SUGAR SUBSTITUTES

ASPARTAME
Most people consider Aspartame to be safe, since it has been on the market since 1981 and approved for general use in the US since 1996. It is not well known however, that it took the FDA 16 years to approve it. Neuroscientists and doctors objected, citing many animal studies and the serious side effects that had been witnessed. A quote taken from the US Congressional record in 1985 states “Aspartame is inherently, markedly and uniquely unstable in aqueous media”, yet it was approved by the FDA for use in soft drinks and beverages. By 1987, the FDA had already received over 3600 consumer complaints about aspartame. The side effects that had been reported were: headaches, depression, brain tumors and arrhythmia. It appeared that Aspartame could mimic the symptomatology of epilepsy, ADD, systemic Lupus, MS, hypothyroidism, Fibromyalgia, Chronic Fatigue, Lyme’s disease and Meniere’s disease.

Aspartame is a synthetic substance, 200 times sweeter than sugar. It is marketed under such names as “Equal”, “NutraSweet” and “Sugar Twin” in North America. It is made from the chemical combining of two amino acids, aspartic acid and phenylalanine, fused by a third component, methanol. Methanol bonds the two together and when it is released at only 86 °F it becomes a poisonous free radical. Remember, the body’s normal temperature is 12.6 degrees higher than what is required to unbind this chemical threesome. Methanol is a well known carcinogen and neurotoxin and it breaks down into formic acid and formaldehyde, which is essentially embalming solution! Phenylalanine, one of the two amino acids in this trio is able to cross the blood brain barrier and can cause excitotoxin effects such as seizures. Further chemical breakdown of phenylalanine results in a substance called diktopiperazine (DKP) – a known carcinogen. Aspartic acid, the third molecule, is also an excitotoxin which can initiate cardiac arrhythmias and can be especially dangerous when ingested in larger amounts, especially when combined with low magnesium levels in the body. When magnesium is deficient, the glutamate receptors become hypersensitive to excitation which can lead to heart arrhythmias and even death. They are beginning to link young athletes who have died suddenly, to a possible increased intake of aspartame combined with low magnesium (D – 2), low omega 3 (A-3) and high calcium intake (D-1). Methanol, the third component of aspartame decomposition is none other than “wood alcohol” – known to cause liver damage, blindness and death. No amount of wood alcohol is considered acceptable for human consumption. High consumption of aspartame equals high consumption of methanol. According to Dr. Hulda Clark, in her research highlighted in the book A Cure for All Diseases, she tells us that wood alcohol is a solvent and this particular solvent has an affinity for the pancreas. Clark further outlines that when solvents combine with certain parasites, especially flukes, cancer is created, as are certain types of Diabetes. Although Diabetics are gravitating to aspartame as a sugar replacement, her research has shown the by-product of wood alcohol is a serious threat to an already compromised pancreas of a diabetic condition and cautions strongly against its use. Some of the metabolites of aspartame are secreted by the body while others are stored in fat cells which will lead to cumulative effects over a period of years. **Be alert that aspartame is often listed as an inert ingredient in prescription medicines.

NEO TAME
Neo tame is chemically related to Aspartame without the amino acid molecule, phenylalanine, which can be dangerous to individuals with a genetic condition known as Phenylketonuria (PKU). These individuals lack the enzyme required for the break down of this essential amino acid. Neo Tame is sweeter than aspartame, however, at present, there are no studies on its safety available to the public.
SUCRALOSE
Sucralose is derived from table sugar and is currently marketed under the name “Splenda”. A sugar molecule is modified to replace one hydroxyl group (water) with a chloride group (chlorine). It is, therefore, a chlorinated sugar derivative that is 600 times sweeter than sugar. The more accurate name for the structure of sucralose would be “Trichlorogalactosucrose”. According to the book *Sweet Deception*, sucralose is made when sugar is treated with trityl chloride, acetic anhydride, hydrogen chloride, thionyl chloride and methanol in the presence of dimethylformamide, 4 -methylmorpholine, toluene, methyl isobutyl ketone, acetic acid, benzyltriethlyammonium chloride and sodium meth oxide, making it unlike anything found in nature.

