

SWEET FACTS YOU SHOULD KNOW ABOUT SUGAR

Sugar, like fat, gets a lot of sour press, some deserved, some not. Babies are born with a sweet tooth. Human milk is quite sweet, so a child begins life making the connection between eating, drinking, and pleasure. Sugars are one form of carbohydrates and carbohydrates are good for you, as long as you eat the right kinds in the right amounts. Carbohydrates are your body's main source of energy. You couldn't live or work without them. Your body needs a lot of carbohydrates - around 60 to 70 percent of your total calories should be in the form of carbs. But before you reach for the carbs in a candy bar, take some time to learn about sugar and other kinds of carbs. Over-processed, factory-made sugars and starches have given carbohydrates a bad reputation. Once you understand which carbs are best for your body, including which sugars are good for you, you can indulge a sweet tooth and still enjoy sweet health.

TOP NINE COMPLEX CARBS

- legumes: beans, peas, chick peas, lentils
- chickpeas
- nut butters
- oatmeal (without added sugar)
- pasta
- sweet potatoes
- whole grains: whole wheat, brown rice
- whole-grain cereals

Sugar science. Carbohydrates appear in many forms in many foods, and there are also many different kinds of sugar besides the familiar white grains in the sugar bowl.

SWEETEST SUGARS

Carbohydrates differ in their degree of sweetness, and complex carbohydrates, such as starches, while being the least sweet, are the best for your body. Carbs ranked from most sweet to least sweet are:

- Honey
- fructose sugar (fruits, fruit concentrate)
- table sugar (sucrose)
- complex carbohydrates (starches)

Complex carbs taste less sweet because, being a larger molecule; they don't fit as easily into the sweet receptors of the taste buds as do the more simple sugars.

RATING SUGARS: BEST TO WORST

Nutritionally speaking, there is no such thing as a bad sugar, since all digestible sugars provide energy to the body. It doesn't matter to an individual cell whether the glucose it is using for fuel entered the body as a starch or as a sugar. Yet, simple and complex carbohydrates behave differently in the body and are part of different nutritional packages. The best carbs are those that not only provide a steady supply of energy, but also bring other nutrients the body needs. The worst carbs come in packages with few other nutrients, except perhaps fat, and cause the blood sugar, and often a person's mood, to be unstable.

BEST CARBS

Here's how to cash in on your carbs. The best source of energy is complex carbohydrates, better known by grandmother's term "starches." It takes the body a long time to disassemble these elaborate necklaces of sugar molecules. Enzymes in the stomach work steadily to break the bonds between the sugars until they are changed into simple molecules of glucose, which enter the bloodstream at an even pace. Complex carbohydrates are like a time-released capsule. They provide slow, constant energy, the stomach feels full longer, and the body does not experience the highs and lows of blood-sugar swings.

NUTRI TIP

Satisfying Carbs

Beginning a meal with a complex carbohydrate food, such as whole grain pasta, and eating it slowly will lessen your craving for fats during the rest of the meal. You'll start to feel full and won't want as much of higher-fat foods. So use low carb. pasta (with low-fat sauce) to curb overeating.

Complex carbohydrates are found in grains, vegetables, and legumes -- foods that provide vitamins, minerals, and fiber as well as energy. You get a lot of nutritional bang for your buck with complex carbs.

NEXT BEST

Fructose sugars are simple monosaccharides rather than complex carbohydrates. They come in packages - fruits - that contain important nutrients and fiber. Fruit sugars provide quick energy, but do not excite the blood sugar roller coaster because the fiber slows absorption of the sugars. Unlike the simple sugar glucose that quickly enters the bloodstream, fructose sugar has to go to the liver before it is released into the bloodstream and carried to the body's cells. Since fructose is the preferred source of glycogens (sugars stored in the liver), it is a valuable energy food before and after long periods of exercise.

CARBS TO CONSUME WITH CAUTION

Conventional wisdom says that since all carbohydrates are eventually digested and absorbed as glucose, the original food source of the sugar, whether a bean or a candy bar, matters little. Sugar is sugar. Sucrose is sucrose. Not exactly! New insights into how various sugars behave in the body has revealed otherwise. While it is true that the sucrose in an orange is chemically the same as the sucrose in the much-maligned table sugar, the fact that the sucrose in the orange is packaged along with other nutrients makes it behave biochemically more friendly in the body. When you eat sucrose as naturally part of fruits or vegetables, you get not only vitamins and minerals in the package, but you get fiber and other complex carbohydrates that steady the absorption of the sugar. Yet, take the sugar away from the rest of the fruit and vegetable and refine it into a powder, and it's this processing that downgrades sucrose from the healthy to the junk food category. So, it's the company the sugar keeps with other foods that affects its absorption from the intestines and its consequent behavior in the body.

