# Eliminate This ONE Ingredient and Watch Your Health Soar

**Posted By Dr. Mercola May 02 2011**

**http://www.youtube.com/watch?v=dBnniua6-oM&feature=player_embedded**

A video posted on YouTube in July 2009 on the biochemistry of fructose has gone viral with more than 800,000 views so far. Many of those views are no doubt due to this newsletter, as my two previous articles on Dr. Lustig's work *Sugar May Be Bad, But This Sweetener is Far More Deadly*, and *This Common Food Ingredient Can Really Mess Up Your Metabolism* alone have OVER one million views.

People are watching the lecture at the rate of 50,000 a month, even though it's 90 minutes long, The New York Times reports. Calling sugar a "toxin" or a "poison" 13 times, and referring to it as "evil" five times, the video's author, Robert Lustig explains that sugar is sugar, whether it's the white granulated stuff – commonly known as sucrose – or high fructose corn syrup.

And his stance has nothing to do with calories, according to the NYT: "It's a poison by itself," he says.

*"If Lustig is right, then our excessive consumption of sugar is the primary reason that the numbers of obese and diabetic Americans have skyrocketed in the past 30 years," the NYT says. "But his argument implies more than that. If Lustig is right, it would mean that sugar is also the likely dietary cause of several other chronic ailments widely considered to be diseases of Western lifestyles — heart disease, hypertension and many common cancers among them."*

The NYT added that Lustig has "a mass" of evidence to back up his claims.

In related news, according to the Epoch Times, a report has found that the United States is the fattest of 33 countries studied. Seventy percent of Americans are now overweight, a number that will increase to 75 percent by 2020 and 86 percent by 2030!

## Sources:


- The New York Times April 17, 2011
- The Epoch Times April 19, 2011
- Science Blog April 18, 2011
- The New York Times April 12, 2011
- Science Daily April 25, 2011


Dr. Mercola's Comments:

## "Death by sugar" is not an overstatement...

Evidence is mounting that sugar is the primary factor causing not just obesity, but also chronic and lethal disease. There's really no doubt anymore that sugar is indeed *toxic* to your body, and it's only a matter of time before it will be commonly accepted as a causative factor of most cancer, in the same way as we accept that smoking and alcohol abuse are direct causes of lung cancer and cirrhosis of the liver.

Dr. Robert Lustig, Professor of Pediatrics in the Division of Endocrinology at the University of California, San Francisco, is one of the leading experts on childhood obesity, and has been a pioneer in decoding sugar metabolism. His work has highlighted the major differences in how different sugars are broken down and used by the human body.

If you haven't already seen it I would strongly encourage you to watch Dr. Lustig's lecture. He really is a very compelling lecturer and you will learn loads, particularly about fructose, is ruining your health biochemically.

Because as Dr. Lustig points out, sugar acts as a toxic substance that wreaks havoc on your health.

## Changing Our Diets Could Save U.S. $1 Trillion per Year...

For the first time in history, "lifestyle" diseases -- diabetes, heart disease, and some cancers -- are killing more people than communicable diseases. And treating these *entirely preventable* illnesses costs more than one-seventh of the U.S. GDP.

So it stands to reason that simply *preventing* these diseases could save the US health care system around *one trillion dollars a year!*

How do we prevent them?

By putting an end to this insane over-consumption of sugar.

A recent New York Times opinion piece discussed the dramatic health care savings promised by healthier lifestyle habits and diet:

*"The many numbers all point in the same direction. Look at heart disease: The INTERHEART study of 30,000 men and women in 52 countries showed that at least **90 percent of heart disease is lifestyle related**; a European study of more than 23,000 Germans showed that **people with healthier lifestyles had an 81 percent lower risk**.*

And yes, we definitely know that people will buy anything that's marketed well. Unfortunately, our current food industry doesn't support a switch to whole, healthy foods. The food industry simply will not change without a fierce fight. Processed foods are HUGE business with great profit margins.

They have NO incentive whatsoever to switch to selling and marketing whole foods—unless the market absolutely demands it… I believe the current situation can change, but only if enough people understand the simple truths of healthy eating and refuse to buy sugar-laden processed foods.Dr. David Ludwig, a Harvard-affiliated pediatrician, recently wrote a commentary in JAMA , offering concrete suggestions to turn this disease-producing diet trend around, such as:

- Restructuring subsidies
- Regulating the marketing of food to children
- Adequately funding school lunch programs
- Using existing and future technologies to allow the food industry to retain profits while producing more healthful products

Those are all good suggestions, but while politicians debate and search for their moral compasses, I suggest you do your own homework and change your own diet. At least that way you won't be part of these sad disease statistics.