The first two ingredients in Splenda are dextrose and maltodextrin, which are used to increase bulk and are classified as carbohydrates, which contain calories. One cup of Splenda contains 96 calories and 32 grams of carbohydrates, which is substantial for people with diabetes. This little known fact can go unnoticed due to the label claims of “no-calorie sweetener” approved by the FDA.

Pre-approval studies show that Sucralose caused shrunken thymus glands in up to 40% of animals tested, as well as enlarged livers and kidneys and aborted pregnancies. The chlorine added to sucralose is not similar to the chlorine of common table salt. It is more like ingesting tiny amounts of chlorinated pesticides. Sucralose does breakdown into a chemical within the body (1, 6 dichlorofructose), a chemical that has not currently been adequately tested in humans.

Alleged symptoms associated with Sucralose are gastrointestinal issues such as bloating, gas diarrhea, and nausea, skin irritations such as itching, rash, and hives, swelling, wheezing coughing, runny nose, chest pain, heart palpitations, anxiety, anger, mood swings and depression.

SACCHARIN
Saccharin was the first artificial sugar substitute to be discovered. It is 200 times sweeter than sugar and marketed under the name “Sweet ‘N Low”. It was discovered in 1879 accidentally at John Hopkins University by two scientists experimenting with toluene derivatives. Toluene is a well known toxic solvent commonly found today in nail polish and nail polish remover. The truth, saccharin is a product derived from coal tar or anthranilic acid.

The chemical giant Monsanto, also the makers of Aspartame was founded in the early 1900’s for the sole purpose of producing and distributing saccharin. In 1903 Coca-Cola Inc. became Monsanto’s first corporate purchaser of saccharin. Twelve years after Saccharin first came to market it was banned; however, the ban was lifted during World War I and II due to a shortage of real sugar.

Originally, saccharin was combined with cyclamate, another artificial sweetener, in an attempt to curb the metallic taste of saccharin. Cyclamates were later banned in the US but continue to be used in approximately 55 countries worldwide including Canada.

Research studies assessing the effects of saccharin founded since the 1970’s, found a strong link between saccharin ingestion and bladder cancer in lab rats. To date, saccharin is currently sold on the open market (excluding the US) with no warnings. It is known for increased shelf-life and is widely used in fountain diet beverages and also extensively in baked goods, in addition to aspartame, as the compound remains stable at high temperatures.
ACESULFAME POTASSIUM (Acusulfame K)
A chemical derivative of potassium, introduced in 1967 and is currently marketed in North America as “Sunette”, “Sweet and Safe” or “Sweet One”.

Compared to other sweeteners:
- 200 times sweeter than table sugar
- 180-200 times sweeter than sucrose /table sugar
- Equivalent to aspartame
- ½ the sweetness of saccharin
- ¼ sweet as sucralose

Similar to saccharin, it has a slightly bitter aftertaste. Acesulfame K is often blended with other sweeteners such as sucralose or aspartame, which gives a more sugar-like taste. Its chemical substance is stable under heat and in moderately acidic conditions, allowing it to be used in baking, or in products that require a long shelf life. This sweetener is often found in pharmaceutical products such as chewable and liquid medications. Although claims state this chemical compound is not absorbed, The Center for Science in the Public Interest (CSPI) reports that it can break down into acetoacetamide – a chemical known to negatively affect thyroid in rats.

HIGH FRUCTOSE CORN SYRUP (HFCS)
This product is widely used in almost all processed, packaged products found on the grocery store shelves. It is actually hydrolyzed corn starch, but despite the considerably more complicated processing, high-fructose corn syrup is cheaper to use than regular sugar. Additionally, the sugars in the syrups act as a preservative, which is why HFCS is now added liberally. The name is misleading; ‘high fructose’ refers to the hydrolyzing process which leaves this product higher in fructose than other corn syrups.

