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The Great Sugar Shocker


Dr. David G. Williams

Is it just me?

The latest health "news" seems to be the realization that sugar is actually harmful to your health. I've been writing about the dangers of sugar for as long as I can remember. In fact, our society's excess consumption of sugar has become such a public health hazard that I've decided to spend most of this month's issue on the subject.

I certainly haven't been the only one saying this, but practically every major medical organization and mainstream publication has downplayed any possibility of sugar being more than just a harmless sweetener. The worst criticism they've managed to admit against sugar is that eating too much might cause you to gain extra weight or rot your teeth. But now that researchers have "uncovered" the obvious, it's being announced that consuming sugar "may" actually be bad for your heart. (*JAMA 10;303:1490–1497*)

The recent suggestion that sugar might play a role in heart disease was obviously just exposing the tip of the iceberg. After sugar producers, soft drink and candy makers, and everyone else who has a vested interest in selling refined carbohydrates gets a chance to lobby and promote their interests, I suspect we'll be hearing that sugar can be a part of a healthy lifestyle when consumed prudently. Don't fall for that line…you know better.

How many hundreds of thousands of individuals have suffered and/or died during the last several decades because mainstream medicine and the media have failed to warn the public of the obvious dangers associated with sugar consumption? These are the same groups who repeatedly commented how anyone who had the gall to criticize sugar must be a certified health nut.

Don't get me wrong. There's never any satisfaction in saying, "I told you so," particularly when we know so many thousands have lost their health and lives. I simply wish that the dissemination of health information could be based more on the truth and less on egos, politics, and potential profits. It just continues to amaze me that it takes so long for the general public to learn the most basic truths about health and how so many people have to suffer as a result. The Ben Franklin quote in the box below has never seemed more true.

There's no "maybe" about the connection between sugar and heart disease. I can't put it more plainly: sugar kills. It's linked directly to the major killers we're experiencing today like heart disease and diabetes. In fact, research shows that, almost regardless of their form, excess intake of carbohydrates triggers factors that can lead to heart disease and diabetes. Consumption of too many carbohydrates—which sugar is—also plays a primary role in both obesity and premature aging. If you're looking for a quick anti-aging remedy…cut your carbohydrate intake.

How Carbs Do Their Dirty Work

On the heart disease front, refined carbohydrates (sugar, high-fructose corn syrup, white flour, et cetera) cause several problems. When we talk about heart disease, there are several factors that come into play, including triglycerides, VLDLs (very low-density lipoproteins,

In This Issue

You will observe with concern how long a useful truth may be known, and exist, before it is generally received and practiced on. — Benjamin Franklin

so-called because they're mostly fat and contain very little protein), LDL cholesterol, C-reactive protein, atherosclerotic plaque, and blood pressure. If you've had any blood work or tests performed which indicate any of these factors are a problem, keep in mind that every one of these can be reduced through a low-carbohydrate diet and the inclusion of more fiber and plant-based foods.

Carbohydrates are the body's form of quick energy. When we consume carbohydrates they are converted into glucose and glycogen by the digestive system, and then dumped into the bloodstream and carried to cells throughout the body. (Carbohydrates are the only nutrients that significantly increase blood glucose levels.) Our body has a very limited ability to store carbohydrates. This isn't a problem when we're active. During exercise, our muscles require this form of quick energy to function, and the glucose can be removed directly from the bloodstream without the need for insulin.

On the other hand, when we are not active and excess glucose remains in the bloodstream, our body releases insulin to remove it. Insulin transports this excess sugar in the bloodstream to the liver where it is converted to fat components called triglycerides so it can be stored or later used for energy. While we have only limited ability to store carbohydrates, we have a practically unlimited capacity for storing fat.

Some of the triglycerides remain stored in the liver and over time can result in a fatty liver. I've discussed the dangers associated with that in past reports. Nonalcoholic fatty liver disease is rapidly becoming the most common chronic liver condition in the Western world, and the increase has been linked to increased carbohydrate intake and the resulting high blood levels of insulin that increase triglyceride production. (*CMAJ 05;172;899–905*)

The Truth About Cholesterol Numbers

Besides storing triglycerides directly, the liver also repackages them as VLDLs and sends them via the bloodstream to other parts of the body—where they interact with other compounds to create the harmful smaller forms of LDL cholesterol, and are strongly associated with heart disease.

