

Become a PRO on Protein

Ask any weight lifter what's the most important nutrient in the diet and you'll probably hear protein as the answer. While protein may or may not be the most important nutrient for everyone, protein is important for many functions within the body. The average diet usually has more than enough protein so chances are you may not need to cram protein at every eating opportunity. Protein requirements can be a little different for everyone depending on the activities you participate in and how you train. Do you know what your daily protein needs are? First a little background

What is Protein?

Protein is an essential nutrient that the body needs everyday for normal bodily functions. Proteins are broken down during digestion into amino acids; the building blocks that help to build, repair and maintain various tissues. Our bodies can use the amino acids individually or combine them together in different combinations to make whatever it needs. Of the 22 amino acids, our bodies can make 13 on it_s own (the non-essential amino acids) but the other 9 essential amino acids must be supplied by the diet everyday. Remember that proteins yield 4 calories per gram when digested. This means that the body can and does use protein as a source of energy (calories) and excess amounts can be stored as fat.

There are different types of protein found in the body that do different things:

- Keratin is a protein that is used for building hair, finger and toenails and the outer layers of skin.
- Myosin, actin, myoglobin and other proteins are used to build muscle tissue.
- The inner portion of bones (bone marrow) is made of proteins.
- Red blood cells are made of hemoglobin (the stuff responsible for carrying oxygen), which is another form of proteins.
- Almost half of your daily protein intake is used to make enzymes which are responsible for controlling many of the thousands of chemical reactions that take place in the body everyday.
- Proteins also make up our DNA/RNA and are found in every cell within our bodies.

Animal vs. Plant Proteins:

Although the proteins from animals and plants are made from the same amino acids there are some important differences in how our body digests and uses each one. Animals are obviously similar to people in some ways and the proteins and combinations of amino acids found in animals are also similar to ours. Because of this, animal proteins are easier for our bodies to use, digest and absorb and usually require less processing by the body. Animal proteins include meat, fish, poultry, eggs and dairy products. The egg is

considered the perfect protein food because it contains all the amino acids humans need and it's very easy to digest. If you skip the yolk, you'll get most of the protein without the fat!

Plant proteins, on the other hand, are missing some of the amino acids we need and they aren't as easy for our body to digest and absorb. It's possible to get all the proteins your body needs from plants but it takes a little more planning and combining of foods than just wolfing down a slab of meat. Plant sources of protein include legumes (beans and peas), nuts, seeds, grain products and vegetables. Soybeans are considered one of the best plant proteins because they contain high amounts of all nine essential amino acids and should be included in diets where animal foods are avoided. Soybeans are great in casseroles and soups, as a side dish or even as a snack (the ones still in the pod).

Protein Requirements:

So now that you realize how good this stuff is, you're probably wondering how much of it you need everyday. Because protein is used to build muscle tissue, many bodybuilders and people who weight train think that the more protein they eat the bigger their muscles will grow. This makes about as much sense as thinking that just because there's gas in your car you have to go for a drive. Sure your car needs gas to run, but if you don't go anywhere the gas just sits there until you need it. It's the same with protein; your body needs certain amounts to build and repair muscle tissue, but unused protein is either used as energy or converted to fat. The body can't store protein for future use. Once protein is turned to fat it can only be used for energy because your body can't convert fat back into protein. Although protein is used to build muscle, the actual muscle stimulation causes the muscle to grow not the availability of proteins.

It's true that people who exercise need a little more protein than non-exercising people do but the average diet usually provides more than enough protein. Children also need more protein than adults do because they're growing so rapidly. Women need a little more protein than men do because of blood loss every month during menstruation. Below are protein recommendations made by most sports nutritionists:

Note: Protein requirements are sometimes given in grams per *kilogram* of body weight rather than grams per *pound* of body weight. If using grams per kilogram of body weight, the number of grams recommended would be slightly higher.

- **Current RDA for a sedentary adult** = 0.4 grams per pound of body weight
- **Adult recreational exerciser** = 0.5-0.75 grams per pound of body weight
- **Adult competitive athlete** = 0.6-0.9 grams per pound of body weight
- **Growing teenage athlete** = 0.8-0.9 grams per pound of body weight
- **Adult building muscle mass** = 0.7-0.9 grams per pound of body weight
- **Athlete restricting calorie intake** (proteins being used for fuel increases requirements) = 0.8-0.9 grams per pound of body weight

- **Maximum protein for adults** = 0.9 grams per pound of body weight

So why does it matter if you eat more protein than you need, as long as your daily calorie intake is where it should be? From a chemistry standpoint, all calorie-providing nutrients (carbohydrates, fats and proteins) are made of carbon, hydrogen and oxygen. The only difference between these 3 types of foods is that proteins also contain nitrogen. The waste products of digesting proteins (urea) must be filtered and excreted. High protein intake can result in over-working your kidneys and more frequent urination, which potentially could lead to kidney problems, dehydration, loss of water-soluble vitamins and nutrients and build up of waste products (gout, kidney stones and uremic poisoning).

Sources of Protein and Grams per Serving

Egg	1 large	6 grams
Egg White	1 large	3.5 grams
Milk (1%)	8 ounces	8 grams
Yogurt	8 ounces	11 grams
Cottage Cheese	4 ounces	15 grams
Haddock (fish)	4 ounces	27 grams
Hamburger	4 ounces	30 grams
Pork Tenderloin	4 ounces	30 grams
Chicken Breast	4 ounces	35 grams
Tuna	6 ounces	40 grams

Almonds	12 nuts	3 grams
Peanut Butter	1 tablespoon	4.5 grams
Kidney Beans	4 ounces	6 grams
Refried Beans	4 ounces	7 grams
Tofu, extra firm	4 ounces	12 grams
Boiled Soybeans	4 ounces	11 grams

Although this is only some of the protein foods, you get an idea of how animal and plant proteins vary. Now that you're PRO on proteins, you know exactly how much you need everyday and what the best sources are. Take a look at your diet and see how your protein intake compares.