## The Primary Reason Why Sugar is Such a Pernicious Toxin

Many conventional diet "experts" have strongly disagreed with Dr. Lustig. They contend that sugar in fruits and table sugar in moderation is just fine and part of a normal "healthy" diet.  Well let me make it crystal clear that I could not disagree more strongly with that position.

What they completely fail to appreciate is the obvious fact that should be hitting EVERY expert on the head. Fructose is the NUMBER ONE source of calories in the US. It is beyond shocking that these supposedly intelligent "experts" fail to appreciate that, especially in light of the very carefully elucidated biochemistry that Dr. Lustig reviews.

The central issue is that fructose is so cheap it is used in virtually all processed foods.  If one were able to assiduously keep their total grams of fructose to below 25 per day then it would not be an issue. But the key here is that while that is theoretically possible, precious few people are doing that.

Remember the average person is consuming 1/3 of a pound of sugar EVERY DAY which is five ounces or 150 grams, half of which is fructose or 300 percent more than the amount that will trigger biochemical havoc.  Remember that is the AVERAGE; many consume more than twice that amount.

The moment I first saw Dr. Lustig's presentation nearly two years ago, I knew he was right. I consider this NY Times article a true landmark story that comes out only once every few years. It has given me the foundation and courage to come out even stronger on this issue and you will see that position emphasized in all future newsletters.

I am going to be relentless about WARNING people about this danger in just about every article on weight, cancer, heart disease or diabetes. You might get tired of it but you have to be a beacon of light to your friends and family and let them know so they can change their eating habit and avoid this toxin.

## Abnormally High Sugar Consumption Fuels Disease Rates

It's important to realize that when we talk about "sugar," ALL sugars are included. So when you're evaluating your sugar consumption, you can't stop counting once you've accounted for the number of spoons of table sugar you've added to foods and beverages. You must also include all other types of sweeteners, such as corn-based sweeteners like high fructose corn syrup (HFCS), honey, and agave.

As you probably know, obesity and diabetes rates have dramatically increased in the past 30 years. These increases dovetail nicely with a profound increase in sugar/fructose consumption with the advent of inexpensive HFCS, which is now found in virtually ALL processed foods. The prevalence of added HFCS in foods and beverages is now so great that the *single largest source of calories* for Americans comes from fructose.

It's loaded into your soft drinks, fruit juices, sports drinks, and hidden in most processed foods—from bologna to pretzels to Worcestershire sauce to cheese spread. Even most infant formulas contain the sugar equivalent of one can of Coca-Cola!

To put the US sugar consumption into further perspective, based on USDA estimates the average American consumes 12 teaspoons of sugar a day, which equates to about TWO TONS of sugar during their lifetime. Think about that...

***Two tons!***

Is it any wonder then that the United States is the fattest of 33 countries, with a whopping 70 percent of Americans crowding into the overweight category, according to a report by the Organization for Economic Co-Operation and Development (OECD) issued last year?

No, there can be no doubt whatsoever that this is a direct result of excessive sugar consumption, and the fact that this sugar-rich diet also fuels a number of deadly

diseases is another no-brainer. Yet conventional medicine keeps ignoring the basics, seeking to find magic solutions in the form of a pill...

Do yourself and your family a huge favor, and educate yourself on the health effects of sugar instead, because the truth is, simply making this ONE lifestyle change—drastically reducing your sugar consumption—is the "miracle cure" everyone is seeking!

## Do You have Any Idea How Much Sugar You Consume Every Day?

It's interesting to note that we've long acknowledged that the Western diet is associated with increased rates of obesity, diabetes, heart disease, hypertension, and cancer. Yet the conventional paradigm is extremely reluctant to accept that it is *the sugar content* of this diet that is the primary culprit! Doctors and health officials alike are still trying to make you think that you can have your cake and eat it too, as long as it's in moderation.

Well, that's the whole point. If you eat a diet consisting primarily of processed foods, moderation immediately goes out the window!

Cutting out a few desserts will barely make a dent if you're eating a "standard American diet"—in fact, I've previously written about how various foods and beverages contain far more sugar than a glazed doughnut. Take Vitamin Water, for example. One 20 oz bottle contains 33 grams of sugar, which equates to THREE Krispy Kreme original glazed doughnuts! Another common lunch staple for many kids is Oscar Mayer Lunchables, but just one box of crackers with processed turkey and American cheese contains 36 grams of sugar.

