

The Scoop on Trans Fats

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We hear a lot about “**Trans Fats**” these days, so it’s not a bad idea to know more about these denizens in the world of fats. Fats come in two main categories - **Saturated** and **Unsaturated**. Animal fats, except for seafood, and some plant-based fats are high in saturated fats and are risk factors for high cholesterol and heart disease. Within the unsaturated category there are again two subgroups - the **Monounsaturated** fats (e.g. in Olive oil) are the most healthy in general and **Polyunsaturated**, which again are found in subgroups, some of which are more healthy than others. The **Omega-3** polyunsaturated fatty acids in fish like salmon and mackerel are considered good for the heart, while the **Omega-6** polyunsaturated fatty acids are found in a wide range of oils from corn and soybean to sunflower and cottonseed. We get more than enough of the omega-6 oils in our modern diets.

So where do the **Trans Fats** fit in? As we go from the saturated to the mono then to the polyunsaturated oils, they tend to get thinner at room temperature and in the refrigerator. Think about the texture of cool butter (saturated animal fat) compared with olive oil which will thicken some in the fridge, to sunflower or corn oil that are still fairly easy to pour even after refrigeration. Polyunsaturated fats will spoil or go rancid at room temperatures and should be refrigerated. If you want to extend the shelf life or thicken a polyunsaturated oil, you do something to it called “**Hydrogenation**,” which is a fancy term for adding chemical hydrogen bonds. Good old “thick as lard at room temperature” Crisco is an ultimate example of hydrogenation!! It doesn’t spoil easily, but neither is it at all healthy. Check the labels and you will see that oils in many products have been hydrogenated. “**Partially Hydrogenated**” on the label means just that - oils in the mixture have been partially saturated with hydrogen.

The Trans Fats created by hydrogenation are dangerous to our health, even worse than saturated fats. They are associated with increased heart disease by not only raising total cholesterol, but by lowering the good **HDL cholesterol**. Because they are relatively cheap, enhance texture, and extend shelf-life, Trans Fats are found in many processed foods (fast foods, crackers, donuts, cookies, cakes, microwave popcorn). Avoiding products with Trans Fats, in addition to shifting away from saturated animal fats to olive oil, canola, some nut oils, and fish with omega-3s, while keeping total fat intake at less than 30% (ideally closer to 20%) of our overall caloric intake is recommended.

Resources:

Center for Science in the Public Interest, www.cspinet.org.

Dietary Guidelines for Americans, 2005, USDA, Washington, D.C.

Mayo Clinic, www.mayoclinic.com/health/trans-fat.

Rosati K and Rosati R., *The Rice Diet Solution*, New York: Simon and Schuster, 2006.

University of Maryland Medicine, www.umm.edu/features/transfats.htm.

The Scoop on Salt

Salt has been an essential part of human diet and civilization for the millennia. Jesus referred to the importance of its savor. Someone can be put down for not being “worth their salt.” In fact our word “salary” comes from the Latin word for salt (*salis*) because people, especially soldiers were often paid in salt. Salt was critical and very valuable in desert cultures, largely to offset losses from sweating and to preserve food. Used also for healing, sacrifice, and flavoring, wars were often fought, won or lost over salt. Today we think of it as a cheap commodity and, unfortunately, most Americans eat way too much of it.

The 2005 *Dietary Guidelines for Americans* on Sodium and Potassium recommend sodium intakes less than 2300 mg per day (representing a 2700 mg decrease from the guideline for 5000 mg back in 1977). For specific salt sensitive populations, “persons with hypertension, Blacks, and middle-aged and older adults,” the current recommended daily intake is no more than 1500 mg. The *Guidelines* go on to note a direct relationship between sodium intake and blood pressure, thereby increasing risk for hypertension and stroke. Research studies have shown high sodium intakes also increase risk for and complications of diabetes and osteoporosis.

The report notes that 80% or more of Americans’ sodium intake is from salt added to food by manufacturers or at restaurants, while about 10% is the natural content in foods and 10% is added at the table. When you look at the sodium content per serving on food labels, you find a wide range even in products under the same brand name. Some of the lowest sodium breakfast cereals are “Shredded Wheat,” Kashi “Heart to Heart,” and home-cooked oatmeal with no added salt. Canned and dried soups, snack items, prepackaged children’s lunches, boxed macaroni and “riceroni”-type dinners, and ready-to-eat frozen dinners are some of the highest salt content offenders. But it is easy to be fooled, because foods marketed as “Healthy” often have very high sodium levels (the prepared burritos at Whole Foods have over 1000mg sodium per serving). Any item with less than 140 mg sodium per serving can be labeled as “low-sodium,” but we need to be mindful that several of these items or multiple servings in one meal adds up fast.

