obesity and diabetics. I am presenting all of this background information to you in the spirit of hoping that you will consider this body of scientific literature before singling out High Fructose Corn Syrup as somehow uniquely deleterious to health. I am not suggesting that people should consume excessive amounts of any refined sugar. However, I believe it serves no useful purpose and is potentially distracting in the national debate to somehow think that High Fructose Corn Syrup is different than other nutritive sweeteners, or more dangerous.

We need to encourage people to pay attention to their overall caloric intake levels, as well as increase their physical activity. You are in a position to help influence this debate. I would urge you to consider some of the references that I have given you as you think about High Fructose Corn Syrup moving forward.

As you know as a healthcare professional, when we have tried to blame any one specific component of our diet for causing obesity this has never worked. Every time we in the medical community try to do this it makes the public trust us less. I am sure you are aware that in the average American diet more than twice as many calories are consumed as fat than all nutritive sweeteners combined. In fact, as a percentage of calories consumed, the amount of nutritive sweeteners has actually declined over the last 30 years. We are simply eating too much of everything and not exercising enough.

Thank you for the opportunity to offer these comments. I believe that having knowledgeable healthcare professionals, such as yourself, involved in this area can only improve the health and wellbeing of our country.

Sincerely,

James M. Rippe, M.D.

References

1. Lowndes J, Melanson K, Angelopoulos T, Rippe J. Does High Corn Syrup affect Appetite

or ad Libitum Energy Intake? (Presented, Endocrine Society, 2009).
2. Lowndes J, Melanson K, Angelopoulos T, Rippe J. Does High Corn Syrup affect Glucose or Hormones Affecting Appetite? (Presented, Endocrine Society, 2009).

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