



## Carbohydrates: How carbs fit into a healthy diet

Carbohydrates aren't bad, but some may be healthier than others. See why carbs are important for your health and which ones to choose.

By Mayo Clinic Staff

Carbohydrates often get a bad rap, especially when it comes to weight gain. But carbohydrates aren't all bad. Because of their numerous health benefits, carbohydrates have a rightful place in your diet. In fact, your body needs carbohydrates to function well. But some carbohydrates may be better for you than are others. Understand more about carbohydrates and how to choose healthy carbohydrates.

### Understanding carbohydrates

Carbohydrates are a type of macronutrient found in many foods and beverages. Most carbohydrates are naturally occurring in plant-based foods, such as grains. Food manufacturers also add carbohydrates to processed foods in the form of starch or added sugar. Common sources of naturally occurring carbohydrates include:

- Fruits
- Vegetables
- Milk
- Nuts
- Grains
- Seeds
- Legumes

### Types of carbohydrates

There are three main types of carbohydrates:

- **Sugar.** Sugar is the **simplest form of carbohydrates**. Sugar occurs naturally in some foods, including fruits, vegetables, milk and milk products. Sugars include fruit sugar (fructose), table sugar (sucrose) and milk sugar (lactose).
- **Starch.** Starch is a **complex carbohydrate**, meaning it is made of many sugar units bonded together. Starch occurs naturally in vegetables, grains, and cooked dry beans and peas.
- **Fiber.** Fiber also is a **complex carbohydrate**. Fiber occurs naturally in fruits, vegetables, whole grains, and cooked dry beans and peas.

### More carbohydrate terms: Net carbs and glycemic index

Terms such as "low carb" or "net carbs" often appear on product labels, but the Food and Drug Administration doesn't regulate these terms, so there's no standard meaning. Typically net carbs is used to mean the

amount of carbohydrates in a product excluding fiber or excluding both fiber and sugar alcohols.

You probably have also heard talk about the glycemic index. The glycemic index classifies carbohydrate-containing foods according to their potential to raise your blood sugar level.

Weight-loss diets based on the glycemic index typically recommend limiting foods that are higher on the glycemic index. Foods with a relatively high glycemic index ranking include potatoes and corn, and less healthy options such as snack foods and desserts that contain refined flours. Many healthy foods, such as whole grains, legumes, vegetables, fruits and low-fat dairy products, are naturally lower on the glycemic index.

### How many carbohydrates do you need?

The Dietary Guidelines for Americans recommends that carbohydrates make up 45 to 65 percent of your total daily calories. So, if you get 2,000 calories a day, between 900 and 1,300 calories should be from carbohydrates. That translates to between 225 and 325 grams of carbohydrates a day.

You can find the carbohydrate content of packaged foods on the Nutrition Facts label. The Nutrition Facts label shows total carbohydrates, which includes starches, fiber, sugar alcohols, and naturally occurring and added sugars. It may also list total fiber, soluble fiber and sugar separately. You may also be able to find nutrient calculators online or find information on a manufacturer's website.

### Carbohydrates and your health

Despite their bad rap, carbohydrates are vital to your health for a number of reasons.

### Providing energy

Your body uses carbohydrates as its main fuel source. Sugars and starches are broken down into simple sugars during digestion. They're then absorbed into your bloodstream, where they're known as blood sugar (blood glucose). From there, the glucose enters your body's cells with the help of insulin. Glucose is used by your body for energy, fueling all of your activities, whether it's going for a jog or simply breathing. Extra glucose is stored in your liver, muscles and other cells for later use or is converted to fat.

## Protecting against disease

Some evidence suggests that whole grains and dietary fiber from whole foods help reduce your risk of cardiovascular diseases. Fiber may also protect against obesity and type 2 diabetes. Fiber is also essential for optimal digestive health.

## Controlling weight

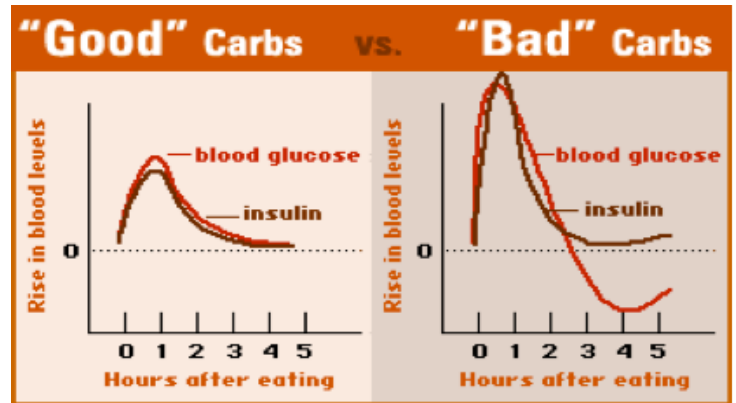
Evidence shows that eating plenty of fruits, vegetables and whole grains can help you control your weight. Their bulk and fiber content aids weight control by helping you feel full on fewer calories. Contrary to what low-carb diets claim, very few studies show that a diet rich in healthy carbohydrates leads to weight gain or obesity.