It's like sending them off to school with three-and-a-half doughnuts...

Unfortunately, the Institute of Medicine (IOM) still has not been able to come up with any sort of guidelines on sugar consumption. They acknowledge that there's plenty of research incriminating sugar in increasing disease rates, but have yet to nail down any recommendations for upper limits.

However, if you look at historical data, back in the 1700's, the average person consumed a mere 4 pounds of sugar per year. By the 1800's it had increased to about 18 pounds a year. The primary difference is that they didn't have processed foods back then, so you didn't get 36 grams of added HFCS in your cracker and cheese lunch...

Hence, the answer the sugar over-consumption dilemma should be obvious, but I'll spell it out anyway: *Return to a diet of natural, whole foods and avoid all processed foods and sweetened beverages!*

# How Sugar Turns to Fat and Destroys Your Health

*We now know that fructose elevates uric acid,* which decreases nitric oxide, raises angiotensin, and causes your smooth muscle cells to contract, thereby raising your blood pressure and potentially damaging your kidneys. Increased uric acid also leads to chronic, low-level inflammation, which has far-reaching consequences for your health.

For example, chronically inflamed blood vessels lead to heart attacks and strokes; also, a good deal of evidence exists that some cancers are caused by chronic inflammation.

There are more than 3,500 articles to date showing a strong relationship between uric acid and obesity, heart disease, hypertension, stroke, kidney disease, and other conditions. In fact, a number of studies have confirmed that people with elevated serum uric acid are at risk for high blood pressure, even if they otherwise appear to be perfectly healthy.

Uric acid levels among Americans have risen significantly since the early half of the 20th Century. In the 1920s, average uric acid levels were about 3.5 ml/dl. By 1980, average uric acid levels had climbed into the range of 6.0 to 6.5 ml/dl and are probably much higher now. When your uric acid level exceeds about 5.5 mg per dl, you have an increased risk for a host of diseases, including:

- Hypertension
- Kidney disease
- Insulin resistance, obesity, and diabetes
- Fatty liver
- Elevated triglycerides, elevated LDL, and cardiovascular disease
- For pregnant women, even preeclampsia

This is exactly why I am so passionate about educating you about the dangers of sugar, particularly fructose! I am thoroughly convinced it's one of the leading causes of a great deal of needless suffering from poor health and premature death.

Additionally, sugar/fructose:

- Leads to insulin resistance, which is not only an underlying factor of type 2 diabetes and heart disease, but also many cancers. Researchers from the World Health Organization's International Agency for Research on Cancer have reported that those who are obese and/or diabetic are at greater risk of cancer.
- Tricks your body into gaining weight by fooling your metabolism, as it turns off your body's appetite-control system. Fructose does not appropriately stimulate insulin, which in turn does not suppress ghrelin

(the "hunger hormone") and doesn't stimulate leptin (the "satiety hormone"), which together result in your eating more and developing insulin resistance.
- Fructose rapidly leads to weight gain and abdominal obesity ("beer belly"), decreased HDL, increased LDL, elevated triglycerides, elevated blood sugar, and high blood pressure—i.e., classic metabolic syndrome.
- Fructose metabolism is very similar to ethanol metabolism, which has a multitude of toxic effects, including NAFLD (non-alcoholic fatty liver disease). It's alcohol without the buzz.

## The Sugar/Cancer Connection

The factor that links obesity, diabetes, and cancer is *insulin resistance*.

According to Lewis Cantley, director of the Cancer Center at Beth Israel Deaconess Medical Center at Harvard Medical School, as much as 80 percent of all cancers are "driven by either mutations or environmental factors that work to enhance or mimic the effect of insulin on the incipient tumor cells," Gary Taubes reports, adding:

*"As it was explained to me by Craig Thompson, who has done much of this research and is now president of Memorial Sloan-Kettering Cancer Center in New York, the cells of many human cancers come to depend on insulin to provide the fuel (blood sugar) and materials they need to grow and multiply. Insulin and insulin-like growth factor (and related growth factors) also provide the signal, in effect, to do it.*

*The more insulin, the better they do.*

*Some cancers develop mutations that serve the purpose of increasing the influence of insulin on the cell; others take advantage of the elevated insulin levels that are common to metabolic syndrome, obesity and type 2 diabetes.*

*Some do both.*

*Thompson believes that* ***many pre-cancerous cells would never acquire the mutations that turn them into malignant tumors if they weren't being driven by insulin to take up more and more blood sugar and metabolize it****."*

Some cancer centers, such as the Cancer Centers of America, have fully embraced this knowledge and place their patients on strict low-sugar, low-grain diets. But conventional medicine in general has been woefully lax when it comes to highlighting the health dangers of this additive.

