The Best Kind of Sugar

We have seen how important it is to avoid fructose. This means avoiding all kinds of sugary foods that contain sugar since it is half glucose and half fructose. So we must either minimize sweet things or give up all kinds of sugars entirely. Whatever your decision, it helps greatly to have an alternative sweetener that contains no fructose or harmful substances. In this chapter you will discover this alternative sweetener - the best kind of sugar.

Stevia is often proposed as an ideal alternative sweetener as it is not artificial and is derived from the stevia plant. However, the regular use of stevia is worse for health than regular table sugar and should be completely avoided.

Our bodies are not designed or evolved to handle a calorie-free sweetener such as stevia. Experiencing a sweet taste from a food that is not going to provide glucose confounds our body's sugar-handling process. When you consume stevia, this 'tricks' the body into a state of hypoglycemia, however mild and temporary.

Stevia is "sweet" on the palate, so the body assumes it is receiving sugar and primes itself to do so. Glucose is cleared from the bloodstream and blood sugars drop, but no real sugar/glucose is provided to the body to compensate. When this happens, adrenaline and cortisol surge to mobilize sugar from other sources (liver and muscle glycogen, or protein, or body tissue) to bring blood glucose back up.

If there is insufficient glucose from food (or from stored glycogen) this triggers 'gluconeogenesis'. And this in turn cannibalizes muscle tissue to make urgently needed glucose. If you consume stevia regularly and follow a low-carbohydrate diet, there is a possibility that you will lose muscle as a result of consuming stevia.

Furthermore, the frequent release of the stress hormones (adrenaline and cortisol) in response to the stevia-induced hypoglycemia is damaging to our adrenal glands and overall health.

These stress hormones are designed to be utilized when we need to be in a flight-or-fight response–not when we are eating a meal. The consequences of excess stress hormones mean a suppressed immune system, increased inflammation, and lower thyroid function… just to name a few! Regular sugar does not cause these harmful stress hormones, albeit it is bad for health for many other reasons.

Of course, stevia isn't going to affect everyone's blood sugar in the same way or to the same degree, because a lot depends on how much is consumed, your state of health and your kind of diet. It may even be that some people do not experience a significant drop in blood glucose from stevia, but why take the risk?

There are other reasons for avoiding stevia which may or may not apply to the particular type/brand that you are using. Stevia additives such as glycerin, xylitol, and flavorings can cause health problems, depending on how much is consumed. This is not the case with sugar.

What about candida, you may ask? It is widely believed that stevia can help combat candida. In fact, there is no research specifically showing this to be so. It is known that sugar can feed yeast microbes inside the body and hence exacerbate candida. But stevia does not feed yeast microbes, so it has been falsely assumed that it does exacerbate candida. In fact, it is now thought that stevia can indirectly encourage candida by starving the body of glucose. "Stevia may not feed Candida, but going sugar free to address Candida overgrowth is a big mistake because it can lead to systemic candida overgrowth and severely impaired metabolism". Source: Lauren Geertsen, author and certified Nutritional Therapy Practitioner (NTP), Why I Quit Stevia, http://empoweredsustenance.com.

Ironically, stevia can contribute to weight gain around the tummy and waist. Here is what happens:

Stevia provides no glucose, and hence no stored muscle energy (known as glycogen). As a result, if sugar is not immediately ingested to raise blood sugar levels, the body releases extra adrenaline and cortisol to convert muscle protein and fat into glucose. If this pattern is repeated, the frequent release of these stress hormones takes a toll on the body, and one of the most manifest symptoms of excess cortisol is abdominal weight gain.

Additionally, the body cannot convert inactive thyroid hormone T4 into active thyroid hormone T3 without adequate glycogen. The resulting hypothyroidism leads to slowed metabolism. That means a host of symptoms such as weight gain, hair loss and lack of energy. Without adequate dietary sugars, the body cannot create and store glycogen.

Another consideration is that stevia may inhibit fertility in men and women. Sarah Ballantyne, a nutrition scientist, explains that as stevia contains 'steviol glycosides', these can have contraceptive effects in both males and females. In particular, one specific steviol glycoside, called stevioside, has been shown to have potent contraceptive properties in female rats, implying that stevia may have an impact on estrogen, progesterone or both.

