

Macronutrients

All foods can be broken down into 3 main types of nutrients: **carbohydrates** [car-bow-HI-dray-ts], **protein**, and **fat**. These are called **macronutrients** [MAK-row-NEW-tree-ents]. All 3 macronutrients play important roles in the body and are essential for good health.



Carbohydrates

Carbohydrates are the body's main source of energy.

What do carbohydrates do for my body?

Carbohydrates are needed to:

- Provide the main source of fuel for the brain and for all cells and muscles.
- Fuel the body during any kind of activity, including exercise and activities of daily living. Even simple activities like breathing and walking require energy.
- Refill energy stores for later use. Small amounts of carbohydrate are stored in the liver for quick use when needed. Large amounts of carbohydrate are stored in skeletal muscle.
- Protect muscle tissue from being broken down and used as energy. This is called “protein sparing.”
- Reduce disease risk. Fiber, a type of carbohydrate, is good for the heart and other organs.

How much carbohydrate do I need?

Carbohydrates should provide **more than half** of your total calorie intake (55 to 60 percent). This equals about 200 to 300 grams of carbohydrate a day for most people.

What foods have carbohydrates?

There are 2 main types of carbohydrates that are found in foods:

- 1 Complex carbohydrates.** These take longer for your body to break down. Foods with complex carbohydrates are often rich in vitamins, minerals, and fiber.

Complex carbohydrates are found in whole grain foods such as breads, cereals, pasta, and crackers, as well as vegetables, rice, and all kinds of potatoes.

- 2 Simple carbohydrate.** These take a shorter time to break down. Simple sugars provide quick energy.

Simple carbohydrates are found in milk, fruit juices, white bread, regular pasta, non whole grain cereals and crackers, as well as in the sugars used in desserts and sodas.

Key point: All carbohydrates—whether from a baked potato or piece of cake—break down into glucose (blood sugar). Glucose is used by every cell in the body for energy.



Protein

Protein is a major building block of muscle and is essential for the formation of cells. It is the most important part of every cell in our bodies.

What does protein do for my body?

Protein is needed to:

- Build and repair tissue.
- Provide structure and support for nails, hair, muscle, and bones.
- Maintain bone health.
- Regulate and balance fluids.
- Boost immune system function with antibodies, hormones, and enzymes.
- Help transport nutrients in the body.
- Provide vitamins and minerals.

How much protein do I need?

Most people need about 50 to 70 grams of protein a day. A good rule of thumb is to have 2 servings of dairy per day and 4 to 6 ounces of meat. Three ounces of cooked meat is the size of a deck of cards.

Your dietitian can help you figure out exactly how much protein you need based on your current weight and level of activity.

How much protein you need per day: _____

What foods have protein?

There are 2 main sources of protein:

1 Animal protein. Eating meat and dairy products is the best way to get protein. These are called “complete proteins.”

This type of protein is found in beef, pork, chicken, turkey, fish, seafood, eggs, and dairy.

2 Plant-based protein. You can also get protein from plant sources, but these may not contain all the important nutrients you need. If you only eat plant-based protein, work with your dietitian to make sure you meet all your nutritional needs.

Protein Content of Foods		
Food	Amount	Protein (grams)
Animal proteins:		
Chicken breast	3 ounces	28
Steak	3 ounces	26
Hamburger	3 ounces	26
Salmon	3 ounces	22
Turkey	3 ounces	25
Pork	3 ounces	22
Egg	1 (large)	7
Milk	8 ounces	8
Greek yogurt	6 ounces	18
Regular yogurt	6 ounces	7
Cottage cheese	4 ounces	14
Cheese	1 ounce	7
Plant proteins:		
Pinto beans	½ cup	11
Black, red, or kidney beans	½ cup	8
Chick peas or black-eyed peas	½ cup	7
Quinoa	½ cup	4
Soy nuts	1 ounce	12
Peanuts	1 ounce	7
Peanut butter	1 tablespoon	7
Sunflower seeds	1 ounce	6
Pasta, cooked	1 cup	7
Bread	1 slice	3
Cereal	¾ cup	3

Where can I learn more?

- medlineplus.gov/nutrition.html
- www.nal.usda.gov/fnic/macronutrients

Meats are a good source of protein and other nutrients

Meats are high in protein. They are also a good source of zinc, iron, and other nutrients.

Why is zinc important?

Zinc plays a critical role in the immune system, wound healing, growth, and blood clotting. The body uses zinc in over 300 chemical reactions — without zinc, our bodies wouldn't function properly.



Fats

Fats are used to build cells, make hormones, absorb vitamins, provide energy, and protect the body. Fat is **not** optional, but some fats are better for the body than others.

What does fat do for my body?

Fat is needed to:

- Help your body absorb important vitamins, including vitamins A, D, E, and K.
- Provide energy.
- Protect neurons in the brain and help send messages throughout the body.
- Help cells function and send signals.
- Improve heart health and reduce inflammation.
- Provide flavor and texture to foods.

How much fat do I need?

We need to have almost a third (30%) of our calories coming from fats. The average person needs about 50 to 70 grams of fat a day.

Key point: Compared to carbohydrates, fats have more energy, but fats take longer for the body to break down and use.

Why is iron important?

Iron carries oxygen in the red blood cell and boosts the immune system. Every cell in the body needs iron to produce energy. Iron is also necessary for growth, development, normal cellular functioning, and in the making of some hormones and connective tissue. A lack of iron in the diet causes **anemia** [uh-NEE-mee-uh]. Symptoms of anemia include weakness, fatigue, shortness of breath, dizziness, and brittle nails.

What foods have fat?

The key types of fat found in foods include:

- **Monounsaturated fat.** Found in a variety of foods and oils, such as canola, olive, and peanut oils. Monounsaturated fat helps decrease your risk for heart disease.
- **Polyunsaturated fat.** This type of fat is mostly found in plant-based foods and oils. Polyunsaturated fat also helps promote healthy hearts by improving cholesterol levels.
- **Omega-3 fatty acid.** This is a type of polyunsaturated fats that is especially good for your heart. Fish oils, canola, flaxseeds, nuts, and other seeds are high in this type of fat.
- **Saturated fat.** This type of fat is found in meats and dairy products.
- **Trans fat.** Trans fat is found mostly in processed foods or foods made with partially hydrogenated oils.

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