It's quite clear that if you want to avoid cancer, or are currently undergoing cancer treatment, you absolutely MUST avoid all forms of sugar!

## Not All Calories are Created Equal

As described in Taube's brilliant New York Times article, a calorie from glucose, such a potato or bread, is vastly different from a calorie from sugar (which is a 50/50 mix of glucose and fructose, or in the case of high fructose corn syrup, a 45/55 mix.) This is because they are metabolized differently, and hence affect your body in different ways.

As I've explained before, fructose (whether from regular sugar of HFCS) is metabolized primarily by your liver, whereas glucose is metabolized in every cell of your body. Making matters worse, when you consume fructose in liquid form, such as soda, the effect is not only sped up but also magnified.

Your liver converts the majority of this fructose into FAT.

Additionally, since all sugars raise your insulin levels, you eventually end up with insulin resistance. In response, your pancreas starts releasing higher amounts of insulin in an effort to curb your rising blood sugar levels. Eventually, your pancreas loses the battle; your blood sugar levels keep rising, and you end up with full-blown diabetes.

You've now also laid the groundwork for hypertension, heart disease, and cancer, just to name a few.

## What about Healthy Fruit?

As a standard recommendation, I strongly advise **keeping your TOTAL fructose consumption below 25 grams per day.**

But for most people it would also be wise to limit your fructose from fruit to **15 grams or less**, as you're virtually guaranteed to consume "hidden" sources of fructose if you drink beverages other than water and eat processed food. Remember, the average 12-ounce can of soda contains 40 grams of sugar, at least half of which is fructose, so one can of soda ALONE would exceed your daily allotment.

Fifteen grams of fructose is not much -- it represents two bananas, one-third cup of raisins, or two Medjool dates. In his book, The Sugar Fix, Dr. Johnson includes detailed tables showing the content of fructose in different foods -- an information base that isn't readily available when you're trying to find out exactly how much fructose is in various foods. I encourage you to pick up a copy of this excellent resource.

Here's a quick reference list of some of the most common fruits that you can use to help you count your fructose grams:

| Fruit | Serving Size | Grams of Fructose |
|---|---|---|
| Limes | 1 medium | 0 |
| Lemons | 1 medium | 0.6 |
| Cranberries | 1 cup | 0.7 |
| Passion fruit | 1 medium | 0.9 |
| Prune | 1 medium | 1.2 |
| Apricot | 1 medium | 1.3 |
| Guava | 2 medium | 2.2 |
| Date (Deglet Noor style) | 1 medium | 2.6 |
| Cantaloupe | 1/8 of med. melon | 2.8 |
| Raspberries | 1 cup | 3.0 |
| Clementine | 1 medium | 3.4 |
| Kiwifruit | 1 medium | 3.4 |
| Blackberries | 1 cup | 3.5 |
| Star fruit | 1 medium | 3.6 |
| Cherries, sweet | 10 | 3.8 |
| Strawberries | 1 cup | 3.8 |
| Cherries, sour | 1 cup | 4.0 |
| Pineapple | 1 slice (3.5" x .75") | 4.0 |
| Grapefruit, pink or red | 1/2 medium | 4.3 |

| Fruit | Serving Size | Grams of Fructose |
|---|---|---|
| Boysenberries | 1 cup | 4.6 |
| Tangerine/mandarin orange | 1 medium | 4.8 |
| Nectarine | 1 medium | 5.4 |
| Peach | 1 medium | 5.9 |
| Orange (navel) | 1 medium | 6.1 |
| Papaya | 1/2 medium | 6.3 |
| Honeydew | 1/8 of med. melon | 6.7 |
| Banana | 1 medium | 7.1 |
| Blueberries | 1 cup | 7.4 |
| Date (Medjool) | 1 medium | 7.7 |
| Apple (composite) | 1 medium | 9.5 |
| Persimmon | 1 medium | 10.6 |
| Watermelon | 1/16 med. melon | 11.3 |
| Pear | 1 medium | 11.8 |
| Raisins | 1/4 cup | 12.3 |
| Grapes, seedless (green or red) | 1 cup | 12.4 |
| Mango | 1/2 medium | 16.2 |
| Apricots, dried | 1 cup | 16.4 |
| Figs, dried | 1 cup | 23.0 |

