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 one of the most popular food additives in the United States.

We know that the overindulgence of foods high in calories and low in nutrients can lead to chronic health problems. Even so, questions remain. How much sugar do I really need? What is the difference between sugars and artificial sweeteners? What part does sugar play in a healthy diet? Is life really sweet without all that sugar?

Forms of Sugar
Sugar is called a nutritive sweetener because it adds calories. A nutritive sweetener provides carbohydrates, but lacks other nutrients essential for growth, development, and health (Table 1). Nutritive sugars also add flavor and sweetness to our foods. Refined granulated sugar, also called “sucrose,” is made from sugar cane or sugar beets. Sucrose is made of two simple sugar molecules, glucose and fructose, linked together. Glucose and fructose can be used independently as ingredients, as well. We compare the sweetness of all other sweeteners to sugar.

Added sugars are sugars and syrups that are added to foods prepared at home or by food manufacturers during processing (Figure 1). Examples include fruit canned in heavy syrup, hot and cold sweetened cereals, sugar-sweetened beverages, jams and jellies, cookies, cakes, and sugar added into coffee and tea. This does not include naturally occurring sugars, such as those found in milk and fruits.

An alternative to nutritive sweeteners are zero- or low-calorie non-nutritive sweeteners (Table 2). As they can be 200 to 1,000 times sweeter than sugar, only very small amounts are needed to sweeten foods. They generally do not provide any calories or only very few calories as such small amounts are needed. These sugar substitutes may be naturally occurring or artificially made. They must pass approval of the Food and Drug Administration (FDA) before they can be marketed in the
United States. The following non-nutritive sweeteners have been approved by the FDA: ace-sulfame-potassium, aspartame, neotame, saccharin, sucralose, advantame, and sugar alcohols. Other high-intensity sweeteners such as stevia and monk fruit are derived from plants and are generally recognized as safe (GRAS status) by the FDA.

### Nutritional Value

We can measure energy in calories. One gram of carbohydrate contains four calories. The body prefers carbohydrates as a source of energy over other sources of energy.

**1 teaspoon of sugar = 4 grams of carbohydrate and 16 calories**

**3 teaspoons or 1 tablespoon = 12 grams and 48 calories**

It is important to remember that not all sweeteners are the same. A teaspoon of different sweeteners may contain different amounts of calories. For example, a teaspoon of table sugar has 16 calories, whereas a teaspoon of honey has 21 calories.

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 do we really need?**

Most Americans consume more added sugar than the recommended amount. The 2015-2020 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 22 teaspoons of added sugar per day. More than 40 percent of added sugar in the diet comes from beverages, with another 25 percent coming from desserts and sweets. Many of the foods high in added sugar have very little nutritional benefit. Unfortunately, the highest levels of added sugar intake are among children, youth, and young adults.

**The Role of Sugar in Health**

Research now tells us that a diet high in added sugar has negative effects on health. 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 contribute to weight gain and obesity, which is one of the largest risk factors for type 2 diabetes. It is important to monitor how much sugar and carbohydrates you consume if you have diabetes, because sugar and other sweeteners can raise blood sugar levels.

In addition, weight gain caused by an unhealthy diet can also result in other chronic conditions such as heart disease and kidney disease. Foods high in added sugar are linked with high blood triglyceride levels – another risk factor for heart disease. An effective way to manage high triglycerides is to reduce added sugar consumption. Managing weight through exercise and healthy food choices will also reduce your risk.

Consuming foods and beverages high in added and naturally occurring sugars may increase the risk of developing dental caries, also called cavities.

The American Diabetes Association and American Heart Association suggest that non-nutritive sweeteners could be a potentially useful option for reducing calorie and added sugar intake, helping individuals reach a healthy body weight, and improving blood sugar control.

**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 purchasing at your local food retailer or a restaurant.

**Reducing Added Sugar in the Diet**
- Choose whole, fresh fruit or fruits canned in their own juices or water in place of fruits canned in heavy syrup and fruit juice.
- Cut back on snack foods and desserts high in calories and added sugar.
- When you need a sweet treat, choose fruit (fresh, frozen, dried, or canned in 100% fruit juice).
- 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 sugars when dining out.

**Reducing Added Sugar when Cooking & Baking**
- Use a half-cup of sugar per cup of flour in cakes.
- Use 1 tablespoon of sugar per cup of flour in muffins and quick breads.
- Use 1 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 impression of sweetness.
- Replacing sugar with equal amounts of sucralose (Splenda™) works well for most baked products. Add a ½ teaspoon baking soda in addition to each cup of Splenda™ used. Baking time is usually shorter, product will have a smaller yield, and will have less browning.
- Aspartame (NutraSweet™), 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.
Recipe

Baked Apples and Pears with Almonds
Yield: 4 servings

Ingredients
- 4 small Granny Smith or Golden Delicious apples (can substitute any variety of apples or pears on sale)
- 2 Tbsp dried cranberries or raisins (no-sugar-added)
- ¼ cup unsalted, unoiled almonds
- ½ tsp cinnamon
- 2 tsp honey

Directions
Preheat oven to 400 degrees F. Wash apples. Cut ½ inch off the top of the apples, save the tops. Use a spoon or paring knife to core out the apples, leaving a bottom/base intact. Chop almonds. In a small bowl, combine almonds, cranberries, and cinnamon. Stir gently. Drizzle honey and stir until almonds and cranberries are coated. Spoon almond mixture into apples and replace tops. Fill a small baking dish with a ¼ inch of water, place apples in dish and cover loosely with tented foil. Bake 30 minutes. Remove foil and bake an addition 15 minutes until apples are tender and lightly golden.

Nutritional Analysis
153 calories; 4.5 g fat; 0.5 g saturated fat; 2 mg sodium; 29 g carbohydrate; 5 g fiber; 21 g sugar; 2 g protein

Source: American Heart Association http://www.heart.org/

Reducing Added Sugar when Food Shopping
- Knowing how to read the Nutrition Facts Panel or food label is a great place to start when the goal is to reduce added sugars.
- The grams and percent daily value of “added sugars” will be required on the label starting 2020. Some food manufacturers have already begun listing added sugars on the food label.
- Learn common names for sweeteners that can be found on the ingredients list. 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 and calorie 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.

Americans are consuming too much added sugars through foods and beverages that may lead to weight gain, type 2 diabetes, and heart disease. Choosing healthier foods with less added sugar will reduce the number of calories consumed. Also, being physically active is a great way to manage the number of calories you are taking in and using as energy. Adults should aim for 150 minutes per week of physical activity and children should aim for 60 min per day. 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.
References


