Overview of Sweeteners

Sugar, in all its various forms, is one of the most widely consumed foods in the world. In the context of functional nutrition, "sugar" is an umbrella term that is used to describe four main types of sweeteners: sucrose, caloric sweeteners, artificial sweeteners, and sugar alcohols.

Table sugar (sucrose)	Common table sugar, or sucrose, is granulated sugar refined from beets or sugar cane. It is often used in traditional baking recipes and added to hot beverages. It is high in calories and devoid of vitamins and minerals.
Caloric Sweeteners	Any sweetener that has calories, including natural sweeteners. This includes sucrose, as well as agave, brown rice syrup, coconut sugar, crystalline fructose, dextrose, fruit juice concentrates, glucose syrup, high-fructose corn syrup (HFCS), honey, maple sugar, maltodextrin, maple syrup, molasses, trehalose, and others. Most of these are found in processed foods.
Artificial Sweeteners	Any sweetener that is not found in nature, contains few or no calories, and is used in place of sugar or caloric sweeteners. This includes acesulfame K, aspartame, neotame, saccharin, stevia, sucralose, and all brand-name sweeteners that contain these (e.g., NutraSweet, Splenda, Sweet N'Low, etc.). These are often used in processed foods marketed as diet-friendly or "sugar-free".
Sugar alcohols	Sweeteners that have fewer calories than caloric sweeteners, and aren't as sweet as sugar. They can be manufactured or derived from some fruits and vegetables. They are often added to baked goods, fruit spreads, and other processed foods, as well as chewing gum, mouthwash, and toothpaste. Examples are erythritol, isomalt, lactitol, maltitol, mannitol, sorbitol, and xylitol. These should be avoided if you are suffering from bacterial or yeast overgrowth.

Added Sugars on Food Labels

Many food labels in the U.S. don't currently list added sugars in the Nutrition Facts section. However, the U.S. Food and Drug Administration revised its rules for food labeling in 2016. One of these new rules states that the total amount (in grams) of added sugar must be disclosed on in the Nutrition Facts section of all labels. Food manufacturers have until July 2018 to comply with the new rules, so you might see both old and new labels when shopping for processed or packaged foods.

If you are looking at an older food label, it can be difficult to determine which sugars or sweeteners are naturally-occurring, and which are added to the food during the manufacturing process. An easy way to determine the added sugar content of a food is to see how many different sweeteners are listed in the ingredient list. If a food contains several different types of sweeteners, it's safe to assume that some of those have been added. If a food contains processed sweeteners like maltodextrin or any kind of syrup, this is also an indication that some of the sugar in the food is not naturally-occurring.

According to the American Heart Association, the maximum amount of added sugars adults should consume in a day is

- 9 teaspoons for men (equal to 37.5 grams, or 150 calories per day)
- 6 teaspoons for women (equal to 25 grams, or 100 calories per day)

To put those amounts in perspective, one 12-ounce can of regular soda contains 140 calories from added sugar.
See the chart on the next page for other examples of foods and their sugar content.

The Relationship between Fiber and Sugar

The fiber content of food helps determine how your body is impacted by both naturally occurring and added sweeteners. When eating naturally sweet or sweetened foods with little or no fiber, the sugar hits the blood stream all at once, causing a spike in blood sugar levels. This temporary energy boost, or "sugar rush" is quickly followed by a crash, which results in low energy. Fiber helps slow the body's absorption of sugar and helps to keep blood sugar balanced. This helps keep energy levels more even throughout the day.

Some foods with naturally occurring sugars lack fiber, but this doesn't necessarily mean they should be avoided. An example is milk, which contains no fiber but is a good source of many vitamins and minerals for those who can tolerate it. When consuming nutrient-dense foods or beverages that lack fiber, it's important to pair them with fiber-rich foods to help slow the absorption of natural sugars into the bloodstream.

Sugar Content of Popular Foods

Food/Drink	Total Sugars	Added Sugars	Natural Sugars	Fiber	Vitamins & Minerals
Apple (medium)	19 g	0 g	19 g	4 g	Vitamin A, Vitamin C, Vitamin K, Calcium, Folate, Magnesium, Phosphorus, Potassium
Banana (medium)	14 g	0 g	14 g	3 g	Vitamin A, Vitamin C, Calcium, Folate, Potassium
Cheerios (1 cup)	1 g	1 g	0 g	3 g	Folic Acid, Iron, Thiamin, Zinc
Orange juice (16 ounces)	48 g	0 g	48 g	0 g	Vitamin A, Vitamin C, Potassium
Plain yogurt, whole milk (8 ounces)	11 g	0 g	11 g	0 g	Vitamin A, Calcium, Magnesium, Phosphorus, Potassium
Strawberry yogurt, low-fat (8 ounces)	39 g	29 g	10 g	0 g	Vitamin A, Calcium, Sodium
Whole milk, organic (16 ounces)	32 g	0 g	32 g	0 g	Vitamin A, Vitamin D, Calcium, Folate, Magnesium, Phosphorus, Potassium, Sodium, Omega-3s
Whole wheat bread (two slices)	4 g	4 g	0 g	2 g	Folate, Vitamin K

References

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- Nestle M. *What to Eat*. New York: North Point Press; 2006.
- Pollan M, Kalman M. *Food Rules: an Eater's Manual*. New York: Penguin Press; 2011.