## What About Xylitol?

Xylitol is a sweetener of a type known as a sugar alcohol, or polyol. Sugar alcohols are not as sweet as sugar, but they contain fewer calories. One reason that sugar alcohols

provide fewer calories than sugar is because they are not completely absorbed into your body. Because of this, eating many foods containing sugar alcohols can lead to abdominal gas and diarrhea.

However, sugar alcohols -- including xylitol -- do not make “sugar free” foods calorie free. If foods containing sugar alcohols are eaten in large enough quantities, the calories can be comparable to sugar-containing foods. As with all foods, you need to carefully read the food labels for calorie and carbohydrate content, regardless of any claims that the food is sugar-free or low-sugar.

Maltitol, a commonly used sugar alcohol, spikes blood sugar almost as much as a starchy new potato. Xylitol, in comparison, does not spike blood sugar much at all. Pure xylitol also does not usually produce the gas or bloating associated with other sugar alcohols.

In moderation, some sugar alcohols can be a better choice than highly refined sugar or high fructose corn syrup. Of the various sugar alcohols, xylitol is one of the best. When it is pure, the potential side effects are minimal, and it actually comes with some benefits such as fighting tooth decay. All in all, I would say that xylitol is reasonably safe, and potentially even a mildly beneficial sweetener.

## How You Can Protect Your Health and Avoid Cancer, Starting TODAY

It should be abundantly clear that preventing chronic disease such as diabetes, heart disease and cancer requires lifestyle changes, and cutting out sugar in all its forms is an essential element.

The good news is that this is something YOU can do right now—no doctor's visit or prescription required.

Ideally, I recommend that you keep your fructose consumption below 25 grams a day. This includes ALL sources, from beverages to condiments, including the fructose you get from whole fruits. This is especially important if you are overweight or have diabetes, high cholesterol, or high blood pressure.

The easiest way to dramatically reduce your fructose consumption is to avoid sweetened drinks, including fruit juices, and processed foods of all kinds. This will require you to spend a little more time in the kitchen preparing and cooking your meals from scratch using whole ingredients, but it will be one of the best investments you could possibly make!

If you're in the habit of adding sugar to your coffee or tea, try using stevia instead. Many complain about a bitter aftertaste with steeia, but this is typically related to the processing. I find that most people enjoy the liquid stevias like French Vanilla or English Toffee that only require a few drops to sweeten a drink. Alternatively, you could use Lo Han or pure glucose (dextrose) as a sweetener. It costs about $1 a pound and does not cause the adverse biochemical disasters that fructose does.

It is only 70 percent as sweet as sucrose though, so you'll end up using a bit more of it for the same amount of sweetness, making it slightly more expensive than sucrose—but still well worth it for your health as it has ZERO grams of fructose. Glucose can be used directly by every cell in your body and as such is far safer than the metabolic poison fructose.

Switching to cane sugar, honey, date sugar, coconut sugar, brown rice syrup, fruit juice, molasses, maple syrup, sucanat, sorghum, turbinado or agave syrup will NOT ameliorate any of the risks as they all contain HIGH amounts of fructose. Agave is probably the worst of the bunch as it can be as high as 90% fructose. Commercial fruit juices come a close second as they are high in methanol that can contribute to MS, just like aspartame.. Also, do not make the mistake of switching to artificial sweeteners as they can damage your health even more quickly than fructose.

## Bottom Line

If you want to RADICALLY reduce, and in many cases virtually eliminate your risk of the following diseases

- Cancer
- Heart Disease
- Obesity
- Diabetes
- Alzheimer's

then start getting VERY serious about restricting the level of fructose to no more than 25 grams per day. If you already have any of these diseases or are at high risk of any of them, then you are probably better off by cutting that to 10-15 grams per day.

Please remember that I am a fanatic about exercise, especially Peak 8, but exercise will NOT compensate for fructose use and can destroy many of the benefits of your hard work.

So, if you haven't done so already PLEASE get VERY serious about restricting fructose as there is no doubt in my mind when it is consumed in quantities over 25 grams per day it will rapidly accelerate your path towards chronic degenerative disease.