

# SUGAR AND YOUR HEALTH

## 76 Ways Sugar Can Ruin Your Health

Contributed by Nancy Appleton, PhD, Author of the book, "Lick the Sugar Habit"

In addition to throwing off the body's homeostasis, excess sugar may result in a number of other significant consequences. The following is a listing of some of sugar's metabolic consequences from a variety of medical journals and other scientific publications.

1. Sugar can suppress your immune system and impair your defenses against infectious disease
2. Sugar upsets the mineral relationships in your body: causes chromium and copper deficiencies and interferes with absorption of calcium and magnesium.
3. Sugar can cause a rapid rise of adrenaline, hyperactivity, anxiety, difficulty concentrating, and crankiness in children.
4. Sugar can produce a significant rise in total cholesterol, triglycerides and bad cholesterol and a decrease in good cholesterol.
5. Sugar causes a loss of tissue elasticity and function.
6. Sugar feeds cancer cells and has been connected with the development of cancer of the breast, ovaries, prostate, rectum, pancreas, biliary tract, lung, gallbladder and stomach.
7. Sugar can increase fasting levels of glucose and can cause reactive hypoglycemia.
8. Sugar can weaken eyesight.
9. Sugar can cause many problems with the gastrointestinal tract including: an acidic digestive tract, indigestion, malabsorption in patients with functional bowel disease, increased risk of Crohn's disease, and ulcerative colitis.
10. Sugar can cause premature aging.
11. Sugar can lead to alcoholism.
12. Sugar can cause your saliva to become acidic, tooth decay, and periodontal disease.
13. Sugar contributes to obesity.
14. Sugar can cause autoimmune diseases such as: arthritis, asthma, multiple sclerosis.
15. Sugar greatly assists the uncontrolled growth of *Candida Albicans* (yeast infections)
16. Sugar can cause gallstones.
17. Sugar can cause appendicitis.
18. Sugar can cause hemorrhoids.
19. Sugar can cause varicose veins.
20. Sugar can elevate glucose and insulin responses in oral contraceptive users.
21. Sugar can contribute to osteoporosis.
22. Sugar can cause a decrease in your insulin sensitivity thereby causing an abnormally high insulin levels and eventually diabetes.
23. Sugar can lower your Vitamin E levels.
24. Sugar can increase your systolic blood pressure.
25. Sugar can cause drowsiness and decreased activity in children.
26. High sugar intake increases advanced glycation end products (AGEs)(Sugar molecules attaching to and thereby damaging proteins in the body).
27. Sugar can interfere with your absorption of protein.
28. Sugar causes food allergies.
29. Sugar can cause toxemia during pregnancy.
30. Sugar can contribute to eczema in children.
31. Sugar can cause atherosclerosis and cardiovascular disease.
32. Sugar can impair the structure of your DNA.
33. Sugar can change the structure of protein and cause a permanent alteration of the way the proteins act in your body.
34. Sugar can make your skin age by changing the structure of collagen.