## Choosing carbohydrates wisely

Carbohydrates are an essential part of a healthy diet, and they also provide many important nutrients. Still, not all carbs are created equal. Here's how to make healthy carbohydrates work in a balanced diet:

- **Emphasize fiber-rich fruits and vegetables.** Aim for whole fresh, frozen and canned fruits and vegetables without added sugar. They're better options than are fruit juices and dried fruits, which are concentrated sources of natural sugar and therefore have more calories. Also, whole fruits and vegetables add fiber, water and bulk, which help you feel fuller on fewer calories.
- **Choose whole grains.** Whole grains are better sources of fiber and other important nutrients, such as selenium, potassium and magnesium, than are refined grains. Refined grains go through a process that strips out parts of the grain — along with some of the nutrients and fiber.
- **Stick to low-fat dairy products.** Milk, cheese, yogurt and other dairy products are good sources of calcium and protein, plus many other vitamins and minerals. Choose the low-fat versions, though, to help limit calories and saturated fat. And beware of dairy products that have added sugar.
- **Eat more beans and legumes.** Legumes, which include beans, peas and lentils, are among the most versatile and nutritious foods available. Legumes are typically low in fat; contain no cholesterol; and are high in folate, potassium, iron and magnesium. They also have beneficial fats and soluble and insoluble fiber. Because they're a good source of protein, legumes can be a healthy substitute for meat, which has more saturated fat and cholesterol.
- **Limit added sugars.** Added sugar probably isn't harmful in small amounts. But there's no health advantage to consuming any amount of added sugar. In fact, too much added sugar, and in some cases naturally occurring sugar, can lead to such health problems as tooth decay, poor nutrition and weight gain.

So choose your carbohydrates wisely. Limit foods with added sugars and refined grains, such as sugary drinks, desserts and candy, which are packed with calories but low in nutrition. Instead, go for fruits, vegetables and whole grains.



**GOOD CARBS vs. BAD CARBS**

**WHY CARBOHYDRATES MATTER TO YOU**

Over the last 10 years, opinions have ranged wildly on carbohydrates. Some diets promote carbs as healthy, while others shun them. So are carbohydrates good or bad? The short answer is: they're both.

**CARBS ARE EVERYWHERE!**

Carbohydrates are not just bread, rice or pasta — all of the following foods are examples of carbohydrates:

- Breads & Cereals
- Rice & Pastas
- Nuts & Seeds
- Vegetables & Fruits
- Milk & Dairy
- Juice & Soda
- Candy & Desserts

**COMPLEX CARBS = GOOD**

Good carbs are also referred to as complex carbohydrates. Their chemical structure and fibers require our bodies to work harder to digest, and energy is released over a longer time.

For the most part, good carbs are in their 'natural' state — or very close to it (including whole-grain breads, cereals and pastas).

- Whole Grain Breads
- Bran Cereals
- Green Vegetables
- Fresh Fruits

**WHY ARE THEY GOOD?**

- HIGH IN FIBER & NUTRIENTS
- LOW GLYCEMIC INDEX (SEE BELOW)
- HELP YOU FEEL FULL WITH FEWER CALORIES
- NATURALLY STIMULATES METABOLISM

**SIMPLE CARBS = BAD**

Simple carbohydrates are smaller molecules of sugar that are digested quickly into our body. The energy is stored as glycogen in our cells, and if not used immediately gets converted to fat.

Bad carbs are generally 'processed' carb foods that have been stripped of their natural nutrients and fiber to make them more 'consumer friendly.'

