

Sucralose: A Safe Artificial Sweetener?

Have you been wondering about the safety of sucralose which is most commonly known as Splenda™? We are led to believe that the product can be ingested with little regard for potential side effects. Besides, it's the weight loss we're wanting...right? Have artificial sweeteners have been the saviors of Americans ever-expanding waist lines? Let's look at the data. Historically, all other artificial sweeteners have been heavily marketed as products that will help you lose weight. However, it is clear that the majority of Americans are not winning the battle of the bulge. Since 1980, the obesity rates and consumption of artificial sweeteners have both soared. What makes the consumer think that sucralose is going to make a difference?

Sucralose is manufactured chemically by adding chlorine to sugar. This involves chemically changing the structure of the sugar molecules. Research in animals has shown that sucralose can cause a multitude of problems in rats, mice and rabbits such as:

- Shrunken thymus glands, up to 40 % shrinkage (a gland that is a key component of our immune system)
- Swelling of the liver and kidneys
- Calcification of the kidneys
- 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

An important issue is that there are relatively few studies concerning the safety of sucralose. As of November 18, 2004, there were these many studies cited in the National Library of Medicine:

Saccharin: 3001 studies*

Aspartame: 774 studies*

Cyclamates: 653 studies*

Sucralose: 76 studies*

**Number of studies determined by MEDLINE search.*

Most of the studies were on animals and few human studies of safety have been published on sucralose. One small study of diabetic patients using the sweetener showed a statistically significant increase in glycosylated hemoglobin (HgbA1c) which is a blood test used to monitor diabetes. According to the FDA, "increases in glycosylation in hemoglobin imply lessening of control of diabetes".

There are no long term human research studies on sucralose. According to the Medical Letter on Drugs and Therapeutics, “Its long-term safety is unknown.”

The manufacturer, Johnson & Johnson, claims that sucralose is not absorbed nor metabolized by the body. According to the FDA’s “Final Rule” report, 11% to 27% of sucralose is absorbed in humans, and the rest is excreted unchanged in the feces. According to the Japanese Food Sanitation Council, as much as 40% of ingested sucralose is absorbed.

Artificial sweeteners have not helped Americans keep their weight down. According to Consumers Research Magazine, “There is no clear-cut evidence that sugar substitutes are useful in weight reduction. On the contrary, there is some evidence that these substances may stimulate appetite.”

You no longer need to buy into the myth that artificial sweeteners : #1 will help you lose weight and # 2 are safe for consumption. With no established system for monitoring and tracking post-approval adverse effects, how can it be established whether large-scale and long-term consumption of sucralose is safe? If you are continuing to consume sucralose and other artificial sweeteners, you are part of the grand experiment. However, there are many other healthy and natural sweeteners that can be used to replace the artificial ones and even white sugar.

Natural Sweeteners:

Raw honey is a health-promoting sweetener. It keeps well and never spoils. Honey contains two different sugars: dextrose, which is assimilated very quickly, giving the instant boost of energy the body needs. It also contains levulose that is absorbed more slowly and maintains the sugar level for some time. Honey’s double-action sugars can quickly satisfy a craving for sweets and tend to maintain that sense of satisfaction for awhile. It also has anti-bacterial properties. (Important note: Honey is never indicated orally for infants.)

Two natural sweeteners which will not spike glucose levels and are safe for diabetics are “**lo han**” and **stevia**. These are both from plants and can be found in natural food stores. Stevia is an herb that has been used as a sweetener in South America for hundreds of years. After centuries of use in Paraguay, and decades in Japan, there has yet to be a complaint that stevia, in any of its consumable forms, has produced any harmful side effects. For diabetics using artificial sweeteners such as sucralose (which does not cause a spike in blood sugar), we recommend a gradual use of stevia. You can initially use stevia in drinks like tea, coffee or lemonade. There are many cookbooks available with recipes using stevia.

Another natural sweetener is **xylitol**. Recent health guidelines out of Scotland recommend this natural sweetener to prevent cavities. One controlled study associated the use of xylitol with a re-growth of dental enamel, helping to reverse and heal existing

cavities. Another study showed that mothers who chewed xylitol gum during their pregnancies had children (who were breast-fed) with less cavities as compared to the offspring of mothers who had fluoride treatments.

In addition to xylitol's anti-cavity properties (usually in the form of gum, mints or toothpaste), it is used as an intranasal spray to protect against sinus and ear infections. It prevents bacteria from adhering to the cells that line the nose and sinuses.

References:

- FDA "Final Rule" for Sucralose, 21 CFR Part 172, Docket No. 87F-0086.
- Lord GH, Hewberne PM. Renal mineralization-a ubiquitous lesion in chronic rat studies. Food Chem Toxicol 1990 Jun;28:449-55.
- Labare MP, Alexander M, Microbial co-metabolism of sucralose, a chlorinated disaccharide, in environmental samples. Appl Microbiol Biotechnol. 1994 Oct;42:173-8.
- Hunter BT. Sucralose. Consumers' Research Magazine, Oct 90, Vol. 73 Issue 10, pg. 8.
- Sucralose-a new artificial sweetener. Medical Letter on Drugs & Therapeutics, 07/03/98, Vol.40, Issue 1030, pg. 67.

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Blackbird Clinic PLLC specializes in naturopathic and nutritional medicine. Dr. Andrea Black, ND is the medical director and has been a board certified naturopathic physician since 1987. For more information call Blackbird Clinic PLLC at 509-422-3700 or visit our website at www.blackbirdclinic.com.