

Protein

What It Is

Protein is found in foods from both **plants and animals**.

Protein is made up of hundreds or thousands of smaller units, called **amino acids**, which are linked to one another in long chains. The sequence of amino acids determines each protein's unique structure and its specific function.

There are 20 different amino acids that that can be combined to make every type of protein in the body. These amino acids fall into **two categories**:

- **Essential amino acids** are required for normal body functioning, but they cannot be made by the body and must be obtained from food. Of the 20 amino acids, 9 are considered essential.
- **Nonessential amino acids** can be made by the body from essential amino acids consumed in food or in the normal breakdown of body proteins. Of the 20 amino acids, 11 are considered nonessential.

Where It Is Found

Protein is found in a variety of foods, including:

- Beans and peas
- Dairy products (such as milk, cheese, and yogurt)
- Eggs
- Meats and poultry
- Nuts and seeds
- Seafood (fish and shellfish)
- Soy products
- Whole grains and vegetables (these generally provide less protein than is found in other sources)

What It Does

- Protein provides calories, or “energy” for the body. Each gram of protein provides **4 calories**.
- Protein is a component of every cell in the human body and is necessary for proper growth and development, especially during childhood, adolescence, and pregnancy.
- Protein helps your body build and repair cells and body tissue.
- Protein is a major part of your skin, hair, nails, muscle, bone, and internal organs. Protein is also found in almost all body fluids.
- Protein is important for many body processes, such as blood clotting, fluid balance, immune response, vision, and production of hormones, antibodies, and enzymes.

Nutrition Facts	
4 servings per container	
Serving size 1 1/2 cup (208g)	
Amount per serving	
Calories	240
% Daily Value*	
Total Fat 4g	5%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Cholesterol 5mg	2%
Sodium 430mg	19%
Total Carbohydrate 46g	17%
Dietary Fiber 7g	25%
Total Sugars 4g	
Includes 2g Added Sugars	4%
Protein 11g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 6mg	35%
Potassium 240mg	6%
* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	



Health Facts

- Most Americans get the recommended amounts of protein to meet their needs. However, many individuals do not eat enough seafood and dairy products.
- According to the *Dietary Guidelines* for Americans, there is evidence that diets lower in meats and processed meats and processed poultry are associated with a **reduced risk of developing cardiovascular disease** in adults.
- The *Dietary Guidelines for Americans* recommend **eating a variety of protein foods from both plant and animal sources**. The guidelines also note that while processed meats and poultry are sources of sodium and saturated fat, they can be included in a healthy diet when consumed within recommended limits for total calories, sodium, saturated fat, and added sugars.

Protein: A Closer Look

Dietary proteins are not all the same. They are made up of different combinations of amino acids and are characterized according to how many of the essential amino acids they provide.

- **Complete proteins** contain all of the essential amino acids in adequate amounts. Animal foods (such as dairy products, eggs, meats, poultry, and seafood) and soy are complete protein sources.
- **Incomplete proteins** are missing, or do not have enough of, one or more of the essential amino acids, making the protein imbalanced. Most plant foods (such as beans, grains, nuts, peas, seeds, and vegetables) are incomplete protein sources.
- **Complementary proteins** are two or more incomplete protein sources that, when eaten in combination (at the same meal or during the same day), compensate for each other's lack of amino acids. For example, grains are low in the amino acid lysine, while beans and nuts (legumes) are low in the amino acid methionine. When grains and legumes are eaten together (such as rice and beans or peanut butter on whole wheat bread), they form a complete protein.

✓ Action Steps

For Monitoring Protein in Your Diet

Use the **Nutrition Facts** label as a tool for monitoring consumption of protein, and choosing protein foods that are lower in saturated fat. The Nutrition Facts label on food and beverage packages shows the amount in grams (g) of protein per serving of the food. Protein generally has no % Daily Value (%DV) listed on the label, so use the number of grams (g) as a guide.

Food manufacturers may *voluntarily* list the %DV of protein per serving on the Nutrition Facts label, but they are *required* to list the %DV of protein if a statement is made on the package labeling about the health effects or the amount of protein (for example, “high” or “low”) contained in the food.

The Daily Value for protein is 50 g per day.

This is based on a 2,000 calorie daily diet—your Daily Value may be higher or lower depending on your calorie needs.

- When comparing and choosing foods, look at the %DV of protein (if listed). And remember:
 - 5% DV or less of protein per serving is considered low
 - 20% DV or more of protein per serving is considered high
- Choose a variety of protein foods, such as beans and peas, eggs, fat-free or 1% low-fat dairy products, lean meats and poultry, seafood, soy products, and unsalted nuts and seeds.
- Choose seafood and plant sources of protein (such as beans and peas, tofu and other soy products, and unsalted nuts and seeds) in place of some meats and poultry.
- Add beans and peas to salads, soups, and side dishes—or serve them as a main dish.
- Substitute fat-free or 1% low-fat dairy products and fortified plant-based beverages (such as soy, rice, and almond) for whole and 2% reduced-fat dairy products.
- Select fresh meats, poultry, and seafood, rather than processed varieties.
- Trim or drain fat from meats before or after cooking and remove poultry skin before eating.
- Try baking, broiling, grilling, or steaming. These cooking methods do not add extra fat.