The United Kingdom has set the recommended sodium intake at 2400 mg per day, slightly higher than the current U.S. guidelines. However, the U.K. is seeking to help people achieve this goal by aggressively reducing the amount of salt added to manufactured foods. Since 2003, the Foods Standards Agency (FSA) has set “salt targets,” which limit the amount of salt that can be added to foods such as meats, canned soups, sauces, and even take-out foods. In the United States, the Center for Science in the Public Interest (CSPI) is encouraging Congress to create a “Division of Sodium Reduction” within the FDA that could advocate for manufacturers to add less salt. Food products such as Kraft Lunchables manufactured in the U.K. have far less salt than the same product in the U.S., and CSPI wants the U.S. to follow Great Britain’s enlightened lead.

If you would like to know more about sodium guidelines and salt policy concerns, check out: Center for Science in the Public Interest www.cspinet.org; USDA www.nal.usda.gov; and Center for Nutrition Policy and Promotion www.usda.gov/cnpp.

The Scoop on Sugar

Sugar! We love it! But it doesn't always love us back. Many foods eventually break down into some form of sugar (or glucose in its simplest form). Simple sugars like sucrose, fruit sugars (fructose) and corn syrup go into our blood stream very quickly and have what is called a high Glycemic Index. Even the sugars and simple starches in foods like potatoes, beets, carrots, and yams can raise our blood glucose levels quickly, unless they are eaten with more slowly digesting foods, such as complex whole grains (Good Carbs), proteins and fats. Fruit juices have higher glycemic indices than the whole fruits because the natural fruit pulp and fiber have generally been removed.

Maintaining an even blood glucose level is important because rapid spikes in blood glucose are followed by rapid dips making us feel hyper and then tired, jittery, often with headaches. When our blood glucose level dips, we crave sugar and eat or drink more sweets, beginning the cycle all over again! The rapid spike from eating simple sugars and starches causes our pancreas to release extra insulin, which then drives the blood glucose level down. Insulin is needed to transport glucose from the blood into our cells, where it is used to produce energy for cell growth and function. (In Type 1 Diabetes, the pancreas cannot produce sufficient insulin and persons generally have to take insulin).

In persons starting out with normal pancreatic function, repeated spiking of blood glucose levels and subsequent spikes in insulin can cause cells to become more resistant to insulin, one factor leading to Type 2 Diabetes. Eating meals with a mixture of whole grains, beans, fiber-rich vegetables and fruits, and small amounts of good fats like olive, canola, or nut oils slows down glucose uptake in the blood and moderates the release of insulin. Exercise also improves our cells' ability to take in glucose and makes insulin work more efficiently.

With the increased numbers of Americans who are overweight and eating large amounts of sugary and processed foods, the occurrence of type 2 diabetes is significantly on the rise. We are even seeing younger children (ages 12 and up), who are struggling with being overweight and in the early stages of type 2 diabetes. This is an epidemic we can do something about, and need to because the long-term potential damage to kidneys, eyes, and limbs is very serious indeed. The best ways to prevent Type 2 Diabetes are : (1) Healthy diets; (2) Exercise; (3) Maintain healthy weight.

The Scoop on Sugar Substitutes

There are a number of sugar substitutes, some of which have been around for years and some are very new. **Sucralose, or Splenda**, is fairly new on the scene and is made by joining chlorine with sucrose. Our bodies cannot burn Splenda, so it provides no calories and it has passed all the animal study safety tests. However, studies on people have been few and short-term so there is still much that we do not know. One thing we do know is that sucralose is about 500 times sweeter than sucrose. Even though the package says you can use it one to one, and the sucralose has been cut with maltodextrin, try cutting back to avoid that way-too-sweet Splenda dessert.

The sugar alcohols, such as **sorbitol, xylitol, mannitol, lactitol** and so forth, aren't really alcoholic. They are digested and absorbed to some degree, but not fully, thereby lowering their calorie content to about 10% to 70% of sugar depending on which formulation is used. The major problem with the sugar alcohols is that they can cause bloating, gas, and, in large amounts, diarrhea. These sugar alcohols do not raise blood glucose as rapidly as regular sugar, however, if used one-to-one as a sugar substitute, they can still have plenty of calories.

Tagatose (aka Naturalose) is a mirror image sugar manufactured from milk sugar (lactose) that cannot be digested or absorbed. Like the alcohol sugars, consuming large quantities can cause gas, bloating, and diarrhea. So far, studies have raised no other health concerns. The product is so new it is only found in one food - Diet Pepsi Slurpees at 7-Eleven.