35. Sugar can cause cataracts and nearsightedness.
36. Sugar can cause emphysema.
37. High sugar intake can impair the physiological homeostasis of many systems in your body.
38. Sugar lowers the ability of enzymes to function.
39. Sugar intake is higher in people with Parkinson's disease.
40. Sugar can increase the size of your liver by making your liver cells divide and it can increase the amount of liver fat.
41. Sugar can increase kidney size and produce pathological changes in the kidney such as the formation of kidney stones.
42. Sugar can damage your pancreas.
43. Sugar can increase your body's fluid retention.
44. Sugar is enemy #1 of your bowel movement.
45. Sugar can compromise the lining of your capillaries.
46. Sugar can make your tendons more brittle.
47. Sugar can cause headaches, including migraines.
48. Sugar can reduce the learning capacity, adversely affect school children's grades and cause learning disorders.
49. Sugar can cause an increase in delta, alpha, and theta brain waves which can alter your mind's ability to think clearly.
50. Sugar can cause depression.
51. Sugar can increase your risk of gout.
52. Sugar can increase your risk of Alzheimer's disease.
53. Sugar can cause hormonal imbalances such as: increasing estrogen in men, exacerbating PMS, and decreasing growth hormone.
54. Sugar can lead to dizziness.
55. Diets high in sugar will increase free radicals and oxidative stress.
56. High sucrose diets of subjects with peripheral vascular disease significantly increases platelet adhesion.
57. High sugar consumption of pregnant adolescents can lead to substantial decrease in gestation duration and is associated with a twofold increased risk for delivering a small-for-gestational-age (SGA) infant.
58. Sugar is an addictive substance.
59. Sugar can be intoxicating, similar to alcohol.
60. Sugar given to premature babies can affect the amount of carbon dioxide they produce.
61. Decrease in sugar intake can increase emotional stability.
62. Your body changes sugar into 2 to 5 times more fat in the bloodstream than it does starch.
63. The rapid absorption of sugar promotes excessive food intake in obese subjects.
64. Sugar can worsen the symptoms of children with attention deficit hyperactivity disorder (ADHD).
65. Sugar adversely affects urinary electrolyte composition.
66. Sugar can slow down the ability of your adrenal glands to function.
67. Sugar has the potential of inducing abnormal metabolic processes in a normal healthy individual and to promote chronic degenerative diseases.
68. I.V.s (intravenous feedings) of sugar water can cut off oxygen to your brain.
69. Sugar increases your risk of polio.
70. High sugar intake can cause epileptic seizures.
71. Sugar causes high blood pressure in obese people.
72. In intensive care units: Limiting sugar saves lives.
73. Sugar may induce cell death.
74. In juvenile rehabilitation camps, when children were put on a low sugar diet, there was a 44 percent drop in antisocial behavior.
75. Sugar dehydrates newborns.
76. Sugar can cause gum disease.

# How Much Sugar Am I Eating?

To find out how much sugar you are consuming in one serving, look for the amount of sugar listed on the "Nutrition Facts" Panel of the foods you buy. We can use simple math to determine how much sugar is in the foods we eat.

## Measurement Equivalents

4 grams = 1 teaspoon  
 3 teaspoons = 1 tablespoon  
 16 tablespoons = 1 cup

Nutrition Facts	
Serv. Size 1 can	
Servings 6	
Amount Per Serving	
Calories 140	Calories From Fat 0
% Daily Value *	
Total Fat 0g	0%
Sodium 50mg	2%
Total Carbohydrate 39g	13%
<b>Sugars 39g</b>	
Protein 0g	

# of grams of sugar divide by 4 = # teaspoons of sugar in one serving  
 # of teaspoons of sugar divide by 3 = # tablespoons of sugar in one serving  
 # of tablespoons of sugar divide by 16 = # cups of sugar in one serving

For example, 1 can (12 ounces) of soda with 39 grams of sugar =  
 9 3/4 teaspoons of sugar, or  
 3 1/4 tablespoons of sugar, or  
 1/5 cup of sugar

When checking the sugar and calorie contents on soft drinks, keep in mind that every 20-ounce bottle contains 2.5 servings. That means a soft drink that contains 100 calories and 40 g of sugar per serving gives you 250 calories and 100 g of sugar if you drink the entire bottle.

## Sugar in Soda Bottles and Juice

Amounts of sugar may vary between soda brands, types, and even regions of the country. These numbers are calculated from an Idaho product.

To make sugar soda bottles, buy a plastic six-pack of soda bottles that can be resealed (lids screw on and off). It is best if the bottles are in a plastic ring that holds them together for easy transport. Empty, wash and dry the bottles. Take off any labels. Fill bottles with sugar progressing from the amount of sugar in 1 soda to the amount of sugar in six sodas as listed below. Label the bottles with the information below as well.

1 soda (16 oz) = 13.3 teaspoons of sugar = 200 calories  
 2 sodas (32 oz) = 26.7 teaspoons of sugar = 400 calories  
 3 sodas (48 oz) = 39.9 teaspoons of sugar = 600 calories  
 4 sodas (64 oz) = 53.3 teaspoons of sugar = 800 calories  
 5 sodas (80 oz) = 66.7 teaspoons of sugar = 1,000 calories  
 6 sodas (96 oz) = 79.9 teaspoons of sugar = 1,200 calories

## SLURPING YOUR WAY TO WEIGHT GAIN

Liquid calories slip by so easily, it's almost hard to take them seriously. But alas, all those super-sized beverages and high fructose corn syrup concoctions have contributed, quite stealthily, to our obesity epidemic. Our adults have the beer bellies and our children the Big Gulp guts to prove it. Although some cities have started to ban sales of soda in schools, we adults are free to roam in the world of heavily sauced drinks, sometimes adding a meal-sized amount of calories from a tiny little straw. Here are some obvious and not-so-obvious ways to bulk up without ever having to chew.