As you well know, however, when it comes to heart disease, the focus has been placed (I should say "misplaced") on cholesterol. But without cholesterol we couldn't live. Cholesterol is essential for hormone production and cell membrane formation, and it's an insulating component of nerve cells. Eighty percent of the people who develop heart disease have the same cholesterol levels as those who don't get the disease. And a normal cholesterol level doesn't mean you're at a low risk of getting heart disease. Focusing on cholesterol levels has given a lot of people a false sense of security and led to a lot of unnecessary deaths. Cholesterol becomes a problem when it gets oxidized, or when certain compounds transport it within the bloodstream.

The increase in the smaller forms of LDL cholesterol depletes the beneficial HDL (high density lipoprotein) form of cholesterol. HDLs move cholesterol safely through the bloodstream and help prevent it from becoming oxidized. Consistently high levels of triglycerides, however, deplete HDLs—and those that are formed tend to be smaller and less able to prevent oxidation of cholesterol.

There are actually five types of HDLs, with the most beneficial type known as HDL 2B. (I mention this only because some individuals will test as having a normal overall HDL level, only to develop heart disease because their HDL 2B is low.)

Many doctors still tell their patients that their HDL level is okay if it falls into the normal range. They seem to forget that heart disease is the number-one killer in this country. From my perspective, **having the "average" or "normal" value for the number-one cause of death is a little disturbing**, to say the least. If you test average or normal for HDL (40 mg/dL or above for men and 50 mg/dL or above for women), I think it's time to take some serious action. I would be shooting for at least 20 or 25 points above the norm, especially if there was a history of heart disease in the family.

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You can increase your HDL levels several ways, including weight loss, a healthier diet (lower glycemic foods and cut out the carbohydrates), and exercise. For extra support to raise your HDL levels, beef up your daily routine with niacin—one of the overlooked gems for preventing heart disease and increasing HDL levels. Niacin is dirt-cheap, readily available, and safe, and it works. I recommend 1–3 grams, spaced out through the day. [*Editor's note: You'll find three more uses for niacin, and what to watch for when using it, in the* Alternatives *Subscriber Center, at* www.drdavidwilliams.com.]

Try Watching Your Triglycerides

There's still a misconception among many doctors that triglyceride levels are only a minor factor in heart disease. Sadly, that's not the case. Higher triglyceride levels trigger a chain of events that leads to the formation of the most dangerous lipoprotein particles which, in turn, trigger inflammation and plaque formation and actually cause cardiovascular disease.

A basic knowledge of the conversion of excess sugar into fat will help explain a lot of the problems we're seeing and experiencing with obesity and heart disease today.

It's why we see high triglyceride levels even in thin individuals who don't consume much fat. And research shows that when someone is overweight their body becomes even more efficient at converting sugar to fat—at up to five times the rate of thinner individuals. This difference is one reason they will have difficulty losing fat even if they cut back on their sugar consumption.

And probably one of the most important dietary misconceptions has to do with fat consumption. Eating fat doesn't necessarily make you fat the way the consumption of sugar and refined carbohydrates will. If that were the case, our society would be just skin and bones from all the "fat-free" foods that have been consumed over the last couple of decades. In the majority of cases, when the manufacturers removed the fat they replaced it with high-fructose corn syrup or artificial sweeteners.

Saturated Fat Isn't the Problem, Either

There's a new study that you probably won't be reading much about, since it goes against the propaganda that has been pushed for so long.

A review of 21 studies involving 348,000 adults found there was no clear link between the consumption of saturated fat, found mainly in meat and dairy products, and a higher risk of developing heart disease or stroke. (*Am J Clin Nutr 10;91:535–546*)

Myths About Oils

As a short side note here, it's worth mentioning that one of the methods researchers use to promote liver disease in lab animals is to feed them vegetable oils. Over the years restaurants have switched from using saturated fats in cooking to omega-6–rich vegetable oils almost exclusively. I have no doubt this is another contributor to the global epidemic of fatty liver disease. Surprisingly, you won't read much about the research showing that fatty liver problems can be resolved when animals are switched to a low carbohydrate diet, or the fact that it's almost impossible for lab animals to develop fatty liver disease (even when given large amounts of alcohol) if they are fed saturated fats.