Aspartame, better known as **NutriSweet or Equal**, is a synthetic derivative of the amino acids aspartic acid and phenylalanine. Persons with the metabolic disorder, PKU, should never use it. A 1994 study showed some "sensitive" people have headaches from aspartame. Anyone who feels that they are sensitive to the product should avoid it. The risk of cancer has been neither proved nor adequately disproved and, given the widespread use of the product, more studies need to be done. **Neotame** is a newer formulation where the bond between the aspartic acid and phenylalanine is more stable and harder to break down. It is so new, it has not yet appeared in any foods, and even though it may be safer for persons with PKU, it still may cause sensitivity in some persons.

Acesulfame (Sweet One, Sunett, or acesulfame potassium is found in some chewing gums) is a synthetic chemical that cannot be metabolized. Safety studies have been less than favorable, with some female rats twice as likely to develop breast tumors. Even though most were benign, this is not good news. Further testing is under way and this sweetener is best avoided.

Saccharin is so well known it has become a euphemism for being "too sickly sweet." Saccharin is a sweet tasting synthetic chemical discovered in 1879. In 1977, the FDA tried to ban saccharin based on studies showing bladder cancer in rats receiving very high doses. The FDA was reviled for its action, largely because saccharin was the only non-caloric sweetener at the time and persons with diabetes and trying to cut calories were relying on its use. By the late 1990s, saccharin was removed from the carcinogen list, but it never really made a comeback. This is most likely for the best, because last year the National Cancer Institute, based on the human study ever done, found evidence of increased risk for bladder cancer, particularly in those who heavily used saccharin as a table top sweetener or through drinking diet sodas.

Stevia (Sweet Leaf and Honey Leaf) is made from a shrub that grows in Bolivia and has shown reproductive problems in rat studies. Male rats had testicular cell proliferation - fancy for a condition that could cause infertility. Female hamsters had fewer and smaller offspring. Stevia cannot be used legally in food production, but is sold as a supplement, over which the FDA has no regulatory power unless people start dropping over in droves. Promoted by the health food industry as a "natural alternative" to synthetic sweeteners, Stevia is no where near safe.

Final Thought - Moderation is the wisest counsel in using any of these sugar substitutes, and learning to enjoy our foods with less sweetening in general can go a long way to keep us healthier and safer. Diet sodas are empty calories and sodas in general leach calcium out of our bones, so going easy on sodas in any form is the best advice. Try cutting the amount sugar or substitutes in recipes and adding fruits as a natural sweetener, at least with fruits you're getting some other good nutrients with your calories.

The Scoop on Vitamin D

When physicians test blood levels of Vitamin D, they are finding more and more people with low levels of the “Sunshine Vitamin.” This makes sense if you think about how vitamin D is formed and some of the lifestyle changes that have taken place over the past few decades. We ingest Vitamin D primarily through (list foods and fortification). Our bodies can make vitamin D on its own by converting substrates through exposure of our skin to the ultraviolet rays in sunlight. We have become more aware and cautious about the dangers of skin cancer causing us to stay out of the sun as much as possible, wearing sun-block when we are out. In general, we seem to be spending a greater proportion of our daylight hours indoors, unless we specifically work outdoors or engage in sports. This combination of factors means that our bodies are not making as much Vitamin D. Subsequently, the amount we consume in our foods becomes crucial.

The U.S. recommendation daily intakes are 200 IU for adults under age 50 and 600 IU for persons over age 70. However, recent research suggests that 1000 mg. per day is advisable. Among other important functions, Vitamin D is necessary for the absorption of dietary calcium and has been directly linked to disease prevention and improved health the areas we describe below.

Bone and Muscle Health: Daily intake levels of 800 to 1000 IU per day among older adults have been shown to reduce the risk of hip and other bone fractures (but not spine fractures). Vitamin D also helps boost muscle strength.

Cancer: Study results on the effects of Vitamin D in preventing colon cancer have been mixed, with some studies showing a beneficial effect while others showed none. The vitamin D intakes in the study with the beneficial outcome were higher, and more research is being done on this connection.

Diabetes: Vitamin D is needed for needed for optimal production of insulin. It may also improve cellular responsiveness to insulin thereby making the insulin we have more efficient. Studies have shown that people with higher blood levels of Vitamin D have lower risk for diabetes.

Other areas where Vitamin D appears to have beneficial impacts is on oral health by reducing inflammation, arthritis, mental function, and multiple sclerosis.

Overall, Vitamin D is very important to our health and aiming for a total daily intake of at least 1000 IU of the D₃ form (cholecalciferol) is recommended. As with any supplement, mega-dosing is not advised.

Resource: *Nutrition Action Health Letter*, Washington DC: Center for Science in the Public Interest, Vol. 34(9) November, 2007.