**Burger King Chocolate Ice Cream Shake:** 950 calories, 29 grams fat (19 saturated), 640 milligrams sodium, 146 grams sugar

Hmmm ... a milkshake, or an entire meal? You could have a burger (290 calories), small fries (230 calories), and a small soda (140 calories) for fewer calories (660) than this drink. I'd rather chew.

**A better bet:** small chocolate milk.



**Starbucks White Chocolate Mocha Frappuccino:** 410 calories, 16 grams fat (10 saturated), 270 milligrams sodium, 54 grams sugar

Is it a coffee, or is it a milkshake? Although the CEO of Starbucks recently made the decision to stop selling sandwiches in their stores, I'm guessing they'll keep selling these espresso-flavored milkshakes as long as we keep buying them. Darn, they're good.

**A better bet:** iced skim milk latte.



**Jamba Juice Peanut Butter Moo'd Shake Original Size:** 840 calories, 21 grams fat ( 4.5 saturated), 122 grams sugar, 15 milligrams cholesterol

Jamba Juice's logo contains a lot of colorful fruit, but there's little of it in this shake. Instead, it has frozen yogurt, chocolate moo'd base (what *is* that?), soy milk, bananas, and peanut butter. With 122 grams of sugar (very few of them from the banana), it's the equivalent of drinking five Cokes (a can has about 40 grams of sugar). Even their less obviously bad Strawberries Wild has 83 grams of sugar.

**A better bet:** 16-ounce Bright Eyed and Blueberry shake; it has 220 calories, and 38 grams sugar



**Orange Julius' Strawberry Banana Shake (32-ounce):** 600 calories, 14 grams fat (11 saturated), 87 grams sugar, 130 milligrams sodium

It must be a first: a shake made with lowfat frozen yogurt, bananas, and strawberries that contains 11 grams of saturated fat. Truly amazing. I'd rather eat a Snicker's bar, which has half the calories (280), less saturated fat (5 grams), and less sugar (30 grams).

**A better bet:** a 20-ounce Orange Julius has only 160 calories and 5 grams fat, none of them saturated



**7-Eleven Double Gulp Soda:** 600 calories

I drank sixty-four ounces of soda on a cross-country road trip once, and it was a bad scene. My stomach didn't feel quite right for at least a day, and my friend, who also imbibed, was so hopped up on caffeine she started giving lip to the Texas highway patrol who pulled her over for doing ninety in a fifty zone. I think there's still a warrant out for her arrest.

Soda isn't that bad every once in a while; unfortunately, it's hard to find anything smaller than a 16-ouncer and really easy to get things much larger. Cans of

soda seem to be obsolete. The Food and Drug Administration's official serving size is 8 ounces (100 calories), not eight times that amount. Bigger isn't better.

**A better bet:** can of soda (150 calories) or a diet soda.



**Bottled Juice:** 300–400 calories for 20 ounces

True, juice isn't inherently bad for you, and can sometimes provide vitamins and nutrients. However, you'd be much better off eating the fruit from which it came rather than drinking mostly empty calories. Many store-bought juices have added sugars, and most come in a 2.5 serving or larger container, making that breakfast accompaniment as many calories as the meal itself.

**A better bet:** stick to 8-ounce containers or kid's containers; look for 100 percent juices; juice your own.



**Pina Colada:** 644 calories (approximately)

If you really like Pina Coladas, you may not only get caught in the rain, but in the fat farm. At around seven hundred calories, this drink, made with rum, coconut milk, and pineapples has more calories than a Big Mac. Other calorically heavy-hitting cocktails are Long Island Iced Teas, Margaritas, and White Russians. Damn, I love those.

**A better bet:** A glass of red wine; a light beer – or better yet – don't drink alcoholic beverages at all.

While it's hard to think about drinks as anything but additions to a meal, the sizes and sugar-laden drinks we're faced with today make them more like an entire meal. Unfortunately, rarely are they as satisfying or as filling. So when I find myself having more pints of beer than slices of pizza, I get rid of them the only way I know how: by drinking water while I exercise.

## Health and Sugar – The Sweet Truth

To stay in good health, our bodies are designed to run on complex and simple carbohydrates. This is the easiest fuel for the body to turn into energy.