Even more shocking, the American Diabetes Association, the American Heart Association, the USDA, and the Surgeon General's office all still recommend consuming more carbohydrates and increased amounts of omega-6 oils as part of a low–saturated fat, low-cholesterol diet. It's amazing. (*Circulation 09;119:902–907*) (*Surg Endosc 07;21:1423–1427*) (*Hepatology 08;48:1487–1496*) (*Ann Rev Nutr 09;29:365–379*)

It's also known that societies which consume large amounts of saturated fats in the form of coconut, palm, and palm kernel oil don't have an increased risk of heart disease or stroke. Saturated fats are naturally high in cholesterol, but **heart disease isn't a cholesterol disease. Heart disease is an inflammatory disease caused by oxidized cholesterol and the glycation of LDL particles.**

The Real Coke Addiction Problem

As I mentioned in the January issue of *Alternatives*, the combination of carbohydrates (from high-fructose corn syrup) and omega-6 oils (as trans fatty acids) found in the typical fast-food meal is also a real one-two punch to your liver. Within just a few weeks, mice fed a fast-food diet underwent an increase in insulin resistance and an increase in markers of liver damage. I don't want to even imagine how much damage a diet like this could do to a person's liver over the course of several years. Now it turns out that, once you get into the habit of a diet like this, it's hard to get off.

A recent report showed that fat in the diet may be just as addictive as hard drugs. Researchers fed groups of rats either a nutritious diet of only rat chow, a tasty but nutrition-poor diet, or a mix of the two types of food. **When the "junk-food" rats had their tasty food taken away, they preferred to starve rather than eat healthy**

Childhood Asthma

Question: My nephew has recently developed asthma. It doesn't seem that bad right now, and unfortunately his parents probably aren't open to making any drastic lifestyle changes. I know you've written about this in the past, but are there any simple, quick suggestions that I could pass along to his parents?

—Jane K.
Phoenix, AZ

Answer: Here are simple suggestions that they may be open to implementing.

First, I would suggest starting your nephew on the xylitol nasal wash called Xlear. Have him rinse his nasal passages with the product 3 or 4 times a day and continue to do so every day for two or three months. This alone can work wonders.

Second, have his vitamin D levels checked and if they are low, get them up as quickly as possible by taking higher dosages for a week or two and then cut back to a maintenance level.

Dosages for children vary by weight and age:

- 1,000 IU per day for healthy children under 2 years old
- 2,000 IU per day for those over 2 years old
- 3,000 IU per day for children weighing 80–130 pounds

I've seen severe chronic cases of asthma that have responded very quickly to these two methods.

food, refusing to eat the nutritious rat chow for almost two weeks. (*Nat Neurosci 10;13:635–641*)

The junk-food rats showed greatly reduced brain activity of the D2 receptor for dopamine, a chemical that's released upon experiencing pleasurable stimuli such as food or sex—or cocaine.

A study released just a couple of years ago reported that sugar is addictive, as well. Some scientists commented that the sugar study wasn't necessarily valid, because of the amount of sugar that those rats consumed, and the fact that the sugar was given on a regular basis. Obviously those who objected to the study haven't spent any time hanging around a 7-11 between about 6 in the morning and 2 in the afternoon, watching the regular customers come every day at the same time for their sugar "fix" from the gigantic soda.

Don't Forget the Family

As I've mentioned many times, your genetic background is extremely important in both the type of diet your particular body requires and the diseases you are more susceptible to. **A family health history can reveal a wealth of information about your susceptibility to heart disease** and the necessary changes you should make in both your diet and lifestyle.

Make a list of relatives and start writing the details down so you can pass it along to your children. Gather health details about your parents, brother and sisters, and your children first, then grandparents, aunts, uncles, cousins, nieces, and nephews. List genetic defects, cancers, stroke, and chronic illnesses such as heart disease, diabetes, or depression. Find out the ages at which these problems showed up. For relatives who have died, find out their age at the time and what caused their deaths. You'll be surprised just how quickly a pattern forms. [*Editor's note: A family history tracker is available in the* Alternatives *Subscriber Center*, www.drdavidwilliams.com.]