The glycemic index of HFCS is relatively high in comparison to table sugar. Natural fructose (fruit sugar) has a glycemic index of 32, table sugar – 92 vs. High Fructose Corn Syrup - 89.

In 2005, Americans each consumed on average, more than 42 pounds (19 kilograms) of high-fructose corn syrup [source: Corn Refiners Association]. The average American also consumes 200 daily calories from HFCS, which is close to 10 percent of all daily calories consumed! Unlike glucose, which is metabolized a number of ways by your body, fructose is only metabolized by your liver. When the liver receives more fructose than it can handle, the excess sugars are turned into fats in the form of triglycerides, which are harmful to your arteries and your heart. Researchers found that fructose does not stimulate production of insulin, leptin (an appetite repressing hormone) or ghrelin (hunger stimulating hormone), all of which play a part in telling the body how much it needs to eat. This creates confusion in relation to fullness vs. hunger within the body.

SUGAR ALCOHOLS
Foods that contain sugar alcohols can be legally labeled as “sugar free”; they can replace a full calorie sugar sweetener. Sugar alcohols are believed to be beneficial substitutes for sugar. Claims of reducing the glycemic response, reducing dental cavities and lowering calorie intake have been made without differentiating between each one.

Sugar alcohols naturally occur in many fruits and vegetables and they are anywhere from 25-100% sweeter than table sugar.
They are packaged by their name:

- **Sorbitol** - a sugar substitute, may be listed under the inactive ingredients list. A nutritive sweetener which provides dietary energy: 2.6 kilocalories (11 kilojoules) per gram versus the average 4 kilocalories (17 kilojoules) for carbohydrates. It often is used in diet foods (including diet drinks and ice cream), mints, cough syrups, and sugar-free chewing gum.
- **Mannitol** – found in abundance in nature particularly in trees, marine algae and mushrooms, absorbed slowly from the intestinal tract; 1.6 calories per gram.
- **Xylitol** - extracted from corn fiber, birch, raspberries, plums, and corn; as sweet as sucrose but two-thirds the food energy. Initial consumption may result in bloating, diarrhea, and flatulence.
- **Erythritol** - occurs naturally in fruits and fermented foods. Produced from glucose by fermentation with yeast. It is 60–70% as sweet as table sugar without calories, will not affect blood sugar, or cause tooth decay, and is absorbed by the body, therefore unlikely to cause gastric side effects
- **Isomalt**
- **Lactitol**
- **Hydrogenated starch hydrolysates**
- **Maltitol** - 75-90% of the sweetness of sucrose (table sugar). Used to replace table sugar because it has fewer calories, does not promote tooth decay and has a somewhat lesser effect on blood glucose, but has a negative action on the digestive tract, causing upset and diarrhea. 2.1 kilocalories per gram (8.8 kJ/g); (sucrose is 4.0 kcal/g (16.7 kJ/g)).

These sugar alcohols are found in a wide variety of cookies, cakes, hard and soft candies, flavored jams, jellies and spreads and many low calorie foods.

**STEVIA**

Stevia originated in the rainforests of Paraguay. It is 300 times sweeter than sugar. It has zero calories and it does not impact blood sugar. It was first introduced in Europe in 1899. Stevia mouth rinses have been used to help in killing bad bacteria in the mouth as the bacteria explode after ingesting it. This treatment has been successful in the treatment of infant and children’s ear infections when it has been suspected that the root of the infection was bacterial and related to the mouth. Stevia is very sweet and children enjoy the sweet water syringed into their mouths.

Fact and data accumulated and copied form:

- [www.sweetpoison.com](http://www.sweetpoison.com)

Sugar and Fat Substitutes – The Something Fishy Website on Eating Disorders