What are these? Foods like whole grains, vegetables, beans or lentils and simple carbohydrates like fruit. When we eat these types of food, our bodies work as they're supposed to by gradually turning these foods into energy.

All the nutrients that the body needs to keep the digestive system ticking over nicely is contained in these whole foods as they also contain natural fibre. We have, however learned how to extract sweetness out of whole foods and leave the rest – which is bad news for our nutrition and health.

Most concentrated forms of sugar are empty of nutrition, but high in calories - unlike the natural sources of sugar contained in fruit. White sugar has 90 percent of its vitamins and minerals removed, and without these our metabolism becomes sluggish and our energy levels slump.

All forms of concentrated sugar are bad news for our health – white sugar, brown sugar, malt, glucose, honey and syrup, are fast releasing, causing rapid rises in blood sugar levels. If this sugar is not needed by the body it is put into storage, eventually emerging as fat.

We now eat a lot of refined carbohydrates such as white bread, white rice, cakes, biscuits, and chocolate. When we eat these foods, our blood sugar level rises and we experience a surge of energy. This surge does not last long and it soon drops down again as the body releases insulin to re-balance blood sugar levels

Keeping your blood sugar balanced for health is probably the most important factor in maintaining even energy levels and weight. The level of glucose in your blood mostly determines your appetite. When the level drops you feel hungry.

The glucose in your bloodstream is available to your cells to make energy. When the levels are too HIGH the body converts the excess to glycogen (a short term fuel store mainly in the liver and muscle cells) or fat, our long-term energy reserve.

When the levels are too LOW we experience symptoms such as fatigue, poor concentration, irritability, nervousness, depression, sweating, headaches, and digestive problems.

An estimated 3 out of 10 people have lost the ability to keep their blood sugar even. It may go too high, then drop too low. The result over the years is that they become increasingly unhealthy, overweight and lethargic. But if you can control your blood sugar levels the result is even weight and constant energy.

Type 2 diabetes is an illness that is afflicting more people in the affluent western world and becoming an epidemic, affecting 1 person in every 4. This is caused as a direct result of the body being unable to control blood sugar.

## How Does Diabetes Come About?

Diabetes is an extreme form of blood sugar imbalance. The condition comes about when the body can no longer produce enough insulin, a hormone that helps to carry glucose out of the blood and into cells.

The result is too much sugar in the blood and not enough for the cells. This is very bad for our long term health. One of the tell tale signs is a continuous raging thirst as the body tries to dilute the excess blood sugar by stimulating the urge to drink.

What makes this happen? The obvious answer is eating too much sugar and sweet food. The worse culprit is glucose, which is the simplest form of sugar. Fructose, the sugar in fruit, has little effect on blood sugar.

The best foods of all are pulses - peas, beans and lentils. None of these have substantial effects on blood sugar. Porridge oats are healthier and better than most processed breakfast cereals. However, vegetables, when highly processed, can have a considerable effect on blood sugar. Instant mash for example, has the same effect as a Mars bar.

Alcohol also upsets blood sugar levels. So do stimulants such as tea and coffee, cola and other soft drinks and cigarettes. These stimulate the release of adrenalin and other hormones preparing the body for action by releasing sugar stores and raising blood sugar levels to give our brains and muscles a boost of energy.

Stress also causes blood sugar to rise. The body then has to cope with the excess of blood sugar by releasing yet more hormones to take the glucose out of circulation.

The combination therefore of too much sugar, stimulants and prolonged stress taxes the body and results in an inability to control blood sugar levels which, if severe, can develop into diabetes and ultimately obesity.

## What Do You Drink? It Makes More Difference Than You Think!

Calories in drinks are not hidden (they're listed right on the Nutrition Facts label), but many people don't realize just how many calories beverages can contribute to their daily intake. As you can see in the example below, calories from drinks can really add up. But there is good news: you have plenty of options for reducing the number of calories in what you drink.