In my case, for example, most of my mother's brothers suffered from heart disease. Her one brother (who everyone says I look like and share other characteristics with) doesn't have heart problems. I find this encouraging, but, at the same time, realize it's a potential problem area and one that I actively address in my diet and lifestyle.

After I discussed the importance of family history with a friend, he found out that his dad and all of his uncles on his father's side died of heart disease in their mid-40s to early 50s. This discovery was a definite wake-up call to get serious about his health, particularly since he was already taking blood pressure medication.

Also, with gene-environment problems like heart disease, you may have the genetic weakness but never develop the problem if you take proper care of yourself. Even if you develop heart disease after you've triggered the gene with weight gain and lack of exercise, you can still shut the gene down by losing weight and exercising.

Turning on the Fat Genes

Researchers are now referring to heart disease as a genetic disease. Like many diseases, however, it's more of a gene-environment interaction. That is, other genes or factors in the environment can either activate or deactivate this heart disease gene. And increased body weight is a key element that activates the gene and leads to heart disease.

New research has shown a high-fat or high-sugar diet actually switches on genes that cause the body to store fat. High-fat and high-sugar foods stimulate what is

called the kappa opioid receptor which helps control fat metabolism. (*FASEB J 10;24:1151–1159*)

If you look at the incredible physical changes that have taken place **in our society's youth, it's pretty apparent poor eating and lifestyle habits are having a negative effect**. Abdominal fat accumulation is the norm in most teenagers, and is becoming just as common in pre-teens. The resulting increase in abdominal fat is one of the primary signs of metabolic syndrome or syndrome X. [*Editor's note: Learn the 3 signs of metabolic syndrome, and 3 things you can do to get rid of it, in the* Alternatives *Subscriber Center, at* www.drdavidwilliams.com.]

A Healthy Gut Leads to a Smaller Gut

As an interesting side note, researchers have discovered that the amount and type of bacteria in your gut also plays a role in weight gain or loss.

A Japanese company, Snow Brand Milk Products, gave 87 overweight individuals 100 grams of fermented milk twice a day. The milk consumed by half the group contained the bacteria *Lactobacillus gasseri*. After 12 weeks those individuals lost an average of 2.2 pounds— and there was no weight loss in the other group. (*Eur J Clin Nutr 2010 March 10. E-pub ahead of print PMID:20216555*)

What made this even more exciting (to me) was that the fat they lost was in the areas associated with metabolic syndrome. They lost 4.6 percent of their visceral fat (fat around the stomach) and 3.3 percent of their subcutaneous fat (fat just under the skin). Their hip circumference was reduced by 1.7 cm (almost ¾ of an inch) and their waist went down by 1.5 cm (just over ½ inch). For doing nothing else this is pretty remarkable, to say the least.

Researchers feel that the probiotic used, *Lactobacillus gasseri*, somehow decreases the amount of fat absorbed from the intestines. I think there's probably a lot more to the story.

The interactions between our body and the microbes that inhabit our gut are far-reaching and extremely complex when it comes to our health. Research in this area has only scratched the surface. There is definitely a symbiotic relationship that we tend to take for granted. Just recently it was discovered these **microbes supply the body with energy by using their enzymes**—ones we don't have—to break down various plant compounds. It also appears that we somehow acquire new genes from these microbes and incorporate them into our own cells lining the gut.

One recent study found that the Japanese have microbes in their gut with the genetic ability to break down complex molecules in seaweed. This ability apparently has evolved over a long period of time in response to repeated exposure to these different foods. Microbes in Americans don't have this ability. When you take a more serious look at just how vital our intestinal flora is to our health, it becomes easier to understand why we are experiencing such dramatic increases in problems such as inflammatory bowel disease and allergies.

Amazing things occur when you balance the intestinal flora with probiotics and fermented foods. *Lactobacillus gasseri*, by the way, just happens to be one of the strains I've incorporated into the two probiotic supplements I've helped develop. Both Probiotic Advantage and Probiotic Advantage CR are available at 800-888-1415 or *www.drdavidwilliams.com*.

