

What about . . . SWEETENERS?

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We humans developed our sweet teeth for some very good reasons: not only as a quick source of energy handy for running away from rampaging saber tooth tigers but also to develop our brains! And while we now exercise our *gluteus maximus* muscles far more by sitting than our *quads* by running, we still do need brain food. In order to function, our brains require specific fuels such as *glucose*, *glutamic acid*, or *ketones* to be constantly supplied. If glucose is low due to either dietary insufficiency/starvation, or from high caloric expenditure during intense muscular exercise, the body must convert it from two tissue stores: amino acids found in lean muscle mass, or chemically from the adrenal glands (activity/secretion) which initiates a conversion process which in turn transforms liver and/or muscle glycogen stores into glucose.

It is just how this sugar is supplied that is critical. A diet high in refined carbohydrates stimulates an abnormal pancreatic insulin response in order to moderate blood sugar levels, while high sugar intake may also increase adrenal cortisone and cholesterol levels fourfold. Constant high intake of simple dietary sugar over-stimulates or “burns out” normal, healthy pancreas and adrenal function.

People originally obtained their sweets from berries, roots, herbs, and some grains: these were the complex carbohydrates upon which human-kind developed plus, of course, the occasional bee tree from which they gathered both honey (a simple sugar) and perhaps some stings as well. Unfortunately, modern humans still want and require sweets but we are no longer running from tigers nor needing to collect foods except from the supermarket.

Sugar, because of our essential need for it and the metabolic processes our bodies undergo with its ingestion, is one of the most addictive, and accepted, substances in this society; caffeine, alcohol, and to a lesser extent today, tobacco, are the others. If you do not believe this, try going without any sugar (table sugar or in baked or processed goodies) for just one week straight and you will find the withdrawal symptoms most uncomfortable!

Let us examine some of the modern sweeteners upon which we are so dependent. We will find that not only are they unessential but they can be downright deleterious.

SUGAR

White sugar is nasty stuff albeit may taste good to some. Just how is it bad for you? Let me count the ways . . . ! Aside from acidifying the entire body thus causing plaques in mouths and blood vessels, it has been implicated in almost everything from obesity to cancer to dental caries to diabetes to candida overload and just about everything in between and beyond. Lest you think you're being “good” by not eating much plain white sugar, know that it is hidden in prepared foods under other names such as corn syrup, high fructose corn syrup, cane sugar, dextrose, maltose, fructose, lactose and on, *ad infinitum*.

And of course processed carbohydrates (they used to be called starches) like white flour (bread, pasta, bagels, let alone most baked goods such as cookies, cakes, pies, etc.) are also straight sugar once they hit our mouths and digestion begins. They all affect the body in the same way; they all over-

load the pancreas and adrenal glands exhausting both. This exhaustion is usually temporarily “fixed” by eating or drinking more sugar until our bodies find it hard to function without it. This is called physiological addiction.

Besides addiction, simple sugars have also been observed to “aggravate asthma, muster mental illness, provoke personality changes/mood swings, nourish nervous disorders, hurry heart disease, deliver diabetes, grow gallstones, hasten hypertension, add arthritis, and on top of all of that...they will make you fat.” This latter is because all simple sugars are digested and absorbed with such rapidity that the body cannot possibly utilize them all and so must convert them into saturated fatty acids. These SFA's are “sticky” by nature, and, when introduced into the vascular system, clog arteries thus increasing the chance of stroke, diabetes, etc.

Because of all these factors, and because most people are calorie obsessed, manufacturers have come up with “low calorie” options for almost all prepared foods. However, we shall discover that there are far more insidious inroads to ill-health than just an over-abundance of calories.

FRUCTOSE

A rather interesting twist that modern marketing has pulled on consumers is touting fructose as the answer to safe, “natural” sweetening agents because it does not significantly raise blood sugars. Due to this fact, and because at about 20 times sweeter than table sugar you don't need as much, fructose is used as an additive to sweeten all sorts of packaged foods. In actuality, fructose is “natural” only when found in fresh fruits that contain all the enzymes, vitamins, and minerals to effectively assimilate it as a desirable nutrient for human consumption. When it is “fractionated,” *ie*: without its attendant nutritional package, it, exactly like the sucrose it is supposed to replace, robs the body of its micronutrient treasures in order to assimilate itself within physiological use.