Occasion	Instead of...	Calories	Try...	Calories
Morning coffee shop run	Medium café latte (16 ounces) made with whole milk	265	Small café latte (12 ounces) made with fat-free milk	125
Lunchtime combo meal	20-oz. bottle of non diet cola with your lunch	227	Bottle of water or diet soda	0

Afternoon break	Sweetened lemon iced tea from the vending machine (16 ounces)	180	Sparkling water with natural lemon flavor (not sweetened)	0
Dinnertime	A glass of nondiet ginger ale with your meal (12 ounces)	124	Water with a slice of lemon or lime, or seltzer water with a splash of 100% fruit juice	0 calories for the water with fruit slice, or about 30 calories for seltzer water with 2 ounces of 100% orange juice.
Total beverage calories:		796		125-155

*(USDA National Nutrient Database for Standard Reference)*

Substituting no- or low-calorie drinks for sugar-sweetened beverages cuts about 650 calories in the example above. Of course, not everyone drinks the amount of sugar-sweetened beverages shown above. Check the list below to estimate how many calories you typically take in from beverages.

Type of Beverage	Calories in 12 oz	Calories in 20 oz
Fruit punch	192	320
100% apple juice	192	300
100% orange juice	168	280
Lemonade	168	280
Regular lemon/lime soda	148	247
Regular cola	136	227
Sweetened lemon iced tea (bottled, not homemade)	135	225
Tonic water	124	207
Regular ginger ale	124	207
Sports drink	99	165
Fitness water	18	36
Unsweetened iced tea	2	3
Diet soda (with aspartame)	0*	0*
Carbonated water (unsweetened)	0	0
Water	0	0

\*Some diet soft drinks can contain a small number of calories that are not listed on the nutrition facts label.  
*(USDA National Nutrient Database for Standard Reference)*

Milk contains vitamins and other nutrients that contribute to good health, but it also contains calories. Choosing low-fat or fat-free milk is a good way to reduce your calorie intake and still get the nutrients that milk contains.

Type of Milk	Calories per cup (8 oz.)
Chocolate milk (whole)	208
Chocolate milk (2% reduced-fat)	190
Chocolate milk (1% low-fat)	158
Whole Milk (unflavored)	150
2% reduced-fat milk (unflavored)	120
1% low-fat milk (unflavored)	105
Fat-free milk (unflavored)	90

\*Some diet soft drinks can contain a small number of calories that are not listed on the nutrition facts label.  
*(USDA National Nutrient Database for Standard Reference)*

# The Permanent Way to Control Sugar Cravings and Lose Weight

The taste for sweet things is often picked up in childhood. Especially so if sweet things are offered as a reward or to cheer someone up – they then become emotional comforters, especially at times of stress.

Remember we are designed to eat health food that you can pick off a tree or grow in the ground. Next time you are shopping take a good look at the average supermarket trolley - ever seen that stuff grow on trees?

## Healthy steps to reduce sugar cravings

1. Dilute fruit juice and get used to eating fruit instead of having a dessert. Sweeten wholefood breakfast cereals like muesli with fruit and have a piece of fruit instead of sweet snacks. If you reduce sugar gradually you will get used to the taste.
2. Eat whole foods - whole grains, lentils, beans, nuts, seeds, fresh fruit and vegetables - and avoid refined white and overcooked foods.
3. Eat 5 servings a day of dark green leafy and root vegetables such as watercress, carrots, sweet potatoes, broccoli, Brussels sprouts, spinach, green beans or peppers, either raw or lightly cooked.
4. Eat 3 or more servings of fresh fruit such as apples, pears, plums, bananas, berries, melon or citrus fruits.
5. Eat 4 or more servings a day of whole grains such as rice, millet, rye, oats, whole wheat, and corn, quinoa as a cereal, breads, pasta or pulses. Avoid any form of sugar, added sugar and white or refined foods. Eat dried fruits infrequently in small quantities, preferably soaked.

However these are general guidelines only and an individual diet plan is what you should aim for.

## Better Beverage Choices Made Easy

Now that you know how much difference a drink can make, here are some ways to make smart beverage choices:

1. Choose water, diet, or low-calorie beverages instead of sugar-sweetened beverages.
2. For a quick, easy, and inexpensive thirst-quencher, carry a water bottle and refill it throughout the day.
3. Don't "stock the fridge" with sugar-sweetened beverages. Instead, keep a jug or bottles of cold water in the fridge.
4. Make water more exciting by adding slices of lemon, lime, cucumber, or watermelon, or drink sparkling water.
5. Add a splash of 100% juice to plain sparkling water for a refreshing, low-calorie drink.
6. When you do opt for a sugar-sweetened beverage, go for the small size. Some companies are now selling 8-oz. cans and bottles of soda, which contain about 100 calories.
7. Be a role model for your friends and family by choosing healthy, low-calorie beverages. Serve healthy alternatives at your parties or dinners.