

Sweet Taste — Without the Calories

Cutting back on calories or carbohydrates (carbs), but like foods and beverages that taste sweet? Try low-calorie sweeteners!

Commonly referred to by the color of their packaging — “pink,” “blue,” “green” or “yellow.” Low-calorie sweeteners are also known as sugar substitutes, sugar replacements, no-calorie sweeteners, or non-nutritive sweeteners. When used in place of sugar, low-calorie sweeteners decrease the total number of carbs and calories found in foods and beverages, which may help with weight management and blood glucose control.

Low-calorie sweeteners can decrease your calorie and carbohydrate intake in several ways:

- Replacing sugary beverages made with fruit-flavored powder mixes containing a low-calorie sweetener like sucralose will typically provide less than five calories per eight-ounce serving.
- Having soft drinks made with aspartame, another low-calorie sweetener, will only cost you one calorie or less per 12-ounce serving.
- Adding a packet of sugar substitute to your coffee or tea does not add any calories or raise your blood glucose levels, like regular sweeteners can.
- Drinking a 12-ounce diet soda can save about 140 calories and 39 grams of carbohydrate over a regular soda, which may contain ten teaspoons of sugar or more.

Some low-calorie sweeteners contain bulking agents such as fiber, which contribute carbohydrates and a small amount of calories. In addition, sugar/non-nutritive sweetener blends contain

Do not use low-calorie sweeteners or sugar-free foods to treat low blood glucose levels (hypoglycemia).

carbohydrates and calories and should be included as part of your overall carb budget. Be sure to read the Nutrition Facts Panel for a product's nutrition and ingredient information!

Types of Low-calorie Sweeteners

Low-calorie sweeteners may be found on restaurant tabletops and grocery store shelves, as well as in foods and beverages. Other products — such as vitamins, medications, sugar-free cough drops, toothpaste and mouthwash — may contain these types of sweeteners, as well. The following eight low-calorie sweeteners are either approved by the U.S. Food and Drug Administration (FDA) or have been placed on the Generally Recognized As Safe (GRAS) list. Each has been found through numerous scientific studies to be safe for consumption. Because they provide more than 100 times the sweetening power of sugar, only a very small amount is needed.

1. Acesulfame-potassium

Other names: Ace-K

- Acesulfame-potassium is generally blended with other low-calorie sweeteners.

2. Advantame

- Made from aspartame and vanillin
- Heat stable
- Advantame is a source of phenylalanine

- Advantame is much sweeter than aspartame so only a small amount is needed. For this reason, foods containing advantame do not bear a PKU information statement.

3. Aspartame

Packet color: Blue

- More than 200 studies support aspartame's safety.
- Aspartame is a source of phenylalanine — an ingredient that people with the rare condition phenylketonuria (PKU) should avoid.
- Products that contain aspartame must feature a warning label to alert those with PKU.



4. Luo Han Guo fruit extracts

Siraitia grosvenorii Swingle fruit extract (SGFE) is also known as monk fruit

- 100-250 times sweeter than sugar
- Plant is native to Southern China

5. Neotame

- Neotame provides 7,000-8,000 the sweetening power of sugar.
- While it contains phenylalanine, the small amount of neotame needed result in the levels of phenylalanine being clinically insignificant. Therefore, products sweetened with neotame are not required to carry a warning label for people with PKU.

6. Saccharin

Packet color: Pink

Also available in liquid form

- Saccharin has been used in foods and beverages for over 100 years.
- Studies in laboratory rats conducted in the 1970s that linked saccharin to bladder cancer were dismissed by FDA when researchers found that the studies were not relevant to humans.

7. Steviol Glycosides

Other names: Stevioside, Rebaudioside A, B, C, D, F, Dulcoside A, Rubusoside, and Steviolbioside

Packet color: Green

Also available in liquid form, granulated, and baking blends

- Unlike stevia leaf extract, which is highly purified, the stevia plant, stevia leaf powder, and crude stevia extract are not allowed as food ingredients in the U.S., but may be sold as dietary supplements.
- The stevia rebaudiana (Bertoni) plant is native to South America.

8. Sucralose

Packet color: Yellow

Also available in liquid, dissolvable tablets, granulated and baking blends.

- 600 times sweeter than sugar
- Heat stable
- More than 20 years of research and over 110 scientific studies support sucralose's safety.

What does "sugar-free" mean?"

If a food or beverage is labeled "sugar-free," it means that white sugar, brown sugar or any other sugar-based sweetener such as honey, agave, high-fructose corn syrup or dextrose has not been added to the product. However, the words "sugar-free" on the front of the package do not mean the food is carb or calorie-free. In addition, a "sugar-free" product, according to FDA, can contain up to 0.5 grams of sugars.

It is important to read the Nutrition Facts Panel to understand how much of a sugar-free food or drink can be included in your meal plan. For example, diet soft drinks are calorie-free and are, therefore, carb-free and may be used as an unlimited or "free" food. However, sugar-free cookies are not a "free" food. They will add calories (and carbs) and must be worked into your meal plan and carb budget.

Polyols (or sugar alcohols) are another low-calorie option. Examples of polyols include erythritol, polyglycitol, isomalt, lactitol, maltitol, mannitol, sorbitol and xylitol. Polyols are found in some sugar-free foods, including sugar-free chewing gum. Polyols are not completely absorbed by the body. Unlike other forms of carbohydrates that provide four calories per gram, most polyols contain carbohydrates and about 2 calories per gram and need to be counted as part of your meal plan. The exception is erythritol, which provides zero calories and does not need to be counted as a carbohydrate as part of your meal plan. *Note: For some individuals, sugar alcohols, especially in large amounts, may cause bloating, gas or diarrhea.*

Are low-calorie sweeteners safe?

The FDA has found low-calorie sweeteners to be safe. For each non-nutritive sweetener permitted for use in foods and beverages, the FDA has established an acceptable daily intake, or ADI. The ADI represents the amount of a food ingredient (in this case, low-calorie sweetener) that can be safely used on a daily basis over a lifetime without risk. Studies show that the use of low-calorie sweeteners does not approach the ADI amount.

Through its Evidence Analysis Library, the Academy of Nutrition and Dietetics suggests long-term studies on the safety and efficacy of low-calorie sweeteners continue, to help ensure the ongoing safety of low-calorie sweeteners in our food supply.¹

While including low-calorie sweeteners as part of your eating plan may help reduce carbs and calories, the choice is yours. If you have questions on the use of low-calorie sweeteners, seek help from a registered dietitian nutritionist and/or certified diabetes educator.

Where can I learn more about low-calorie sweeteners?

Visit the Academy of Nutrition and Dietetics (www.eatright.org), the International Food Information Council Foundation (www.foodinsight.org), and the American Diabetes Association (www.diabetes.org) websites for more information.

1. Academy of Nutrition and Dietetics: Position Statement on the Use of Nutritive and Nonnutritive Sweeteners, *Journal of the Academy of Nutrition and Dietetics*, May 2012; 112; 739-758.