

## The sweetener debate, what to use and why

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What to use to sweeten your food is a popular subject, given that so many people have an affinity for sweets, and it's widely known that refined sugar is one of the worst foods you can eat. You have to be cautious when choosing an alternative, though, because some may actually be worse for you than the real thing, including some sweeteners that are widely regarded as "healthy" but in reality are anything but.

Here is a basic summary of the best and worst sweeteners.

The best:

- Stevia/Truvia
- Sugar alcohols (such as xylitol)
- Honey

The worst:

- Aspartame
- Sucralose (Splenda)
- Fructose (Such as Agave)

Let's start with the worst and analyze why these sweeteners should be avoided.

**Aspartame** is a synthetic chemical composed of three ingredients – two amino acids and a methyl ester bond. Aspartame is the ingredient found in NutraSweet. It is also found in Equal, Spoonful, Equal Measure, AminoSweet, Benevia, NutraTaste, Canderel, and many popular "diet" foods and beverages. Aspartame is a bigger public health threat than high fructose corn syrup and can lead to birth defects, cancer and weight gain. It has also been linked to brain tumors. Aspartame is metabolized inside your body into both wood alcohol (a poison) and formaldehyde (which embalms tissue and is not eliminated from your body through the normal waste filtering done by your liver and kidneys).

**Sucralose (Splenda)** is a synthetic chemical created in a laboratory. In the five-step patented process of making sucralose, three chlorine molecules are added to one sucrose (sugar) molecule. Now, your body has no enzymes to break down this

covalently bound chloride. Why would it? It never existed in nature, so the human body never had a reason to address it. And since it's not broken down and metabolized by your body, they can claim it to be non-caloric—essentially, it's supposed to pass right through you.

However, the research (which is primarily extrapolated from animal studies) indicates that about 15 percent of sucralose IS in fact absorbed into your digestive system, and ultimately stored in your body.

You've probably heard the claims that the FDA has reviewed over 100 studies on Splenda and are satisfied that it's a safe product, but what you don't hear is that most of those studies were on animals, and that they actually revealed plenty of problems! For example, some of these studies revealed

- Decreased red blood cells -- sign of anemia -- at levels above 1,500 mg/kg/day
- Increased male infertility by interfering with production and vitality, as well as brain lesions at higher doses
- Enlarged and calcified kidneys
- Spontaneous abortions in nearly half the rabbit population given sucralose, compared to zero aborted pregnancies in the control group
- A 23 percent death rate in rabbits, compared to a six percent death rate in the control group

Only two human trials on sucralose were completed and published prior to the FDA approving Splenda for human consumption, and these two trials included a total of just 36 human subjects.

Worse yet, the longest running trial lasted only four days, and looked at sucralose in relation to tooth decay, not human tolerance. As for determining the absorption of Splenda into the human body, a mere eight men were studied.

Based on that singular human study, the FDA allowed the findings to be generalized as being representative of and regarded as "safe" for the entire human population!

**Fructose (Such as Agave)** is a bad sweetener which masquerades as a healthy one. It really is only toxic in large doses taken chronically. Just as smoking a few cigarettes will likely not cause lung cancer, small doses of fructose are not an issue since it is a natural sugar found in all fruits. However when it is consumed in doses that most people use, which is 500% of the dose that people consumed in pre-industrial times, then metabolic

toxicity occurs. At these dosages I believe it is likely more toxic than even artificial sweeteners.

Agave can be worse than fructose because it has higher fructose content than any commercial sweetener -- ranging from 70 to 97 percent, depending on the brand, which is much higher than something with a high fructose content, which averages 55 percent.

Part of what makes fructose so unhealthy is that it is metabolized to fat in your body far more rapidly than any other sugar. The entire burden of metabolizing fructose falls on your liver, and it promotes a particularly dangerous kind of body fat, namely adipose fat.<sup>1</sup> This is the fat type of fat that collects in your abdominal region and is associated with a greater risk of heart disease. Further, fructose:

- 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.
- 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.
- Over time leads to insulin resistance, which is not only an underlying factor of type 2 diabetes and heart disease, but also many cancers.

Better options include:

**Xylitol.** Sugar alcohols such as xylitol are not as sweet as sugar, but they contain fewer calories. One reason that sugar alcohols provide fewer calories than sugar is that they are not completely absorbed into your body. Because of this, eating many foods containing sugar alcohols can lead to abdominal gas and diarrhea. Xylitol does not spike blood sugar much at all. Pure xylitol also does not usually produce the gas or bloating associated with other sugar alcohols. So in moderation, some sugar alcohols can be a better choice than highly refined sugar, artificial sweeteners, agave, 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. Note that xylitol is toxic to dogs and some other pets, so be sure to keep it out of reach of your family pets.

**Honey.** High-quality honey contains natural antioxidants, enzymes, amino acids, vitamins, and minerals. Unfortunately, most of the honey eaten today has been heavily processed. Like most foods that have been chemically refined, many of the healthful benefits have been reduced or eliminated. Commercial honey is often treated with an excessive heating process that can destroy some of the critical natural enzymes, vitamins, and minerals.

If you do consume honey, make sure it is unprocessed Manuka honey, which has such potent antibacterial properties, is now being used in medical products such as wound dressings. However, remember that all honey is very high in fructose, so it would be best to limit your use of even Manuka honey to less than one teaspoon per day. Raw honey is another option but doesn't have the same potent antibacterial properties. This would give you about 20 grams of fructose and leave you with a little room for a healthy serving of fresh fruit, or some of the inevitable fructose that is added to so many other foods that you normally eat.

**Stevia.** The herb stevia is one of my favorite options for an occasional sweetener. It's a safe, natural plant that has been around for over 1,500 years and is ideal if you're watching your weight, or if you're maintaining your health by avoiding sugar. It is hundreds of times sweeter than sugar and truly has virtually no calories. Personally, I believe stevia is the best sweetener available today. Many complain about a bitter aftertaste with stevia, but this is typically related to the processing. Truvia is a brand name of Stevia and is essentially the same, although some people prefer the taste of Truvia over Splenda.

As always, ask your doctor or nutritionist for guidance in choosing the right way to sweeten food for yourself. In the case of someone who is nursing or pregnant, artificial sweeteners should be avoided at all costs.