

Carbohydrate Facts

What are Carbohydrates?

Carbohydrates are the major energy source for the body. Carbohydrates provide energy for normal body functions (such as heartbeat, breathing, digestion, and brain activity) and for exercise (like biking, walking, running). Carbohydrates provide 4 calories per gram. A supply of carbohydrates is necessary to maintain health and a must if your goal is to reduce your body fat and enhance your fitness level. There are two major groups of carbohydrates; complex carbohydrates and simple carbohydrates.



Complex



Simple

What are Complex Carbohydrates?

Complex carbohydrates are chains of three or more sugar molecules linked together. Long chains of sugar molecules are called starches. Branched complex carbohydrates are called cellulose. Starches are fairly easy to digest. However, your body doesn't digest cellulose, which is an important component of dietary fiber. Complex carbohydrates are found in fruits, vegetables, nuts, seeds and grains.

Some examples of foods high in **starchy complex carbohydrates** include:

- cereal
- pasta
- potatoes
- dry beans
- carrots
- corn
- bread

Green vegetables like green beans, broccoli, and spinach contain less starch and more fiber. All grains include starchy carbohydrates. However, whole grains, such as whole wheat pasta, are better for you because they also have more **dietary fiber**.

Dietary fiber is only found in plants. We eat plants but we cannot digest the fiber. There are two types of dietary fiber: insoluble fiber and soluble fiber.

- **Insoluble fiber** is the type of fiber found in high fiber foods like whole grains, nuts, wheat bran and vegetables. Insoluble fiber does not dissolve in water so it helps to move material through the colon faster. This can be very helpful to people who suffer from constipation or irregularity. Diets high in insoluble fiber also decrease the risk of diabetes.

- **Soluble fiber** is also found in many high fiber foods like oats, citrus fruits, apples, barley, flax seeds and beans. Soluble fiber absorbs water and helps to soften the stools. A diet high in soluble fiber has been shown to reduce cholesterol.

What are Simple Carbohydrates?

Simple carbohydrates are made up of one or two sugar molecules linked together. These carbohydrates are broken down and digested very quickly. Most simple carbohydrates contain very few important vitamins and minerals. Simple carbohydrate foods include table sugar, honey, molasses, maple syrup, brown sugar, and candy.

Fruit juice, fruits and milk are also foods that contain simple carbohydrates. However, they also contain some complex carbohydrates, such as dietary fiber, as well as, some important vitamins and minerals.

There are many simple sugars added to foods and beverages. Although they may enhance the taste and/or texture they also add extra unwanted calories. The following table is a list of “added sugars”.

Brown Sugar	Invert Sugar
Corn Sweetener	Lactose
Corn Syrup	Maltose
Dextrose	Malt Syrup
Fructose	Molasses
Fruit Juice Concentrates	Raw Sugar
Glucose	Sucrose
High-Fructose Corn Syrup	Sugar
Honey	Syrup

What to Know About Sugar Substitutes

Sugar substitutes are natural or chemical compounds that provide the sweetness of sugar without as many (or no) calories. Sugar substitutes are much sweeter than sugar and it takes less amounts to create the same sweetness. The following are sugar substitutes approved for use in foods and beverages:

- Splenda (sucralose)
- Saccharin (Sweet N' Low)
- Aspartame (Equal)
- Stevia
- Truvia

Sugar alcohols are also sugar substitutes, and they usually end with the letters “-ol.” They occur naturally in a wide variety of fruits and vegetables, but are also produced commercially from other forms of carbohydrates. They are not completely absorbed or metabolized by the body, therefore contribute fewer (or no) calories. Because of the incomplete metabolism, there are possible side effects from the use of sugar alcohols. Such side effects include abdominal cramping or bloating, gas, and diarrhea. Here are some common sugar alcohols:

- Sorbitol
- Lactitol
- Isomalt
- Malitol
- Mannitol
- Xylitol

Carbohydrates: Key Recommendations Track Your Carbohydrates Closely!

Your dietitian will give you a carbohydrate goal to stay under each day

- 40% of your daily calories should come from complex carbohydrates
- Choose fiber rich fruits, vegetables, and whole grains
- Consume 25-38 grams of fiber each day
- Choose and prepare foods and beverages with little or no added sugars
- Choose whole fruit (fresh, frozen, canned) rather than juice
- Choose vibrantly-colored vegetables and potatoes
- Use sugar substitutes sensibly

Since not all your carbohydrates get absorbed, you should mainly be concerned about your net carbohydrate intake and this is what you should track. To calculate net carbs use the following formula (each item should be in grams):

$$\text{Total Carbs} - \text{Fiber} - \text{Sugar Alcohols} = \text{Net Carbs}$$

Your Goals:

1. _____

2. _____

3. _____

4. _____

5. _____