

# Proteins as building blocks

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Proteins act as the building blocks that make up a large part of every cell in your body, including muscle, skin, bone, and hair; they are also essential for building enzymes, hormones, and hemoglobin.

Proteins are made up of smaller components called amino acids, some of which can be produced by our bodies, and others, which must come from the foods we eat. The ones that must come from our diet are called essential amino acids and include histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine.

Because foods have varying levels of these essential amino acids, it is important to eat a good diet.

The National Academies of Science Institute of Medicine recommends that 10 to 35 percent of the diet comes from protein and adults get a minimum of 0.8 grams of protein for every kilogram of body weight per day—that's about 58 grams for a 160-pound adult.

Protein need increases for people who are exercising or those who want to maintain or build their muscle mass.

Protein provides benefits you can see and feel because:

- **They give you energy:** Protein stimulates certain cells in the brain that keep us awake and increase our energy expenditure throughout the day.
- **They fill you up:** Studies show people who eat a meal or snack containing protein feel fuller longer and that means a reduction in overall daily calorie consumption because subjects were simply not as hungry between meals or at mealtime.
- **They maintain lean body mass:** Protein is essential for maintaining muscle mass whenever you are on a calorie-restricted diet, exercising, or building muscle. Without enough protein in the diet, the body starts to use muscle mass for energy and this leads to decrease in lean body mass and a drop in metabolism. Leucine, an amino acid in protein, especially, is good at maintaining lean body mass during low-calorie diets.

The typical American diet includes enough protein, but not always from the healthiest sources. USDA data shows red meat still tops poultry and fish in per capita consumption.

Depending on the type, red meat can have a high fat and cholesterol content which can increase both your weight and your risk of heart disease. Choose lean cuts of meat, and consider substituting other sources of protein for some of the red meat in your diet. Your best sources of protein are poultry, fish, and vegetable sources such as soy protein, dried beans along with low fat dairy foods.

Make sure you include a good quality protein with every meal to maximize the benefits of feeling full and building muscle, including snacks after workouts. It has been shown that eating protein, especially protein high in the essential amino acid leucine, after a workout helps to build lean muscle. Try adding soy or whey protein to a smoothie or yogurt in the morning. Choose nuts, beans, or cheese as a snack and include lean proteins with lunch and dinner. Over time, you may find yourself feeling stronger and looking leaner.

What is your favorite way to include proteins in your day?