Plus it appears to raise blood serum triglycerides significantly. Fructose is a “left-handed” sugar making its digestion difficult; for complete internal conversion of fructose into glucose and acetates, it must rob ATP energy stores from the liver. Processed, metabolized, and converted to small glycogen stores (by the liver for itself and the muscles), digestion is hindered, blood serum triglycerides are raised, body stores of vitamins, enzymes, minerals, and liver stores of ATP are scavenged from the body all so that the consumer may enjoy a moment of sweet taste.

SODA POP

One of the more insidious forms of addictive substances is soda pop and it is actually sold in schools. It would be very interesting for each household to figure up the total dollars spent per month on this non-food, “drug” item. After all, Coca-Cola is one of the very largest companies in the world so it is obviously receiving vast support from consumers. Were you aware that, besides phosphoric acid and all the other nasty chemicals all sodas contain, they can also contain 8-11 teaspoons of sugar per 11 oz. can of soda? That's the “naturally” sweet kind. Then there is the “sugar-free” variety which we are told is healthier

for us because it is “calorie-free.” However, most “diet” pop is sweetened with aspartame.

ASPARTAME

Aspartame is the chemical sold under the brand names NutraSweet® and Equal®. According to H. J. Roberts, M.D., F.A.C.P., F.C.C.P., [WWW.WNHO.NET/FDAAPPROVEDEPIDEMIC.HTM], aspartame was originally conceived, and an application submitted, as a drug to treat peptic ulcer. The FDA approved aspartame as a low-nutritive sweetener for use in solid form in 1981, and in soft drinks in 1983. It is a synthetic chemical consisting of two amino acids, phenylalanine (50%) and aspartic acid (40%), plus a methyl ester (10%) that promptly becomes free methyl alcohol or methanol, more commonly known as wood alcohol and which is universally considered a severe poison.

Dr. Roberts’ main concern is the magnitude of aspartame’s use in modern society: over two-thirds of the population now uses thousands of “diet” sodas and packaged “diet” foods plus an ever-expanding list of new ones such as breath mints/strips, chewing gum, no-calorie candies, yogurts, chewable vitamins, and much, much more.

Initially, senior FDA scientists and consultants vigorously protested approving the release of aspartame products based on disturbing findings in animal studies (especially brain tumor frequency), seemingly flawed experimental data, and the absence of extensive pre-marketing trials on humans using real-world products over prolonged periods. It has now become linked in humans definitely, although not exclusively, to the initiation or aggravation of: *diabetes mellitus, hypoglycemia, convulsions, headache, depression, other psychiatric states, hyperthyroidism, hypertension, arthritis, multiple sclerosis, Alzheimer's disease, lupus erythematosus, brain tumors, optic nerve & retinal damage, pseudotumor cerebri, neurotransmitter & growth hormone abnormalities, and even carpal tunnel syndrome plus increased aspartame addiction.*

Both the Air Force magazine, Flying Safety, and the Navy magazine, Navy Physiology, have published articles warning about the many dangers of aspartame including the cumulative delirious effects of methanol and the greater likelihood of birth defects. The articles note that the ingestion of aspartame can make pilots more susceptible to seizures and vertigo. Twenty articles sounding warnings about ingesting aspartame while flying have also appeared in the National Business Aircraft Association Digest (NBAA Digest 1993), Aviation Medical Bulletin (1988), The Aviation Consumer (1988), Canadian General Aviation News (1990), Pacific Flyer (1988), General Aviation News (1989), Aviation Safety Digest (1989), and Plane & Pilot (1990) and a paper warning about aspartame was presented at the 57th Annual Meeting of the Aerospace Medical Association (Gaffney 1986).

Lest you think that Dr. Roberts is a “Chicken Little,” he is director of the Palm Beach Institute for Medical Research, emeritus member of numerous prestigious medical/scientific organizations including the Endocrine Society, the American Academy of Neurology, and the American Federation for Clinical Research, has authored 18 texts and more than 240 original articles mostly dealing with challenging diagnostic, metabolic and neurological problems. It is his contention that aspartame is so dangerous, he actually calls manifestations of side-effects from it Aspartame Disease and is appalled that the FDA continues its approval for use. He sug-

gests all physicians consider aspartame usage whenever the above cited syndromes are in evidence. Roberts contends that the causative role of aspartame products in such syndromes has been repeatedly shown by (a) the prompt improvement of symptoms (including grand mal seizures, headache, itching, rashes, severe gastrointestinal reactions) after stopping aspartame products, and (b) their recurrence within minutes or hours after resuming them. Of course the mere lack of observable symptoms in individual use does not necessarily mean that damage has not happened; just that individual is, as yet, unaware.

For more on the subject, read Sweet Poison by Janet Starr Hull, Ph.D., C.N. [WWW.SWEETPOISON.COM], who almost died of aspartame poisoning.