Perhaps a main reason for avoiding stevia is that it increases your desire for sweetness. Throughout life, we always want to minimize consumption of sugar in all its guises because it causes many health problems. By consuming stevia, you make it more difficult to wean yourself off the desire for sweetness and you maintain your sugar cravings.

Now we come to diabetes. Many people need to prevent insulin spikes in the blood. In fact, insulin spikes are bad for you, whether or not you have diabetes. We always want to prevent insulin spikes for general good health.

If you're diabetic or pre-diabetic it is particularly important to avoid insulin spikes. When it comes to stevia, confusion arises because stevia is shown to not cause insulin spikes. Consequently, stevia is sometimes recommended as a sugar replacement for those who may be diabetic. But this is bad advice.

Consider the following: if John has a bacterial infection he is likely to be advised to take an antibiotic to kill the infection. But if John does not have a bacterial infection, then taking an antibiotic is bad for health.

The same goes for stevia: if John is diabetic he is likely to be advised to use stevia rather than sugar to prevent insulin spikes. But if John is not diabetic, then using stevia is bad for health.

Put another way, for a diabetic, stevia is the lesser of two evils compared to sugar. Stevia is not healthy, even for a diabetic, but compared to sugar it is less likely to cause insulin spikes.

Diabetics should not be urged to use stevia in their lives. It is better to urge diabetics to do the following: "You should always endeavor to avoid glucose spikes by avoiding processed carbohydrates and sugary foods/drinks. Instead, eat a high carbohydrate diet based on unprocessed starchy foods such as lentils, sweet potatoes and many others. This keeps you energized without causing insulin spikes. If you absolutely must sweeten your tea or some other food (not recommended if you are diabetic) use just a tiny amount of pure glucose (also known as dextrose). But remember, always strive to avoid any kind of sweetening agent altogether. The most important thing for a diabetic is to wean yourself off any kind of sweet food or sweetening agent".

Here is what Belinda says about using stevia: "I am giving Stevia up for the last time I hope. I keep going back to this sweetener because I don't want to use artificial sweeteners. However, each time I do, I experience some effects from stevia I don't like. First of all, I find that it messes up my taste buds. Foods start to taste sour in my mouth when I eat them. Also when I do use another sweetener, I have to use so much more of it because the stevia has gotten my taste buds used to so much sweetness. The other thing I experience with stevia is that it increases appetite. That I didn't expect at all. I thought I was alone until I read on the internet that others are also having this problem. The one thing that I really don't like either is that when I stop stevia I start craving it again. It sets up a craving for sugar. I don't want to be a slave to anything, especially food".

It is well established that artificial sweeteners such as Splenda, Saccharin, Aspartame, Acesulfame-K, Sucralose and others are truly bad for health and should be completely avoided. We won't dwell on this subject as there is ample research showing this to be so. Simply do an Internet search for "avoid Splenda" or "avoid Aspartame", etc. and you will find lots of information. You are strongly urged to avoid such sweeteners for the sake of your health.

Also, avoid sugar alcohols (also known as polyols), including sorbitol, isomalt, lactitol, maltitol, mannitol, xylitol, erythritol and hydrogenated starch hydrolysates. They should be completely avoided in the human diet. This is so for the following reasons:

1. **Indigestion**. Polyols are highly indigestible. Indigestibility is not necessarily a problem when the source is a whole food like plantains or potatoes which contain resistant starch. But polyols are bad news because the body cannot breakdown and assimilate sugar alcohols and they create a gut imbalance.

2. **Gastric distress.** As a result of gut imbalance caused by polyols, this can trigger gastric distress, bloating and diarrhea. For those who suffer from any sort of gut disorder or autoimmune disease, sugar alcohols and processed foods containing them should most especially be avoided.

3. **Disruption of gut lining**. Polyols have the potential to disrupt the functioning of the lining of the gut, that very tissue that is already compromised for those suffering from autoimmune and gastrointestinal disorders.

4. **Proliferation of pathogens**. The body's inability to effectively break down sugar alcohols causes them to arrive for the most part intact when they reach the intestines. At that point, a process called "passive diffusion" takes place whereby the sugar alcohol that was consumed draws water into the bowels. This results in only partial breakdown. The non-metabolized portion begins to rot, creating the perfect environment for undesirable bacteria and pathogens to feed, thrive, and grow.

