Total Carbohydrate

What It Is

Carbohydrate is found primarily in plant foods; the exception is dairy products, which contain milk sugar (lactose). There are several types of carbohydrate:

- **Sugars** are the smallest type of carbohydrate and include single sugars and those with two sugar molecules joined together.
- **Sugar alcohols** are carbohydrates that chemically have characteristics of both sugars and alcohols.
- **Starches** are made up of many of glucose molecules linked together into long chains.
- **Dietary fiber** is made up of many sugar molecules linked together. But unlike starches, fiber is bound together in such a way that it cannot be readily digested. There are two types of dietary fiber: soluble and insoluble.

Where It Is Found

- **Sugars** are found naturally in foods such as dairy products, fruits, and vegetables. Sugars are also added to foods and beverages for taste, texture and preservation, and are often found in foods such as grain-based and dairy desserts, sugar-sweetened beverages, and sweets.
- **Sugar alcohols** are found naturally in small amounts in a variety of fruits and vegetables. Sugar alcohols are also commercially produced from sugars and starch and added as reduced-calorie sweeteners to foods, such as chewing gum, frostings, grain-based and dairy desserts, and sweets.
- **Starches** are found naturally in beans and peas (such as garbanzo beans, kidney beans, lentils, and split peas), grains (such as barley, brown rice, corn, oats, and wheat), and vegetables (such as carrots and potatoes). Starches can also be added to foods during processing or preparation to thicken or stabilize them.
- **Dietary fiber** is found in beans and peas, fruits, nuts and seeds, vegetables, and whole grain foods (such as brown rice and whole grain breads, cereals, pasta).

What It Does

- **Sugars and starches** are the body’s main sources of calories. Your body breaks down these carbohydrates into glucose. Glucose in the blood (often referred to as “blood sugar”) is the primary energy source for the body. Sugars are also used to sweeten, preserve, and improve the functional attributes of food.
- **Sugar alcohols** provide a sweet taste with fewer calories per gram than table sugar (sucrose), and are commonly used in place of sugar in food. Sugar alcohols also have other functions in food, including producing a “cooling” sensation in the mouth, adding bulk and texture to food, and helping to retain moisture and prevent browning.
- **Dietary fiber** promotes intestinal regularity and helps prevents constipation. Fiber also makes you feel full, slows digestion and the rate at which carbohydrates and other nutrients are absorbed into the bloodstream, and can interfere with the absorption of dietary fat and cholesterol.

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Carbohydrate is one of three macronutrients in food that provide calories, or “energy,” for the body. Each gram of carbohydrate provides 4 calories.
• Most Americans exceed the recommended limits for added sugars and do not get the recommended amounts of dietary fiber in the diet.
• Diets lower in added sugars and higher in dietary fiber and nutrient-dense foods and beverages can reduce the risk of cardiovascular disease.
• The Dietary Guidelines for Americans recommends consuming less than 10% of calories per day from added sugars and at least half of total grains as whole grains, and limiting the intake of refined grains and products made with refined grains.

*Nutrient-Dense: Defined
Nutrient-dense foods and beverages contain vitamins, minerals, dietary fiber, and other beneficial substances that may have positive health effects. They are also naturally lean or low in saturated fat and have little or no added saturated fat, sugars, refined starches, and sodium. Examples of nutrient-dense foods are: beans and peas, eggs, fat-free (skim) and low-fat (1%) dairy products, fruits, lean meats and poultry, seafood, unsalted nuts and seeds, vegetables, and whole grains.

Action Steps

For Monitoring Total Carbohydrate in Your Diet

Use the Nutrition Facts Label as your tool for monitoring consumption of total carbohydrate. The Nutrition Facts Label on food and beverage packages shows the amount in grams (g) of total carbohydrate and the Percent Daily Value (%DV) of total carbohydrate in one serving of the food.

The Nutrition Facts Label also lists the types of carbohydrate that make up the total carbohydrate in a product. This includes the amount in grams (g) per serving of dietary fiber and sugars and the %DV of dietary fiber. Food manufacturers may also voluntarily list the amount in grams (g) per serving of soluble and/or insoluble fiber, sugar alcohols, and “other carbohydrate.” “Other carbohydrate” generally reflects the amount of starch in a product and is defined as the difference between total carbohydrate and the sum of dietary fiber, sugars, and sugar alcohols.

The Daily Value for total carbohydrate is 300 g per day. This is based on a 2,000 calorie diet — your Daily Value may be higher or lower depending on your calorie needs.

- When comparing foods, look at the %DV of total carbohydrate. The goal is to get 100% of the Daily Value for total carbohydrate on most days. And remember:
  - 5% DV or less of total carbohydrate per serving is low
  - 20% DV or more of total carbohydrate per serving is high
- Focus on eating nutrient-dense foods that contain dietary fiber combined with other beneficial nutrients and naturally occurring sugars.
- Switch from refined to whole grain versions of commonly consumed foods (such as breads, cereals, pasta, and rice), and try to make them at least half of your daily grain choices. Try options that don’t include added saturated fats, sugars, or sodium, such as bread instead of croissants, English muffins instead of biscuits, and plain popcorn instead of buttered.
- Choose fruit (fresh, frozen, dried, or canned in 100% natural juice) as snacks, salads, or desserts.
- Keep raw, cut-up vegetables handy for quick snacks – choose colorful dark green, orange, and red vegetables, such as broccoli florets, carrots, and red peppers.
- Whenever possible, choose water, fat-free (skim) or low-fat (1%) milk, 100% fruit or vegetable juice, or unsweetened tea or coffee instead of sugar-sweetened beverages (such as energy drinks, flavored waters, fruit drinks, soft drinks, and sports drinks).
- Add beans and peas or unsalted nuts and seeds to your daily meals. These are also great sources of dietary fiber and protein.
- Limit snacks and sweets (such as cakes, candies, cookies, ice cream, pastries, and puddings).
- Consume smaller portions of foods and beverages that are higher in sugars or consume them less often.