OTHER SWEETENERS

In their quest to supply an apparently insatiable demand for non-caloric sweeteners, manufacturers continue to come up with new, “improved” models. Unfortunately these all become addictive and have side-effects:

Somersweet - is being promoted by former actress and current infomercial star Suzanne Somers. Diana Schwarzbein, M.D., endocrinologist and author of the SCHWARZBEIN PRINCIPLE says [WWW.SCHWARZBEINPRINCIPLE.COM], “*We do not advocate the use of Somersweet. It is made with an artificial sweetener called Acesulfame-K, which is a toxic chemical. Somersweet is equally as bad as the other artificial sweeteners.*”

Splenda - is sucralose but it also contains some dextrose, a monosaccharide also known as glucose; it comes from the hydrolysis of cornstarch. Sucralose itself, according to the aforementioned Dr. Hull, is a chlorocarbon, a compound of sugar and chlorine, which is never found in nature. “*The chlorocarbons have long been known for causing organ, genetic, and reproductive damage. It should be no surprise, therefore, that the testing of sucralose reveals that it can cause up to 40 percent shrinkage of the thymus: a gland that is the very foundation of our immune system. Sucralose also causes swelling of the liver and kidneys, and CALCIFICATION of the kidney.*”

And Dr. Joseph Mercola [WWW.MERCOLA.COM] claims that nearly every month his organization receives a report of reactions to Splenda. He also says that research is indicating such side effects as: *shrunk (up to 40%) thymus glands, enlarged liver & kidneys, atrophy of lymph follicles in the spleen & 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 & placental weights, and last but not least, diarrhea.*

NATURAL OPTIONS

There are always options available and sweets are no exception. However “natural” does not always equate with “healthful.” **All** concentrated sugars can have deleterious effects on the body, especially if used excessively. Here are some considerations in alphabetical order.

Agave nectar - collected from the wild (and therefore strictly organic) agave plant in Mexico by native Indians, this nectar is lower (only 46) on the glycemic scale than honey (58). Because of this, and because it does not affect the pancreas in

the same way as honey, it has been suggested as a more safe occasional sweetener for diabetics. It is slightly less viscous than honey, does not crystallize, and contains 16 grams of carbs per tablespoon. It comes in two grades: light which is taste neutral and amber which has a slight hint of maple.

Brown/raw sugar - While it may look healthful, and receive positive press, brown sugar is simply white sugar with a bit of molasses added back in; it is still 96% sucrose; and it still contains only 0.5% mineral salts.

Carob - dates back to ancient Egypt and Greece and has been known as St. John's Bread and desert locust. The species itself actually survived the last ice age and is well adapted to harsh climates and poor soils. Because the seeds are of an extremely consistent size and weight, they are believed to have been the original gauge for the 'carat' used by jewelers.

The ground up pods form a high protein powder that is free of the allergenic and addictive effects of *caffeine* and *theobromine* present in Cocoa. It also contains less fat and more sugar, 7% fat and 42-48%, than Cocoa, 23% fat and 5% sugar. Carob also has excellent nutritional value: 80% protein, plus Magnesium, Calcium, Iron, Phosphorus, Potassium Manganese, Barium, Copper, Nickel and the vitamins A, B, B2, B3, and D and has even been used medicinally in the treatment of coughs and diarrhea.

Honey - this is still probably the favorite sweet of health conscious individuals. It has been used for thousands of years as both a sweetener and a wound poultice. However, there most definitely are some drawbacks even to this ancient delight.

What enzymes or nutrients raw honey contains are destroyed by manufacturers who heat it in order to give it a clear appearance. Some commercial beekeepers feed their bees sugar water for enhanced production while others add sugar syrup to the product. For the calorie conscious, honey has a calorie content of 65 per tablespoon in comparison to the 48 of table sugar. Also, because the original pollen is gathered from blooming plants, honey can adversely affect some seriously allergic individuals. Another consideration here is that pesticides (known carcinogens) used on farm crops and residential flowers have been found in commercial honey. Honey can be fatal to an infant (and to humming-birds!) whose immature digestive tracts are unable to deal effectively with *botulinum spore* growth.

It is best to locate a small beekeeping business that is in a pesticide-free area and which maintains non-heating methods of honey preparation. Although honey's crystallization may annoy you, it assures you that no heat has been used.

Maple syrup - this marvelous gift from maple trees has a delicious taste all its own. However, even here, make sure your supplier follows strictly organic principles.

