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Protein



What do you think about when you hear the word *protein*? Maybe it's an ad for some protein shake that promises massive muscles? Or is it the last high-protein diet craze you read about? With all this talk about protein, you might think Americans were at risk for not eating enough. In fact, most of us eat more protein than we need. Protein is in many foods that we eat on a regular basis.

This section will help you learn more about protein. You'll find information about what foods have protein and what happens when we eat more protein than we need.

To continue, check out the following topics:

- [What is protein? \(/nutrition/everyone/basics/protein.html#What%20is%20protein\)](/nutrition/everyone/basics/protein.html#What%20is%20protein)
- [What are the types of protein? \(/nutrition/everyone/basics/protein.html#Types%20of%20protein\)](/nutrition/everyone/basics/protein.html#Types%20of%20protein)
- [How much protein do I need? \(/nutrition/everyone/basics/protein.html#How%20much%20protein\)](/nutrition/everyone/basics/protein.html#How%20much%20protein)

What is Protein?



Proteins are part of every cell, tissue, and organ in our bodies. These body proteins are constantly being broken down and replaced. The protein in the foods we eat is digested into amino acids that are later used to replace these proteins in our bodies.

Protein is found in the following foods:

- meats, poultry, and fish
- legumes (dry beans and peas)
- tofu
- eggs
- nuts and seeds
- milk and milk products
- grains, some vegetables, and some fruits (provide only small amounts of protein relative to other sources)

As we mentioned, most adults in the United States get more than enough protein to meet their needs. It's rare for someone who is healthy and eating a varied diet to not get enough protein.

What are the types of protein?

Proteins are made up of amino acids. Think of amino acids as the building blocks. There are 20 different amino acids that join together to make all types of protein. Some of these amino acids can't be made by our bodies, so these are known as *essential* amino acids. It's *essential* that our diet provide these.

In the diet, protein sources are labeled according to how many of the essential amino acids they provide:

- A *complete* protein source is one that provides all of the essential amino acids. You may also hear these sources called *high quality proteins*. Animal-based foods; for example, meat, poultry, fish, milk, eggs, and cheese are considered complete protein sources.



- An *incomplete* protein source is one that is low in one or more of the essential amino acids. *Complementary* proteins are two or more incomplete protein sources that together provide adequate amounts of all the essential amino acids.



For example, rice contains low amounts of certain essential amino acids; however, these same essential amino acids are found in greater amounts in dry beans. Similarly, dry beans contain lower amounts of other essential amino acids that can be found in larger amounts in rice. Together, these two foods can provide adequate amounts of all the essential amino acids the body needs.

Quick Q& A

Is it true that complementary proteins must be eaten together to count as a complete protein source?

In the past, it was thought that these complementary proteins needed to be eaten at the same meal for your body to use them together. Now studies show that your body can combine complementary proteins that are eaten within the same day.¹

How much protein do I need?

Maybe you've wondered how much protein you need each day. In general, it's recommended that 10–35% of your daily calories come from protein. Below are the Recommended Dietary Allowances (RDA) for different age groups.²

Recommended Dietary Allowance for Protein	
	Grams of protein needed each day
Children ages 1 – 3	13
Children ages 4 – 8	19
Children ages 9 – 13	34
Girls ages 14 – 18	46
Boys ages 14 – 18	52
Women ages 19 – 70+	46
Men ages 19 – 70+	56

Here are examples of amounts of protein in food:

- 1 cup of milk has 8 grams of protein
- A 3-ounce piece of meat has about 21 grams of protein
- 1 cup of dry beans has about 16 grams of protein
- An 8-ounce container of yogurt has about 11 grams of protein

Added together, just these four sources would meet the protein needs of an adult male (56 grams). This doesn't count all the other foods that add smaller amounts of protein to his diet.

Rather than just focusing on your protein needs, choose an overall healthy eating plan that provides the protein you need as well as other nutrients.

ChooseMyPlate.gov Daily Food Plan

(<http://www.choosemyplate.gov/myplate/index.aspx>) 

(<http://www.cdc.gov/Other/disclaimer.html>) lets you enter your age, sex, weight, height and physical activity level to get a personalized plan just for you.



(<http://www.choosemyplate.gov/myplate/index.aspx>)

To help you get the amounts of protein you need:

- Compare the amount of meat, poultry, fish, eggs, legumes, nuts, and seeds you are eating per day to what is recommended. As an example, if you refer to [MyPlate Daily Food Plan](http://www.choosemyplate.gov/myplate/index.aspx) (<http://www.choosemyplate.gov/myplate/index.aspx>) [Ⓕ](http://www.cdc.gov/Other/disclaimer.html) (<http://www.cdc.gov/Other/disclaimer.html>), a 48-year-old female who is active less than 30 minutes a day only needs about 5 ounces each day from the protein group. Some pre-cut slices of meat and poultry, such as a pork chop or chicken breast, can be four to five ounces each. You can see how it would be easy to eat too much.
- Save your money and don't buy the protein supplements. If you're healthy, you probably get all the protein you need from your diet.

To help you make lower-fat protein choices —

- Choose meats that are leaner cuts and trim away any fat you can see. For chicken and turkey, remove the skin to reduce fat.
- Substitute pinto or black beans for meat in chili and tacos.
- Choose low-fat or fat-free milk and yogurt.
- Choose low-fat or fat-free cheese.
- Choose egg whites or pasteurized egg white products.

What if I am a vegetarian?

Because some vegetarians avoid eating all (or most) animal foods, they must rely on plant-based sources of protein to meet their protein needs. With some planning, a vegetarian diet can easily meet the recommended protein needs of adults and children.

Choosemyplate.gov provides [meal planning tips for vegetarians](http://www.choosemyplate.gov/healthy-eating-tips/tips-for-vegetarian.html) (<http://www.choosemyplate.gov/healthy-eating-tips/tips-for-vegetarian.html>) [Ⓕ](http://www.cdc.gov/Other/disclaimer.html) (<http://www.cdc.gov/Other/disclaimer.html>).

Sources

¹Position of the American Dietetic Association and Dietitians of Canada: Vegetarian diets. *JADA*, 2003; 103(6) 748 – 765.

²Source for Acceptable Macronutrient Distribution Range (AMDR) reference and RDAs: Institute of Medicine (IOM) Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. This report may be accessed via www.nap.edu (<http://www.nap.edu>) [Ⓕ](http://www.cdc.gov/Other/disclaimer.html) (<http://www.cdc.gov/Other/disclaimer.html>)*

[back to top \(/nutrition/everyone/basics/protein.html#top\)](/nutrition/everyone/basics/protein.html#top)

Is there any harm in getting more protein than I need?



Most people eat more protein than they need without harmful effects. However, protein contributes to calorie intake, so if you eat more protein than you need, your overall calorie intake could be greater than your calorie needs and contribute to weight gain.

Besides that, animal sources of protein can be sources of saturated fat which has been linked to elevated low-density lipoprotein (LDL) cholesterol, a risk factor for heart disease.

In addition, for people with certain kidney diseases, a lower-protein diet may be recommended to help prevent an impairment in kidney function.

Source: [NIH Medical Encyclopedia](http://www.nlm.nih.gov/medlineplus/encyclopedia/) (<http://www.nlm.nih.gov/medlineplus/encyclopedia/>) [Ⓕ](http://www.cdc.gov/Other/disclaimer.html) (<http://www.cdc.gov/Other/disclaimer.html>)

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