- Candy & Desserts
- Sugared Cereals
- Sodas & Sugary Drinks
- Refined Breads

**WHY ARE THEY BAD?**

- LOW IN FIBER & NUTRIENTS
- HIGH GLYCEMIC INDEX (SEE BELOW)
- EMPTY CALORIES CONVERTED TO FAT
- HIGH BLOOD GLUCOSE LEVELS = FEEL TIRED



## Nutrition and Healthy Eating

### Dietary fats: Know which types to choose

**When choosing fats, pick unsaturated fat over saturated or trans fat. Here's how to know the difference.**

By Mayo Clinic Staff

Most foods contain several different kinds of fat, and some are better for your health than others. You don't need to completely eliminate all fat from your diet. In fact, some fats actually help promote good health. But it's wise to choose the healthier types of dietary fat and then enjoy them — in moderation.

#### The facts about fat

There are numerous types of fat. Your body makes its own fat from taking in excess calories. Some fats are found in foods from plants and animals and are known as dietary fat. Dietary fat is a macronutrient, along with protein and carbohydrates, that provide energy for your body. Fat is essential to your health because it supports a number of your body's functions. Some vitamins, for instance, must have fat to dissolve and nourish your body.

But there is a dark side to fat. Fat is high in calories and small amounts can add up quickly. If you eat more calories than you need, you will gain weight. Excess weight is linked to poor health.

The concern with some types of dietary fat (and their cousin cholesterol) is that they are thought to play a role in cardiovascular disease and type 2 diabetes. Dietary fat also may have a role in other diseases, including obesity and cancer.

Research about the possible harms and benefits of dietary fat is always evolving. And a growing body of research suggests that when it comes to dietary fat, you should focus on eating healthy fats and avoiding unhealthy fats. Simply stated, fat is made up of varying amounts of fatty acids. It's the type and amount of fatty acid found in food that determines the effect of the fat on your health.

#### Harmful dietary fat

There are two main types of potentially harmful dietary fat — fat that is mostly saturated and fat that contains trans fat:

- **Saturated fat.** This is a type of fat that comes mainly from animal sources of food, such as red meat, poultry and full-fat dairy products. Saturated fat raises total blood cholesterol levels and low-density lipoprotein (LDL) cholesterol levels, which can increase your risk of cardiovascular disease. Saturated fat may also increase your risk of type 2 diabetes.
- **Trans fat.** This is a type of fat that occurs naturally in some foods in small amounts. But most trans fats are made from oils through a food processing method called partial hydrogenation. By partially

hydrogenating oils, they become easier to cook with and less likely to spoil than do naturally occurring oils. Research studies show that these partially hydrogenated trans fats can increase unhealthy LDL cholesterol and lower healthy high-density lipoprotein (HDL) cholesterol. This can increase your risk of cardiovascular disease.

Most fats that have a high percentage of saturated fat or that contain trans fat are solid at room temperature. Because of this, they're typically referred to as solid fats. They include beef fat, pork fat, butter, shortening and stick margarine.

#### Healthier dietary fat

The types of potentially helpful dietary fat are mostly unsaturated:

- **Monounsaturated fat.** This is a type of fat found in a variety of foods and oils. Studies show that eating foods rich in monounsaturated fats (MUFAs) improves blood cholesterol levels, which can decrease your risk of heart disease. Research also shows that MUFAs may benefit insulin levels and blood sugar control, which can be especially helpful if you have type 2 diabetes.
- **Polyunsaturated fat.** This is a type of fat found mostly in plant-based foods and oils. Evidence shows that eating foods rich in polyunsaturated fats (PUFAs) improves blood cholesterol levels, which can decrease your risk of heart disease. PUFAs may also help decrease the risk of type 2 diabetes.
- **Omega-3 fatty acids.** One type of polyunsaturated fat is made up of mainly omega-3 fatty acids and may be especially beneficial to your heart. Omega-3, found in some types of fatty fish, appears to decrease the risk of coronary artery disease. It may also protect against irregular heartbeats and help lower blood pressure levels. There are plant sources of omega-3 fatty acids. However, the body doesn't convert it and use it as well as omega-3 from fish.

Foods made up mostly of monounsaturated and polyunsaturated fats are liquid at room temperature, such as olive oil, safflower oil, peanut oil and corn oil. Fish high in omega-3 fatty acids include salmon, tuna, trout, mackerel, sardines and herring. Plant sources of omega-3 fatty acids include flaxseed (ground), oils (canola, flaxseed, soybean), and nuts and other seeds (walnuts, butternuts and sunflower).

#### A word about cholesterol

Cholesterol isn't a fat. Rather, it's a waxy, fat-like substance. Your body manufactures some cholesterol. Your body also absorbs some dietary cholesterol — cholesterol that's found in foods of animal origins, such as meat and eggs. Cholesterol is vital because, among other important functions, it helps build your body's cells and produces certain hormones. But your body makes enough cholesterol to meet its needs — you don't need any dietary cholesterol.