Some processing techniques can cause end product contamination such as boiling the maple sap in lead buckets, formaldehyde pellets placed in the sap holes in maple trees to keep the sap flowing, chemical anti-foaming agents, polishing chemicals, animal fats and cooking the sap over oil fires in lead buckets.

We suggest Grade B because it is richer in minerals and is less processed than the lighter colored, more "pure" Grade A. And remember that maple syrup, delicious as it is,

still contains a 65% sucrose content.

Mesquite Pod Meal - is made by grinding the seeds and pods of the Peruvian Mesquite Tree. For centuries Mesquite pods have been harvested by hand and ground like flour to make porridge, breads and tortillas in arid and semi-arid regions around the world. It is rich in calcium, magnesium, potassium, iron, amino acids, zinc, lysine, Omega 3 fatty acids and is also high in soluble fiber with a 20 to 30% protein content. It has a pleasant sweet molasses-like flavor with a hint of caramel and can also be used as a seasoning or condiment. Because of its fat and protein content, it digests more slowly than many other high-sucrose foods and thus can be tolerated by most diabetics and hypoglycemics.

Molasses - an old-time favorite derived from sugar production that contains small amounts of iron, calcium and B vitamins, but also a 65% sucrose content. Pure, unadulterated, un-sulphured, organic blackstrap molasses can still provide an occasional treat.

Stevia - is a small shrub native to Paraguay where the native Gaurani Indians have used it for over 1500 years as a sweetener, a digestive aid, tonic, and topical aid in wound healing. The herb is nutrient rich, containing substantial amounts of protein, calcium, and phosphorous, as well as sodium, magnesium, zinc, rutin, vitamin A, vitamin C, and over 100 phytonutrients.

Stevia has a taste that is unique and has been described as very sweet with a slight licorice, almost bitter after-taste, yet very delicious; most people quickly develop a taste for it. Its sweetness derives from its complex *stevioside* molecule that is composed of *glucose*, *sophorose* and *steviol* plus a second compound called *rebaudioside*. Because of its lack of sugar, it has been found safe and effective for *diabetics*, *hypoglycemics* and those with *candidiasis*.

It has also been found to actually reduce sweet and fat cravings plus hunger sensations when 10-15 drops of whole leaf concentrate is consumed 20 minutes before meals and blood glucose levels have dropped substantially, while energy and mental acuity have been increased, with 20-30 drops being consumed with meals. It actually normalizes blood sugar levels of both diabetics and hypoglycemics while not interfering at all with normal blood sugar levels. Additionally it is prescribed by physicians in Paraguay for high blood pressure and again does not affect normal BP.

It can be used topically as well. The Hiroshima University School of Dentistry and the Purdue University's dental research group both have both researched stevia and found it retards plaque accumulation and suppresses bacterial growth when a few drops are added to tooth-brushing and rinsing routines. Following an initial stinging sensation, it also has resulted in a significant reduction in pain and accelerated healing with no scarring when placed on cuts or scrapes. Plus it has been effective when used on *seborrhea*, *dermatitis* and *eczema*, added to shampoo or conditioner, as well as proving to be a safe, effective facial masque.

Writer Karen Railey [WWW.CHETDAY.COM] says stevia is available in different forms with the less refined being the most healthful:

- The leaves and powder are light to medium green and are not water-soluble. Stevia in this form is approximately 15

to 30 times sweeter than common table sugar (sucrose).

- The liquid forms made from the whole leaf are very dark brown to almost black in color; they come in different purities and strengths depending on the type and manufacturer. Read labels; additives are sometimes used in these products, and some are made with alcohol, some with water.
- Recently whole leaf stevia has become available in tablet form, which provides a convenient means of supplementation when at work, traveling, or the like.
- The refined forms of stevia, which are the isolated *steviosides*, do not retain all of the health benefits of the unrefined stevia, come in a white powder or a clear extract, and are generally 200 to 300 times sweeter than sugar.
- Manufacturers are now offering “stevia blends” which are about 4x sweeter than sugar and are generally the *steviosides* blended with malto-dextrin or other fillers.

Railey goes on to explain that the sweetness and taste of all forms of stevia can vary greatly due to a variety of factors including where and how it was grown, processing methods, and if it is diluted or “blended.” Many believe that the best tasting and most health promoting stevia comes from Paraguay. This is due to the rich, fertile soil, pure water and air, the long hours of sunlight, and the expertise and knowledge of the Paraguayan farmers in growing and processing the plants. Ms. Railey also states that Chinese stevia products have proven to be inferior in purity and some have been found to contain high levels of pathogens.