To understand why these sugars merit the label "junk sugars," let's take a ride with these sugars from the mouth to the bloodstream to see how they affect the body. Junk sugars are called simple carbohydrates because they are short, uncomplicated molecules. Because simple sugars are already so small, they require little or no breaking down in the intestines. The sucrose molecule is quickly broken down into glucose and fructose, and all that glucose is actively pumped through the intestinal cells quickly into the bloodstream. A sprinkle of sugar that hits the intestines enters the bloodstream almost immediately, and the roller coaster ride begins.

After the refined sugars rush into the bloodstream, blood sugar levels rise, pressuring the pancreas to release insulin, the hormone needed to escort these sugars into the body's cells. Lots of insulin helps the sugar get used up rapidly, but then the blood sugar level plunges. The body hits a sugar low, also known as hypoglycemia or "sugar blues." Now, just as insulin was released when the blood sugar was too high, other hormones are released when the blood sugar is too low. These stress hormones want to restore the blood sugar to normal levels, so they squeeze stored sugar from the liver, sending the blood sugar back up. These adjustments work better in some people than in others and better in some circumstances than others. Sugar-sensitive individuals experience the ups and downs of blood sugar levels as a roller-coaster ride, and their moods and behavior go up and down with their blood sugar.

FROM SWEET TO SOUR CHILDREN

Research suggests that children are more sugar sensitive than adults, and the effects are more pronounced in younger children, according to Dr. Keith Conners, author of *Feeding the Brain*. This could be related to the fact that the brain grows rapidly in the preschool years, exaggerating the effects of sugar on behavior and learning.

In an interesting study, researchers fed normal preschoolers a high-sugar drink, containing the amount of sugar in the average can of soda, and compared them with children who received a non-sugar drink. The sugar group experienced decreased learning performance and more hyperactivity than the non-sugar group.

Some children are sugar junkies. We've noted that some of our eight children have more of a sweet tooth than others. When I've brought home food gifts from patients and laid them on the kitchen table, within minutes the highly-sugared ones would be "missing," to be found later in Stephen's secret stash.

Children tagged with the ADHD label are often sugar-sensitive. There may be several reasons for this. Hyperactive kids are impulsive and need instant gratification. They need more energy and they need it now! Unable to curb their appetite, they overdose on junk foods. Some studies of hyperactive children show a higher blood sugar rise following a high sugar meal than one finds in normally active children. Hyperactive children seem to metabolize sugar differently. In response to a high sugar meal, hyperactive kids increase their output of the stress hormone, cortisol, the hormone that plays an important role in regulating blood sugar levels. Dr. Keith Conners, author of *Feeding the Brain*, concludes from his original research that while the neurotransmitters in the brains of normally active children signal the hormones to regulate blood sugar, brains of hyperactive children do not seem to send the same signals.

While studies show that activity levels go up in both hyperactive and normal children on high- sugar diets, the hyperactive children also become more aggressive. Adding protein to a high- sugar meal mellows out the behavioral and learning deterioration. Chalk up another point for eating a balanced breakfast.

Sugar promotes cravings. The more sugar you eat, the more sugar you want. A high sugar meal raises the blood glucose level, which triggers the outpouring of insulin. This excess insulin lingers in the system, triggering a craving for more sugar, thus adding another hill to the roller coaster ride.

Sugar promotes obesity. People tend to eat and drink too much foods and beverages that are sweetened with refined sugar. Foods with a high glycemic index stimulate the production of LPL (lipoprotein lipase), the enzymes that encourage the body to store food in fat cells. Thus, lowfat diets that contain carbohydrates with a high glycemic index can actually cause weight gain. It's much easier to binge on chocolate chip cookies than fresh peaches or apples. Healthier sugars usually come with a lot of fiber that takes up room in the stomach. All those extra calories have to go somewhere. Your body says, "Ah, extra energy. I'll pack that away as fat and save it in case there's ever a famine!" Refined starches, such as white flour, white rice, white pasta, and corn starch are more likely to turn into body fat than natural starches, such as whole grains which, because they contain more fiber, are digested more slowly and raise the blood sugar less drastically. Yes, fat will make you fat, but so will sugar. Put them together in soda and chips or high-fat baked goods, and you can expect to put on some pounds. So, even though fat has gotten the reputation as an unhealthful food, excess sugars deserve an equal reputation.

Sugar promotes diabetes. While the risk of developing diabetes lies more in the genes than in the diet, the old grandmother's tale that too much sugar causes diabetes does have scientific support.