Excessive cholesterol in your diet can increase your unhealthy LDL cholesterol level, although not as much as saturated fat does. This can increase your risk of heart disease and stroke. Most foods that contain saturated fat also contain cholesterol. So cutting back on these foods will help decrease both saturated fat and cholesterol. The exception to this is tropical oils, which are high in saturated fat but contain no cholesterol.

**Recommendations for fat intake**

Because some dietary fats are potentially helpful and others potentially harmful to your health, it pays to know which ones you're eating and whether you're meeting national recommendations. The Dietary Guidelines for Americans offer recommendations about dietary fat intake.

Here's a look at the recommendations and common sources of each type of dietary fat. Be aware that many foods contain different kinds of fat and varying levels of each type. For example, butter contains unsaturated fats, but a large percentage of the total fat is saturated fat. And canola oil has a high percentage of monounsaturated fat but also contains smaller amounts of polyunsaturated and saturated fat.

Fat	Recommendation
Total Fat	This includes all types of dietary fat. Limit total fat intake to 20 to 35 percent of your daily calories. Based on a 2,000-calorie-a-day diet, this amounts to about 44 to 78 grams of total fat a day.
Unsaturated Fats	Monounsaturated, Polyunsaturated or Omega 3 Fatty Acids:  While no specific amount is recommended, the guidelines recommend eating foods rich in this healthy fat while staying within your total fat allowance.
Saturated Fats	Limit saturated fat to no more than 10 percent of your total calories. Limit to 7 percent to further reduce your risk of heart disease. Based on a 2,000-calorie-a-day diet, a 10 percent limit amounts to about 22 grams of saturated fat a day, while 7 percent is about 15 grams. Saturated fat intake counts toward your total daily allowance of fat.
Trans Fats	No specific amount is recommended, but the guidelines say the lower the better. Avoid trans fat by looking at food labels and by checking for the term "partially hydrogenated."
Cholesterol	Less than 300 milligrams a day. Less than 200 milligrams a day if you're at high risk of cardiovascular disease.

DIETARY GUIDELINES FOR AMERICANS, 2010

Need help calculating what your daily fat intake should be in grams? Multiply your daily total calorie intake

by the recommended percentage of fat intake. Divide that total by 9, which is the number of calories in a gram of fat. For example, here's how a 7 percent saturated fat limit looks if you eat 2,000 calories a day. Multiply 2,000 by 0.07 to get 140 calories. Divide 140 by 9 to get about 15 grams of saturated fat.

**What about very low-fat diets?**

If watching fat content is a good strategy, is it even better to try to eliminate all fat from your diet? No. First, your body needs some fat — the healthy fats — to function normally. If you try to avoid all fat, you risk getting insufficient amounts of fat-soluble vitamins and essential fatty acids.

Also, in attempting to remove fat from your diet, you may wind up eating too many processed foods touted as low-fat or fat-free rather than healthier and naturally lower fat foods, such as fruits, vegetables, legumes and whole grains. Instead of doing away with fat in your diet, enjoy healthy fats in moderation.

**Tips for choosing foods with the best types of dietary fat**

So now that you know which types of dietary fat are healthy or unhealthy, and how much to include, how do you adjust your diet to meet dietary guidelines?

First, focus on reducing foods high in saturated fat, trans fat and cholesterol. Then emphasize food choices that include plenty of monounsaturated fats (MUFAs) and polyunsaturated fats (PUFAs). But a word of caution — don't go overboard even on healthy fats. All fats, including the healthy ones, are high in calories. So consume MUFA-rich and PUFA-rich foods instead of other fatty foods, not in addition to them.

Here are some tips to help you make over the fat in your diet:

- Use the Nutrition Facts label when selecting foods. Read food labels and look for the amount of trans fat listed. By law a serving of food containing less than 0.5 grams of trans fat can be labeled as 0 grams. Therefore, it is important to also check ingredient lists for the term "partially hydrogenated." It's best to avoid foods that contain trans fat and those that have been partially hydrogenated.
- Prepare fish, such as salmon and mackerel, instead of meat at least twice a week to get a source of healthy omega-3 fatty acids. Limit sizes to 4 ounces of cooked seafood a serving, and bake or broil seafood instead of frying.
- Use liquid vegetable oil instead of solid fats. For example, saute with olive oil instead of butter, and use canola oil when baking.
- Use olive oil in salad dressings and marinades.
- Use egg substitutes instead of whole eggs when possible.
- Select milk and dairy products that are low in fat.

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