Very interestingly, the use of stevia has been attacked by the FDA. Ms Railey tells us that stevia was used in the United States in the 1980's as a sweetener and was on the FDA's GRAS (Generally Regarded as Safe) list. Then in 1986, Celestial Seasonings, one of the world's largest herbal tea companies who used it as a flavoring in many of their teas, had, without any warning or explanation, their warehouse raided and their entire stevia stock seized by the FDA concurrent with its abrupt, unannounced nationwide banning. This in spite of the fact that stevia had been used extensively worldwide for decades, including by American companies in foreign countries, with nary a question about its safety. In 1994, the FDA was forced to lift the ban on stevia due to the Dietary Supplement Health and Education Act. Stevia currently is legal in the US but only if specifically labeled as a dietary supplement; it cannot be used commercially in food products as a sweetener or labeled as a sweetener while Aspartame, with its proven abundance of potentially fatal side-effects, remains far more available. Ms Railey concludes, rather ironically we think, “*There has been much speculation about the FDA's actions and policies concerning this beneficial herb, but evidence points to the very real probability that these things are the result of lobbying pressure exerted by chemical companies producing synthetic sugar substitutes.*”

Aside from small amounts of honey, stevia is the only sweetener Diana Schwarzbein, MD recommends and both she and Dr. Mercola sell forms of it on their respective websites. If you have not been satisfied with other brands (and there are many!) you might try these.

Sucanat - Su-ca-nat (Sugar Cane Natural) is sugar in its most “natural” form. It is extracted from the sugar cane and the freshly squeezed juice is evaporated by a special Swiss process removing only the water while preserving all of the molasses. Sucanat is organically grown with no added preserva-

tives and additives. Brown sugar contains only 0.5% mineral salts, Sucanat contains 3.0% mineral salts. It is completely natural, and has a taste that changes and gets sweeter as you eat. You can use Sucanat anywhere you would use common white or brown sugar and in the same amounts, which of course, should be quite minimal.

Zylitol - is a plant sugar that has 1/3 fewer calories than sugar, is supposed to help prevent cavities, and in animal studies has shown it may actually help the body to better absorb calcium. Naturally occurring in many fruits, berries, lettuces and mushrooms, our bodies also produce small quantities so it is not foreign to our systems. For commercial usage, Zylitol, which looks like, and is used like, regular sugar, is extracted from birch cellulose and is considered to be a *carbohydrate alcohol*. While it has the same number of calories as sucrose, it metabolizes differently and thus may be used safely for diabetics and hypoglycemics. Bacterial salivary organisms do not feed, grow or ferment on Zylitol as they do on other simple sugars thus making it a “dentist choice” for sugar-free chewing gum.

However some studies have shown that prolonged use or large intake may produce weight gain similar to that associated with high/prolonged sucrose intake, diarrhea, tumor growth, and liver/kidney/brain dysfunction causing some manufacturers to withdraw Zylitol from product formulas.

Two other *carbohydrate alcohols* are **Sorbitol** & **Mannitol** made from hydrogen and commercial glucose extracted from corn sugar. Slow absorption makes these alcohols attractive for use in “sugar-free” gums and candies regardless of the fact that both are also known to nourish and increase the count of oral bacteria, *Streptococcus Mutans*, that increase the rate of tooth decay. Some researchers believe, although it has not yet been quantified, that carcinogenic or mutagenic properties may be consistent with the behavior of this altered nutrient. There are numerous reports of gastric distress with prolonged or high dietary intake.

Of course there is always dried fruit which we call “Mother Nature's Candy Bar.” A small amount of organically grown, unsulphured dried fruit can make a super snack when paired with a handful of nuts or seeds. A whole food indeed!

ULTIMATELY THE OBJECT is to avoid increasing our natural sweet teeth by eating a well-balanced diet that is heading toward 80% alkalinity and that is well-mineralized. Those of us on the full **DYNAMITE** Program have experienced for ourselves the lessened cravings and better health derived from such practices. And if you can grow at least some of your own vegetables and fruits, make sure you fertilize with **HumiZyme** soil builder and **Prescription Treatment** foliar spray with their terrific mineral packs. After all, it is the minerals in the soils which actually give all food-type plants their tastiness and which ultimately nourish our bodies.

Our bodies have been trained to accept and to even crave modern artificial and fractionated foods. At the same time, our health in general has been spiraling downwards out of control with increased and earlier onset of “degenerative diseases.” *We can* retrain our bodies to accept and desire only whole foods instead. Those who have made the effort have found increased health, abundant energy and fewer visits to physicians to be the very satisfying result. ■