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# Heart to Heart

With Philip S. Chua, M. D.

## Artificial Sweeteners and Cancer, Etc.

Since the sugar-substitute scare in the 70s, where saccharin, in high doses, was linked to cancer of the bladder in mice, people have been skeptical and concerned about artificial sweeteners in general. After a thorough scientific investigation by the US Food and Drug Administration, and appropriate warning label on the packaging, saccharin was deemed safe and allowed to remain on the market. And it still is.

Actually, saccharin was discovered by Ira Remsen, a professor at Johns Hopkins University in 1879, and then stolen, patented and mass-produced by his research fellow, Constantin Fahlberg, in 1884, without giving credit to Remsen.

The somewhat bitter taste of saccharin (although 300 times as sweet as table sugar, sucrose) led scientists to come up with more natural-tasting artificial sweeteners, akin to the flavor of sugar, with the lowest calorie as possible per serving, and without adverse side-effect.

Aspartame (in Equal, NutraSweet, etc.) was soon discovered, introduced in 1981, and the public loved its "closest taste to sugar yet". One sachet contains 36 mg of Aspartame and is 4 calories, equivalent in sweetness to 2 level teaspoons of sugar, which have 32 calories.

Aspartame is up to 200 times sweeter than sugar and used by more than 100 million people the world over. More than 100 scientific studies have been done prior to its introduction into the market and aspartame has been declared safe for adults and children alike, and even for lactating mothers. Those with PKU (Phenylketonuria, the rare inherited disease found in one in 15,000 babies in the USA, which prevents the amino acid, phenylalanine, from being properly metabolized and excreted from the body, causing mental retardation) must not consume aspartame. Many foods naturally contain phenylalanine, which is also a component of aspartame.

As for the methanol produced by aspartame, one has to drink "about 675 to 1,690 cans of diet soft drinks at one sitting to reach the toxic level." Methanol is a natural and harmless by-products of many foods we eat daily.

Upon its approval, the FDA Commissioner noted that "few compounds have withstood such detailed testing and repeated, close scrutiny, and the process through which aspartame has gone should provide the public with additional confidence of its safety."

And lately, came Splenda (sucralose, 600 times sweeter than sugar), with its splendid zero-calorie count, great sugar-taste, and natural source, from sugar itself, manufactured by McNeil-PPC, Inc., and used by millions for over 12 years in more than 80 countries. This no-calorie sweetener results from a multi-step process “that selectively replaces 3 hydrogen-oxygen groups on the sugar molecule with 3 chlorine atoms.” Splenda is found in Diet RC, Diet Rite Cola, Log Cabin Syrup, Ocean Spray LightStyle fruit drinks, and in a broad range of low-cal products in the United States. Coca Cola is coming out with a new drink using Splenda. The FDA has not required any warning label for Splenda.

Sugar substitutes, like salt substitutes, have been a great help in the medical management of diabetics (for sugar control) and heart and high blood pressure patients (for salt restriction). They make food more palatable and more enjoyable, and their medical condition more tolerable for these patients. More than 144 million adult Americans use low-calorie sweetener as a part of their weight control regimen. Dental associations around the world also favor artificial sweeteners because they are “tooth-friendly.”

But what is the “safe dose”? The acceptable daily dose (ADI) is established by the US-FDA as “the amount of a food additive we can consume daily for a lifetime without adverse effects.” For instance, the ADI of aspartame is 50 mg/kg body weight per day. This is equivalent to about 15 cans of a diet drink for a 120-pound woman and 22 cans for a 175-pound man.

The scientific community and various subspecialty medical societies have denied the relationship between artificial sweeteners and headaches, brain tumors, cancers, multiple sclerosis, Parkinson’s and Alzheimer’s disease.

So, what is the sensible and practical bottom line?

It does not make sense to go to a buffet and literally take up the offer of the restaurant to “eat all you can”, ingest 3000 calories of food, and use Splenda or Equal to save 16 calories. But it makes a great sense for a diabetic, or someone trying to lose or control his/her weight to a healthy level, to use an artificial sweetener, like Sucralose or Aspartame, for an optimal regimen of calorie control coupled with regimented daily exercises. After all, overweight maims and kills, like tobacco and alcohol abuse.

There is no doubt, medically speaking, that, complimentary to a healthy lifestyle, these artificial sweeteners make life more enjoyable for the diabetics, the overweight, or the calorie-conscious amongst us who love pop, coffee, cakes, ice-cream, chocolates, and many other food items where these sugar substitutes can do wonders.

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