Sugar promotes heart disease. When bears are storing up body fat for their long winter hibernation, they consume lots and lots of carbohydrates. When you eat excess carbohydrates, your body turns these sugars into fat. The body stores excesses of most nutrients as a safeguard against starvation. If you eat more carbohydrates than you can burn off, the excess is stored as fats. People who eat too much sugar tend to have higher blood tryglycerides, and this increases the risk of cardiovascular disease.

9 WAYS TO CURB YOUR SUGAR CRAVINGS

The good news about the link between body chemistry and cravings is that there are other ways to stimulate the release of your well-being hormones and to keep them at steady levels. Here are some suggestions:

- 1. Exercise regularly.** One of the healthiest ways to experience better living through better brain chemistry is to exercise vigorously, an average of 20 minutes a day. I never realized how much endorphins could be stimulated by exercise until I experienced this phenomenon.
- 2. Graze on good foods.** Instead of bingeing on three high-carbohydrate meals a day and snacking on junk sugar foods in between, eat smaller, more frequent meals. Concentrate on eating complex carbohydrates throughout the day. Keeping your stomach satisfied, but not too full, reduces cravings. When you overeat, the feeling of fullness is usually followed by a feeling of emptiness 4 to 6 hours later, just in time for another round of overindulgence. If you're just a little bit full (i.e., satisfied) throughout the day, you're less likely to crave a sugar jolt. The key to weight control is to graze on foods that keep you full and aren't fattening.
- 3. Drink, drink, drink. Not alcohol, but water.** Your stomach doesn't have to be full of food to suppress cravings. Water will do the trick. Drinking at least eight 8-ounce glasses of water throughout the day will trick your body into thinking it is satisfied. Carry around a bottle of water to sip. Herbal teas are also good.
- 4. Eat a healthy breakfast.** Give your brain the best start by beginning each day with a balanced breakfast of complex carbohydrates and proteins, the biochemical partners that not only enhance learning and behavior for school and work, but also stimulate the brain's neurotransmitters to contribute to a feeling of lasting well-being. People who start the day with a healthy breakfast are less likely to experience a blood sugar dip and carbo craving later in the morning. People who skip breakfast are more likely to overeat the rest of the day.
- 5. Cut back on caffeine.** Caffeine can trigger a drop in blood sugar. That morning doughnut with coffee can leave you desperate for another doughnut an hour later. Substitute fruit juice or herbal tea for the coffee, and the doughnuts won't look so tempting.

If your sweet tooth still craves sweets, switch from junk sugars to fruit sugars, preferably in the form of whole fruit, such as an apple or orange. Fructose sugars do not cause the blood levels of sugar and insulin to bounce around, and the fiber in the fruit will satisfy your stomach.

6. Develop a tart tooth. Instead of a sweet tooth, develop a tart tooth. As you explore new ways of eating, you will notice a difference in sweetness between traditional American desserts and those from other cultures. Many American desserts are sickeningly sweet, a taste we have become accustomed to. European desserts tend to be more tart, a taste that once you get used to it, becomes more palatable without the after-dessert blood sugar plunge. These delicacies are also better for your mood. When you're making desserts, experiment with different amounts and different kinds of sweetness according to the tartness you desire and the natural tartness of the food. For example, if you're baking an apple pie, some apples are sweeter than others, requiring varying amounts of sweeteners.

7. Develop a sweeter gut feeling. Change your sweet tooth to a tart tooth and your intestines will thank you. After a few months of less added sugar in your diet, your intestines, your body, and your mood get used to the more comfortable after-meal feeling of complex carbohydrates. Eventually, you will shun frostings, candy bars, and sugar-sweetened cereals and will be put off by how you feel if you eat a packaged sweet treat, especially one that is in the junk food category. Once your tongue gets used to a tarter taste, you're well on your way to enjoying a healthier relationship with the sugars in your life.

8. Try non-food subs. The best way to break any habit, including a food craving, is to substitute an alternative pleasure. Write down what conditions trigger your cravings, such as boredom, loneliness, anxiety, depression, and develop other ways to perk yourself up. Try exercise, a hobby, music, or just close your eyes for a few minutes and visualize something that relaxes you before going back to your every day tasks.

9. Compromise a bit. It's okay to give into your cravings occasionally. Your body is forgiving - within limits. If you continually resent giving up a food, you will eventually give in and eat it. You don't have to have a perfect diet. If you believe you can't live without ice cream, you can't. Just cut down on how often and how much you eat and try some alternatives, such as lower fat ice cream or frozen yogurt. Eventually, as your body becomes wiser, you will crave what's good for you and the high-fat premium ice cream will seem far too rich.

Food cravings, like other habits, don't change overnight. It may take several weeks before these crave-curbing techniques feel natural and satisfying. Choose the ones that you think will work for you and try others as needed.