

Sweet Enough Without All That Sugar

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Sweeteners have been around since the earliest history of man and provided carbohydrates as a source of energy. Fruit and honey were the first sweet foods available. Today, sugar is often added to foods for preservation, fermentation, and flavor addition or enhancement.

Sugar provides a variety of functions for foods, but a diet high in added sugar may lead to chronic health problems. Many food manufacturers use artificial sweeteners or sugar substitutes to decrease the amount of sugar in a product. So what is the difference between sugars and artificial sweeteners? What part does sugar play in a healthy diet? Is life sweet without all that sugar?

Forms of Sweeteners

Sugar is called a nutritive sweetener because it provides energy in the form of carbohydrates but lacks other nutrients essential for growth, development, and health. Common names of nutritive sweeteners you may find in an ingredient list are in Table 1. We compare the sweetness of all other sweeteners to sugar.

Some sugars occur naturally, such as those found in milk (lactose) and fruits (fructose). Sugars added during the processing or manufacturing of a food are known as added sugars. Often,

foods manufactured to be reduced fat or low fat have added sugar to make up for the flavor lost with the fat. Examples of items that often have sugar added include fruit canned in heavy syrup, hot and cold sweetened cereals, sugar-sweetened beverages (including juices, sodas, sports drinks, and energy drinks), jams and jellies, condiments, salad dressings, baked goods, and sugar-sweetened coffee and tea.

Alternatives to nutritive sweeteners are nonnutritive sweeteners. As they can be 200 to 20,000 times sweeter than sugar, only very small amounts are needed to sweeten foods. They generally provide very few or no calories. Foods made with these sweeteners are often labeled “diet,” “sugar-free,” or “no added sugar.” These sugar substitutes may be naturally occurring or artificially made. The following nonnutritive sweeteners have been approved by the FDA: acesulfame potassium (acesulfame K), aspartame, neotame, saccharin, sucralose, and advantame. Other high-intensity sweeteners include sugar alcohols and plant-based sugar substitutes from the stevia plant or monk fruit. They must pass approval of the Food and Drug Administration (FDA) and be generally recognized as safe (GRAS) before they can be marketed in the United States.

Table 1. Common names for nutritive sweeteners.		
Granulated sugar	Sucrose	Molasses
Cane sugar	Fructose	Honey
Cane juice	Lactose	Maple syrup
Beet sugar	Galactose	Malt syrup
Corn syrup	Maltose	Brown rice syrup
Corn sweetener	Dextrose	Agave nectar
High-fructose corn syrup	Anhydrous dextrose	Fruit juice concentrate
Confectioner's sugar	Glucose	Date sugar
Brown sugar	Turbinado	Invert sugar

Table 2. Common names for sugar alternatives.		
Sorbitol	Acesulfame K	Saccharin
Mannitol	Aspartame	Sucralose
Xylitol	Neotame	Stevia/Truvia
Erythritol	Advantame	Monk fruit (luo han guo)

Nutritional Value

The amount of sweetener used in a product will be listed on the Nutrition Facts panel and ingredients list. Total carbohydrates will be identified, and total sugars and added sugar will be listed underneath (Figure 1). We can measure energy in calories, which will be listed at the top of the label. One gram of carbohydrate contains four calories.

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 240mg	6%

Figure 1. An example of a Nutrition Facts panel, with total sugars and added sugars highlighted.

- 1 teaspoon of sugar = 4 grams of carbohydrate and 16 calories
- 3 teaspoons or 1 tablespoon of sugar = 12 grams of carbohydrate and 48 calories

The body prefers carbohydrates as a source of energy over other sources of energy found in food. However, not all carbohydrates are the same. Simple carbohydrates are metabolized quickly by the body and provide short bursts of energy. These include added sugars. Complex carbohydrates are metabolized slower and provide gradual energy to use over time. These include whole grains, vegetables, and beans. While two foods might provide the same number of calories, the nutrients provided are what matter the most.

Nutrient-dense foods are rich in vitamins, minerals, dietary fiber, and other beneficial substances. Nutrient-dense foods typically do not have high amounts of added sugar. Examples of nutrient-dense foods are low-fat dairy products, fruits, vegetables, whole grains, and lean animal and plant-based protein options.

How Much is Too Much?

Most Americans consume more added sugar than the recommended amount. The U.S. Dietary Guidelines recommend that no more than 10 percent of daily calories come from added sugar. For example, a person who consumes a 2,000-calorie diet should have fewer than 200 calories a day from added sugar (about 12 teaspoons).

