

Sucralose (Splenda)

You can read more about the dangers of Splenda and other artificial sweeteners in *Sweet Deception: Why Splenda, NutraSweet, and the FDA May Be Hazardous to Your Health* by Dr. Joseph Mercola.

Information from this article was obtained at:
http://en.wikipedia.org/wiki/Sugar_substitute
and
<http://en.wikipedia.org/wiki/Sucralose>

Sucralose is a chlorinated sugar that is about 600 times as sweet as sucrose (table sugar). It is used in over 4,500 products, including beverages, frozen desserts, chewing gum and baked goods. Unlike other artificial sweeteners, it is stable when heated and can therefore be used in baked and fried goods. Sucralose is minimally absorbed by the body and most of it passes out of the body unchanged.

Most of the controversy surrounding Splenda, a sucralose sweetener, is focused not on safety, but on its marketing. It has been marketed with the slogan, "Splenda is made from sugar, so it tastes like sugar." Sucralose is a chlorinated sugar prepared from either sucrose (table sugar) or raffinose. With either base sugar, processing replaces three oxygen-hydrogen groups in the sugar molecule with three chlorine atoms.

Safety concerns pertaining to sucralose revolve around the fact that it belongs to a class of chemicals called organochlorides, some types of which are toxic or carcinogenic; however, the presence of chlorine in an organic compound does not in any way ensure toxicity. The way sucralose is metabolized may suggest a reduced risk of toxicity. For example, sucralose is extremely insoluble in fat and thus does not accumulate in fat as do some other organochlorides; sucralose also does not break down and will dechlorinate only under conditions that are not found during regular digestion (i.e. heavy heat applied to the powder form of the molecule).

The bulk of sucralose ingested is not absorbed by the gastrointestinal (GI) tract and is directly excreted in the feces, while 11-27% of it is absorbed.¹ The amount that is absorbed from the GI tract is largely removed from the blood stream by the kidneys and eliminated in the urine with 20-30% of the absorbed sucralose being metabolized. Keep in mind that these percentages will be different for every person.

History

Sucralose was discovered in 1976 by scientists from Tate & Lyle, working with researchers Leslie Hough and Shashikant Phadnis at Queen Elizabeth College (now part of King's College London). On a late-summer day, Phadnis was told to test the powder. Phadnis thought that Hough asked him to *taste* it, so he did. He found the compound to be exceptionally sweet, as sucralose is 600 times as sweet as sucrose. roved for use in Canada in 1991 and was approved in the United States in 1998. As of 2008, it had been approved in over 80 countries.

Product Uses

Sucralose can be found in more than 4,500 food and beverage products. It is used because it is a no-calorie sweetener, does not promote dental cavities,^[7] and is said to be safe for consumption by diabetics. Sucralose is used as a replacement for, or in combination with, other artificial or natural sweeteners such as aspartame, acesulfame potassium or high-fructose corn syrup.

Sucralose is used in products such as candy, breakfast bars and soft drinks. It is also used in canned fruits wherein water and sucralose take the place of much higher calorie corn syrup based additives. Sucralose mixed with maltodextrin or dextrose (both made from corn) as bulking agents is sold internationally by McNeil Nutritionals under the Splenda brand name.

In the United States and Canada, this blend is increasingly found in restaurants in yellow packets, in contrast to the blue packets commonly used by aspartame and the pink packets used by those containing saccharin sweeteners; though in Canada yellow packets are also associated with the SugarTwin brand of cyclamate sweetener.

Cooking

Sucralose is a highly heat-stable artificial sweetener, allowing it to be used in many recipes with little or no sugar. Sucralose is available in a granulated form that allows for same-volume substitution with sugar. This mix of granulated sucralose includes fillers, all of which rapidly dissolve in liquids. Unlike sucrose which dissolves to a clear state, sucralose suspension in clear liquids such as water results in a cloudy state. For example, gelatin and fruit preserves made with sucrose have a satiny, near jewel-like appearance, whereas the same products made with sucralose (whether cooked or not) appear translucent and marginally glistening. While the granulated sucralose provides apparent volume-for-volume sweetness, the texture in baked products may be noticeably different.

Sucralose is non-hygroscopic, meaning it does not attract moisture, which can lead to baked goods that are noticeably drier and manifesting a less dense texture than baked products made with sucrose. Unlike sucrose which melts when baked at high temperatures, sucralose maintains its granular structure when subjected to dry, high heat (e.g., in a 350°F (177°C) oven). Thus, in some baking recipes, such as crème brûlée, which require sugar sprinkled on top to partially or fully melt and crystallize, substituting sucralose will not result in the same surface texture, crispness, or crystalline structure.

Health and safety regulations

Sucralose has been accepted by several national and international food safety regulatory bodies, including the U.S. Food and Drug Administration (FDA), Joint Food and Agriculture Organization/World Health Organization Expert Committee on Food Additives, The European Union's Scientific Committee on Food, Health Protection Branch of Health and Welfare Canada, and Food Standards Australia-New Zealand (FSANZ). Sucralose is the only artificial sweetener ranked as "safe" by the consumer advocacy group Center for Science in the Public Interest. According to the Canadian Diabetes Association, the amount of sucralose that can be consumed on a daily basis over a person's lifetime without any adverse effects is 15 mg/kg/day.

What is Splenda/sucralose?

Splenda is made from sucralose, a sugar substitute that is 600 times sweeter than sugar. It doesn't have calories, thus it is marketed as a diet substitute for sugar. People love Splenda as a sugar substitute because it has tastes like sugar and leaves no after taste.