The Diet Solution

If what you're reading here has motivated you to watch your diet more closely, and I hope it has, you can find lists of high- vs. low-glycemic foods at numerous sites on the Web. One of the most comprehensive lists, including brand names of foods from around the world, is at *www.mendosa.com/gilists.htm*.

In simple terms, you need to cut out the sugar and refined carbohydrates. And even if a diet that consists primarily of meat and dairy doesn't cause heart disease, it's not what I'd recommend. (Cheese, by the way is the one dairy product that doesn't appear to significantly trigger the release of insulin.) This type of diet doesn't provide the fiber and roughage necessary to promote proper bowel movements and feed the friendly bacteria in the system. It also creates an acidic state within the body that has to be buffered with calcium, which is robbed either from the bones resulting in osteoporosis or from other body stores resulting in high blood pressure and other problems.

On the flip side, a pure vegetarian diet can create another set of problems. It's hard to obtain sufficient amounts of omega-3 fatty acids strictly from plant sources, which can result in insufficient hormone production and other conditions. Coenzyme Q10, vitamin K2, vitamin B12, and carnitine are just a few of the other common deficiencies that must be guarded against.

Based on what I said so far, I sure don't want to give the impression that diet alone is the answer. Diet alone will only go so far in protecting you from cardiovascular disease. Vitamin and mineral levels need to be addressed through supplementation. Adequate amounts of essential fatty acids and fish oil are necessary. Don't forget also that

NEWS TO USE FROM AROUND THE WORLD

More Flu Shot Follies

VANCOUVER, CANADA—Here's a bit of research the public certainly won't be hearing about anytime soon.

In four separate studies across Canada, experts assessed whether individuals who received the traditional seasonal flu vaccination during the 2008–09 flu season were afforded more protection against becoming infected with the H1N1 "swine" flu virus during the spring and summer of 2009 when compared to those who didn't receive that seasonal flu shot.

They discovered that seasonal flu vaccination was linked with a 68 percent increased risk of developing swine flu. In simple terms, they found that taking the traditional seasonal flu vaccinations made individuals more susceptible to the swine flu virus in 2009.

The government agencies, medical organizations, and drug companies weren't too excited to see this information being published and have already started a campaign to question the validity of the research—saying it doesn't establish a "direct link" between seasonal flu vaccination and subsequent swine flu illness. They may have a little difficulty dismissing the data, however, because these studies involved the combined work of more than 40 of Canada's top influenza researchers.

This is just one more reason I don't recommend seasonal flu vaccines. The list just keeps growing. (*PLoS Med 7(4):e1000258*)

hypothyroidism (low thyroid function) is a major heart disease risk factor and contributing factor to obesity. It also just happens to be one of the most common undiagnosed conditions of our time.

Yes, Exercise *Can* Save Your Life

When you exercise, your body immediately pulls excess carbohydrates from the bloodstream to fuel muscle action. Exercise also:

- minimizes the need for insulin and prevents excess carbohydrates from being converted and stored as fat;
- increases HDL levels;
- lowers triglyceride levels;
- reduces the "stickiness" of blood cells or blood coagulation;
- increases the release of nitric oxide, resulting in blood vessel dilation and improved circulation;
- reduces endothelial dysfunction or the constriction of small arteries;
- improves the elasticity of arteries;
- burns calories, resulting in weight reduction;
- promotes lean muscle formation, which naturally increases metabolism and weight loss;
- reduces inflammation; and
- improves depression.

One of the quickest ways to lower blood sugar levels following a meal is to take a walk or exercise. Most people would be amazed just how much better their health would be if they did this following lunch and/or the evening meal on a regular basis.

In most cases, by increasing the time it takes for food to move through the stomach (gastric emptying), you can help reduce the spiking of blood glucose levels. I've talked about how a couple of teaspoons of vinegar improve postprandial (after eating) blood sugar levels. It accomplishes this by slowing gastric emptying. Meals that include cinnamon and fats also do the same. (Be careful about which fats you consume, obviously.)

Premature Aging

If the fact that sugar is directly linked to the number-one killer in this country isn't enough to make you avoid it, then maybe the fact that it ages you prematurely will.

I've talked about AGEs (advanced glycation endproducts) before. AGEs are formed through the process of glycation, in which proteins chemically react with blood sugar (glucose) and, as a result, become more cross-linked, less soluble, less elastic, and less digestible by enzymes as we age.