5. **Autoimmune disease.** An imbalanced intestinal environment where pathogens and other undesirable microbes have a favorable place to exist is exactly the set of conditions that eventually compromise the gut lining, damage the critical enterocytes that line the gut wall, and promote the development of autoimmune disease symptoms.

6. **Harmful yeast.** While it is true that sugar alcohols do not feed pathogenic yeasts such as Candida Albicans (whereas sugar does), the undesirable fermentation of undigested sugar alcohols has the potential to exacerbate yeast problems.

7. **Leaky Gut Syndrome**. Leaky Gut Syndrome (LGS) refers to a condition in which undigested food particles can pass through the "leaky" bowel wall and into the rest of body, leading to a large number of conditions ranging from migraines to autism. Although it has not been proven medically that LGS causes specific illnesses, it is thought that LGS is very common in the population at large. Polyols are known to cause or exacerbate LGS, and for this reason alone they should be avoided.

8. **Acid reflux.** Polyols can contribute to acid reflux problems so those who have issues in this area should avoid it for that reason alone. Chronic acid reflux is a serious problem that can lead to cancer of the esophagus and larynx.

9. **Epilepsy**. Those who suffer from seizures of any kind should stay away from polyols as they are known to increase the frequency of epileptic attacks.

Note: It is widely believed that xylitol is beneficial, in spite of it being a polyol. This is not so. Xylitol is very much a sugar alcohol, and is as unhealthy as any other polyol. Even the idea that xylitol is a 'natural' product is incorrect. Commercial xylitol is made by hydrogenating sugar with powdered nickel-aluminum, a toxic metal. If xylitol can kill your dog or cat (which it can), you just have to wonder if it can be good for you!

In conclusion, don't fall for the lure of sugar alcohols, and avoid products containing such alcohols, such as 'sugar free' chewing gum. While it may seem like a good idea in the short term to wean yourself off sugar, the long term risks to gut health, the potential for autoimmune disease by unbalancing the gut environment, and the damage to the gut wall aren't worth it.

There are two other alternative sweeteners that you may wish to consider: Mannose and Luo Han Kuo, both derived naturally from plants.

Mannose (also known as D-mannose and other names) is sometimes prescribed to combat urinary infections; it is sweet but tends to leave a bitter aftertaste. Mannose is closely related to glucose and is considered safe for long term use. Mannose supplements should be used with caution if you have diabetes as it may make it harder to control your blood sugar.

Luo Han Kuo (also known as **Monk Fruit**) has been used as a sweetener in China for centuries, and is about 200 times sweeter than sugar. It received the USA FDA GRAS (i.e. safe) status in 2009. Luo Han Kuo is somewhat expensive and is difficult to find in the form of powder or crystals for use as a sugar substitute. Like Mannose, it can sometimes leave a bitter aftertaste. Luo Han Kuo can be a good sugar alternative for a diabetic who is just wanting to sweeten tea or coffee.

Now we come to sugar itself and the importance of avoiding glucose spikes in the blood. Whole books have been written on the subject of glucose, insulin and diabetes (not to mention thousands of research papers over the years). This is what it all boils down to: the more insulin sensitive you can remain throughout life, the better your health & well-being, and the longer your lifespan.

Please do read that sentence again as it is probably the most important sentence in relation to optimizing your health and living longer. By just remaining insulin sensitive (the opposite to insulin resistance) you will be doing the best thing possible to remain healthy, avoid illness, and extend your lifespan. "If you can be as insulin sensitive as possible, for you as an individual, you reduce your risk [of serious diseases such as Alzheimer's]". Source: Dr. Peter Attia, M.D., macronutrient thresholds, https://youtu.be/Fne3Dq3z0yQ.

The way you remain insulin sensitive in your life is to avoid glucose spikes in the blood. When glucose shoots up, this triggers an insulin response to bring down the level of glucose. When this happens on a regular basis, the body gradually loses it sensitivity to insulin, i.e. you become insulin resistant. When this happens, you're on the road to diabetes, a host of health problems, and a shortened lifespan.