While most artificial sweeteners can't be used in baking, sucralose remains stable when exposed to heat, making it great for baking and has a longer shelf life. This makes it a perfect sweetener for many processed foods, including baked goods, baking mixes, gum, candies, frostings, salad dressings, jams and jellies, processed fruits and fruit juices, flavored waters, fruit ices, syrups, sauces, toppings, imitation cheeses and dairy products, milk substitutes, gelatins, puddings, fillings, and in beverages.

(The FDA gave permission for Splenda to be used in all of these types of foods.)

Although it was marketed as "made from sugar," it is not sugar. Sucralose is made by chemically altering the structure of sugar molecules by adding chlorine atoms in place of hydroxyl groups.(Everything You Need to Know About Sucralose, International Food Information Council)

Sucralose is therefore chlorinated sugar; a chlorocarbon. Chlorocarbons are poisonous; they are used in bleach, disinfectants, insecticide, poison gas, and hydrochloric acid.(<http://www.holisticmed.com/splenda/bowen.html>) Because it technically started as sugar, sucralose can be marketed as "made from sugar."

To find and avoid the sweetener, you have to be on a mission to do so, and read the ingredient label on food products.

Why would you want to go to the avoid sucralose?

The US FDA approved sucralose in 1998, but it has not yet been approved in most European nations. In the pre-approval stage, the FDA conducted short-term tests that actually found the potential for toxicity, but it was approved anyway. According to the "New Scientist" November 23 1991 edition on page 13, the pre-approval tests conducted on animals showed toxicity:

- Shrunken thymus glands (up to 40% shrinkage)
- Enlarged liver and kidneys
- Atrophy of lymph follicles in the spleen and thymus
- Increased cecal weight
- Reduced growth rate
- Decreased red blood cell count
- Hyperplasia of the pelvis
- Extension of the pregnancy period
- Aborted pregnancy
- Decreased fetal body weights and placental weights
- Diarrhea

Additionally, the government doesn't monitor health effects after the initial tests. There is no warning information of potential side effects on the labels of the sweetener's products. There have been no long-term tests (longer than six months) done on the side effects of consuming Splenda or sucralose. The largest trial only included 128 people and lasted only three months. The only independent test was done by Duke University and published in the Journal of Toxicology and Environmental Health, and it was funded by the sugar industry.

We should not be eating products that are completely untested, especially when so many people report severe problems from the product. Although it was also a short-term test, Duke's study found that sucralose contributes to obesity, destroys healthy intestinal bacteria, and prevents prescription drugs from being absorbed properly. Since its U.S. introduction in 1999, Splenda is now the leading artificial sweetener on the market. (Browning, Lynnley, "Makers of Artificial Sweeteners Go to Court", New York Times Business section, April 6, 2007)

Also since its introduction, while no independent, long-term tests were conducted on the healthfulness of sucralose, people have reported adverse reactions like skin rashes/flushing, panic-like agitation, dizziness and numbness, diarrhea, swelling, muscle aches, joint pain and stiffness, headaches, intestinal cramping, bladder issues, and stomach pain, according to the Sucralose Toxicity Information Center (STIC). STIC concludes that, "While it is unlikely that sucralose is as toxic as the poisoning people are experiencing from Monsanto's aspartame, it is clear from the hazards seen in pre-approval research and from its chemical structure that years or decades of use may contribute to serious chronic immunological or neurological disorders."

Inside the body, while much of the artificial sweetener isn't detected by the body and is flushed out in urine, as much as 11-27 percent is absorbed, according to the US FDA's test in 1998. (<http://vm.cfsan.fda.gov/~lrd/fr980403.html>.) The makers of the sweetener found even higher absorption levels, of between 10.4% and 30.6% in healthy males. The same test also found that anywhere from 1.6% to 12.2% accumulates in the body. (Roberts, A., A.G. Renwick, J. Sims, D.J. Snodin, 2001. "Sucralose Metabolism and Pharmacokinetics in Man," Food and Chemical Toxicology, Volume 38, Supplement 2, pages S31-S41, 2000.)

Problems for the environment as well as the body

Anything that the body doesn't absorb washes out in urine, which then washes into the environment. We have no way of knowing what that is doing to the environment, our water supply, to fish, etc, because the FDA did not require an Environmental Impact Statement for sucralose, because in their words, "the action will not have a significant impact on the human environment".

Sucralose and Splenda are not acceptable "diet" foods:

Marketing Splenda as a diet alternative is a crime. Splenda executives are preying on the very people who need to avoid sucralose the most; the overweight, the elderly, and young people looking to stay in shape. This chemical has been proven to have severe effects on the body. People should not be treated this way. Pass this information to everyone you care about.

According to the FDA, "increases in glycosylation in hemoglobin imply lessening of control of diabetes." In English, that means that sucralose is terrible for people with diabetes. Not only do dieters contaminate their bodies with toxins, they also might be increasing their appetite by eating the artificial sweetener.

Consumers' Research Magazine said "There is no clear-cut evidence that sugar substitutes are useful in weight reduction. On the contrary, there is evidence that these substances may stimulate appetite".

Here are some natural sugar alternatives:

- Sucanat -- Whole cane sugar with water removed.(Florida Crystals and Nutra Cane)
- Stevia -- From a South American plant. It's 300 times sweeter than sugar, so use sparingly (SunnyDew)
- Maple Syrup
- Barley Malt -- (Sunspire)
- Brown Rice Syrup
- Molasses
- Agave Nectar

You can also sweeten foods with fruit juice, and can buy fruit juice-sweetened products.

Remember, you may initially pay more for some of these sugar alternatives, but you pay with your health (and potentially your life) with the cheaper non-caloric, chemically-based sugars.