Glycation occurs in all of us. And the rate and progression of the process is directly related to how quickly we age. Diabetes is one of the best living examples of the effects of accelerated glycation. *The complications associated with diabetes are directly linked to AGEs.*

One practical example of glycation is a cooked egg white. The sugars in the white bind with the proteins to create crosslinks. The clear, liquid white turns opaque and rubbery. That's not something you want happening in, for example, the lens of your eye.

Earlier I talked about very low-density lipoproteins or VLDLs, the small transporters of cholesterol in the bloodstream. The primary protein in VLDLs is called apolipoprotein B or ApoB. It just so happens that the smaller the protein, the more subject it is to glycation. The small VLDLs are 8 times more susceptible to glycation than the larger LDL particles. Rather than get bogged down into any more technical details, the point here is that when blood sugar levels remain elevated for prolonged periods of time, as they are in diabetes, there is

a 4-fold increase in overall AGE formation and an 8-fold increase in the glycation of some of the most dangerous particles involved with cardiovascular disease.

This explains why diabetics suffer prematurely from a long list of age-related diseases such as heart disease, cataracts, kidney dysfunction, retinopathy, neuropathy, deafness, and osteoporosis. (*Mol Biol Rep 91;15:57–64*) (*Atherosclerosis 09;202:162–168*)

In a nutshell, if your goal is to accelerate the aging process then a high-glycemic diet is undoubtedly the way to go. The more sugar, white flour products, high-fructose corn syrup, and simple carbohydrates you consume, the quicker your body will age and the quicker you will develop age-related diseases.

On the other hand, by eliminating, or at least minimizing, these items in your diet, and by exercising (especially after eating), you can slow the aging process. A few supplements can help block AGE formation—and possibly even break down these glycated proteins.

Breaking the Bonds of AGEs

Research has sometimes shown and often alluded to the fact that certain substances can be used to inhibit or possibly even dissolve AGE-related cross-links. One company, the Alteon Corporation, *had* been working on a drug, referred to as ALT-711 or alagebrium, for years—hoping to one day get approval to market the drug as a way to reverse the cross-linking associated with aging. I'm not sure, however, we'll ever see it being offered.

Another compound called aminoguanidine (marketed as the drug Pimagedine) has been shown to block cross-linking. It has been popular with anti-aging groups, but does require a prescription.

Natural products with structural similarities to the above drugs probably provide many of the same benefits. This has shown to be the case with the N-acetylcarnosine drops being used directly on the eye to break down the cross-linking within the lens commonly known as cataracts. [*Editor's note: The full story on N-AC eye drops to get rid of cataracts is available in the* Alternatives *Subscriber Center,* www.drdavidwilliams.com.]

Also, the first drug I mentioned above is actually a derivative of thiamine or B1, which research has shown has the ability to block AGE-related cross-linking and maybe even break those links.

I've recommended a form of B1 called benfotiamine. The problem with taking regular thiamine is that it's poorly absorbed, whereas the fat-soluble benfotiamine is absorbed easily and has been proven to positively prevent AGEs. (*Poster available at* www.uniklinikum-giessen.de/med3/poster/publ_pdf/060.pdf. *Accessed May 3, 2010*) (*Int J Clin Pharmacol Ther 96;34:47–50*)

The human dose to achieve these effects appears to be around 100 mg of benfotiamine taken 2 or 3 times daily for the first six weeks and then tapering to around 150 mg a day thereafter. Benfotiamine is available from a variety of sources, including Benfotiamine.net, at 888-493-8014 or *www.benfotiamine.net*.

Cinnamon (particularly a cinnamon extract called Cinnulin PF) at 250 mg a day, divided among your meals, will help normalize glucose levels, and so reduce the formation of AGEs. (This is why I include powdered cinnamon in my daily protein shake.)

Other substances also appear to impede and possibly break the formation of AGEs and the cross-linking, but many have not been evaluated specifically for those attributes yet. Not surprisingly, you'll recognize many of these as "anti-aging" substances: resveratrol, alpha-lipoic acid, inositol, curcumin, taurine, histidine, rosemary, B6 (pyridoxine), and many flavonoids such as quercetin and rutin. Once the research is finally done, I think we'll learn their benefits are related to AGEs.