On average, Americans consume 17 teaspoons of added sugar per day. More than 30 percent of added sugar in the diet comes from beverages, with another 19 percent coming from desserts and sweet snacks. Many of the foods high in added sugar are not balanced with beneficial nutrients. Unfortunately, the highest levels of added sugar intake are among children, youth, and young adults.

The Role of Sugar in Health

A diet high in added sugar has negative effects on health and can result in chronic conditions like heart disease. Regularly eating foods high in added sugar is linked with high blood triglyceride levels—a risk factor for heart disease. An effective way to manage high triglycerides is to reduce added-sugar consumption.

A common misconception is that type 2 diabetes is caused by eating too much sugar. Although it does not directly cause the condition, consuming large amounts of added sugar can contribute to weight gain and obesity, which is one of the largest risk factors for type 2 diabetes.

Consuming foods and beverages high in added and naturally occurring sugars may increase the risk of developing dental caries, also called cavities. Alternative sweeteners do not contribute to cavities and may be a reason to incorporate foods sweetened this way into a diet. However, other components of the food or drink may lead to dental decay, so proper oral hygiene is necessary. Most sugar substitutes are not metabolized like sugar and do not cause a quick rise in blood glucose, so people may choose them to help manage blood glucose levels. They also may be used by manufacturers of foods and beverages to reduce the calorie content.

Consuming a balanced diet, engaging in physical activity, and reducing the amount of added sugar consumed can help reduce your risk of some health conditions.

Taking Control of Your Sugar Intake

There are several steps that can be taken to reduce added sugar in the diet. It is important to think about added sugar when preparing foods and beverages at home as well as when purchasing food and drinks at local food retailers or restaurants.

Reducing Added Sugar in the Diet

- Choose frozen fruits; whole, fresh fruit; or fruits canned in their own juices or water in place of fruits canned in heavy syrup and fruit juice. Rinsing canned options may help remove some of the added sugar.
- Cut back on snack foods and desserts high in added sugar.
- Add unsweetened or no-sugar-added versions of fruit sauces (such as applesauce) and yogurt into your diet.
- Use fruit as a natural sweetener in cereal and yogurt and as a topping for pancakes and waffles.
- Choose beverages with less added sugar when possible, such as water, unflavored milk, diet soda, and unsweetened tea or coffee.
- Practice mindful eating, eat slowly, and savor the natural sweetness of food.
- Ask to see nutrition information and then choose options that are lower in added sugar when dining out.

Reducing Added Sugar when Cooking and Baking

- Use one-half cup of sugar per cup of flour in cakes.
- Use one tablespoon of sugar per cup of flour in muffins and quick breads.
- Use one teaspoon of sugar per cup of flour in yeast breads. Do not remove all sugar in yeast breads, as sugar provides food for the yeast.
- Add cinnamon, nutmeg, vanilla, or almond extract to give the impression of sweetness.
- Replacing sugar with equal amounts of sucralose (marketed as Splenda) or stevia works well for most baked products. Add one-half teaspoon of baking soda in addition to each cup of Splenda used. Baking time is usually shorter, and the product will have a smaller yield and less browning.
- Aspartame, saccharin, or acesulfame potassium should only be used in products that are not baked. The sweet taste will vary with product combination or amounts of each sweetener used.
- You can reduce the amount of sugar in most non-baking recipes by 25 percent without much change to the flavor of the product.

Reducing Added Sugar when Food Shopping

- Reading the Nutrition Facts panel or food label is a great place to identify the amount of sugar and type of sweetener in a food or beverage.
- Nutritive and nonnutritive sweeteners will be listed in the ingredients list of the food label. Added sugar may appear in the ingredients list as sucrose, cane juice, or high-fructose corn syrup, or another common name listed in this publication.
- Ingredients are listed in descending order by weight—the closer they are to the beginning of the list, the more of that ingredient is in the food.
- Try to choose foods that do not have a sweetener listed in the first three ingredients.
- Choosing fewer processed foods will reduce added-sugar intake.
- Limit trips down the grocery aisles stocked with cookies, cakes, and easy-to-grab snack foods.
- Resist candies, snacks, and sugar-sweetened beverages in the checkout lanes.

Reducing the amount of added sugar we consume with foods and beverages is one way we can minimize our risk for some health conditions. Choosing whole grains, fruits, vegetables, lean protein, and dairy can support our health. With time, small choices to cut back on sugar in the diet will help us realize that our diets really are sweet enough without all that sugar.

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