Another disadvantage of glucose spikes is that it creates sugar and food cravings, leading to binging and junk food consumption. This happens because when insulin goes up it is a 'knee jerk' reaction (a kind of 'panic' measure) to bring down glucose quickly. As a result, glucose goes down temporarily to below the default level. This in turn makes you desperate for energy and hence food cravings and the temptation to eat junk food as a quick fix.

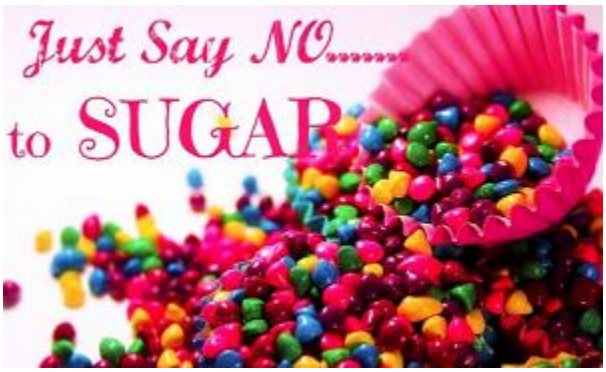
How do you avoid glucose spikes in the blood? You do it by avoiding foods that make your glucose shoot up. Foods that do this are: sugary foods, processed carbohydrate foods, refined flour and grain foods,

sodas, sweetened drinks, fruit juice, any processed foods high in sugar and/or carbs, and last but not least meat & fish. Examples are: desserts, sweets, candies, cookies, waffles, cakes, pizza, bread, carbonated drinks, orange juice, stake and fish (animal protein pushes up insulin).

Realize that processed carbs (cakes, doughnuts, white bread, pies, etc) convert quickly to blood glucose. Instead, focus on slow-digesting starchy carbohydrates such as sweet potatoes, yams, beans and legumes. They give you plenty of energy and fill you up without giving you a glucose spike or making you fat.

Throughout life you always want to avoid glucose spikes by avoiding foods that make your glucose shoot up. This is the most important takeaway message in this book in the context of good health and longevity.

Sugar is widely available in many guises and goes under many names such as: regular table sugar, brown sugars, molasses, honey, syrups (e.g. agave syrup, maple syrup, etc), beet sugar, sucrose, fructose, glucose, dextrose, maltose, and many other kinds of liquid, powdered and crystallized sugars. These are said to be 'real sugars' because they're extracted and processed from plants as opposed to being synthetic concoctions like artificial sweeteners and polyols.



Ideally you should avoid all kinds of sweeteners and sugars in your life (whether natural or synthetic). But if you absolutely must use a sweetener, then consider two things:

1. A 'real sugar' extracted from a plant (in whatever form) is better than artificial sweeteners or polyols.

2. Whatever kind of sugar you may decide to use it should not contain fructose.

Given these two considerations, the best kind of sugar to use is glucose. Unlike regular sugar, pure glucose does not contain harmful fructose so it's an ideal sugar substitute. Furthermore, pure glucose does not cause liver disease and is mostly burnt up as muscle and cellular energy so it does not make you fat.

But use pure glucose in moderation so as to avoid glucose spikes in the blood. As mentioned, whatever kind of sugar or sweetener you may use, and whatever your diet, always strive to avoid glucose spikes so as to remain insulin sensitive.

Note: consider using a glucose monitor, even if you are healthy and not at all diabetic. This enables you to monitor your blood glucose so that you can tweak and refine your eating habits so as to avoid glucose

spikes. Advances in technology, such as the Apple Watch, now allow easy ways to monitor your blood glucose. Here is an image of the Apple Watch showing its glucose monitor:

Pure glucose is available from health food stores and online suppliers. It can be obtained as syrup, as tablets, in crystallized form and as a powder. When buying, it is important to ensure that it is just pure glucose. It should not contain any additives and not be combined with any other sweeteners such as fructose, maltose or lactose. It does not matter whether the glucose is made from corn, beet or sugarcane, provided it is just 100% pure glucose.

Summary: Avoid all kinds of added sugars and sweeteners for optimum health and longevity. If you absolutely must use an added sweetener, use just a little pure glucose, but not enough to make your blood glucose shoot up. Remain as insulin sensitive as possible throughout life.

Source: Science of Longevity by Russell Eaton

For more information on how to extend your life visit our website at www.dragonfirenutrition.com

DRAGONFIRE
NUTRITION