No-Problem Sweeteners

If you need to use a sweetener in your beverages or in cooking, I recommend **xylitol**. The crystals look and taste just like sugar and can be used as a sugar substitute in practically every type of recipe.

Xylitol is a natural product and nontoxic. It doesn't raise blood sugar levels or trigger the release of insulin, nor is it easily converted to fat the way sugar is. It can be used by pregnant and nursing women, as well as by babies and children.

(I do have to mention that some people experience a loosening of their bowels after consuming high levels of xylitol. If this happens to you, cut back on your intake.)

Unlike sugar, xylitol doesn't promote tooth decay. In fact, it helps prevent it. Another advantage of xylitol is that bacteria can't digest or feed on it, and it's non-fermentable so it isn't converted to acids by oral bacteria. It actually neutralizes acid and remineralizes teeth. It makes a great mouthwash. Research has shown it makes oral bacteria less virulent and helps prevent ear and sinus infections, allergies, and even asthma. Xylitol is the primary ingredient in the product Xlear, which I highly recommend as a way of dealing with each of these problems.

Since xylitol is non-fermentable, intestinal bacteria can't digest it as it passes through the digestive tract into the intestines. Instead, it acts as a fiber, and produces beneficial short-chain fatty acids.

As I was writing this, I was reminded that the high-fructose corn syrup folks are already working on public opinion. Visit *www.sweetsurprise.com* to see what's up.

Relieve Pain With Turmeric

You may have heard quite a bit about the almost miraculous benefits of the Indian spice turmeric. It can provide benefits in conditions as varied as diabetes, Alzheimer's, and cancer. The most active component of turmeric, curcumin, appears to work in two separate pathways.

- First, it scavenges several varieties of free radicals, including hydroxyl, peroxide, and superoxide radicals.
- Second, it directly suppresses inflammation through compounds such as leukotrienes, interleukins, tumor necrosis factor alpha, nuclear factor kappa B, and the COX-2 enzyme.

One obvious benefit of reducing inflammation is in the relief of pain. It looks like turmeric is effective in this area as well. In fact, in one study 1,200 mg of turmeric daily was just as effective as 300 mg of the NSAID phenylbutazone at relieving arthritis pain. (*Indian J Med Res 80;71:632–634*)

A Problem, and a Solution

Unfortunately, turmeric is very poorly absorbed in your digestive tract. According to some estimates, less than 5 percent makes its way into your bloodstream. Turmeric is metabolized quickly, and it passes through the digestive tract quickly. Both factors contribute to the low absorption rate.

One strategy for improving the absorption of turmeric is a technology called phytosome encapsulation, in which droplets of an extract of the herb are wrapped in a thin layer of phosphatidylcholine (PC), a component of soy. The PC wrapping increases the absorption of turmeric by up to eight times. The same process has been successfully applied to green tea and lysine, among others.

By the way, I've heard concerns from some readers about the soy part of phytosomes. People are concerned about the effects of soy on their thyroid, or they say they're allergic to soy. In the case of phytosomes, I don't think the soy would be a problem. While the label on a phytosome product will say it "contains soy," the amount of soy is rather small compared to the amount of the active ingredient. In addition, most if not all of the offending proteins have been left behind in the process of extracting the PC. And it certainly doesn't hurt matters that PC is an essential component of nerve cells, particularly those in your brain. It's why I've been recommending lecithin for brain health all these years. Whatever PC is contained in the phytosome formulation goes to work supporting your brain. Call it a side benefit of relieving your pain.

Take care,

If you have questions or comments for Dr. Williams, please send them to the mail or e-mail addresses listed to the right. Of course, practical and ethical constraints prevent him from answering personal medical questions by mail or e-mail, but he'll answer as many as he can in the Mailbox section of *Alternatives*. For our part, we'll do our best to direct you to his issues, reports, and products related to the subject of your interest.

Here's how you can reach us:

- For Customer Service matters such as address changes, call **800-527-3044** or write to **custsvc@drdavidwilliams.com.**
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- For back issues or reports, call **800-718-8293.**
- To sign a friend up for *Alternatives*, call **800-219-8591.**

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