

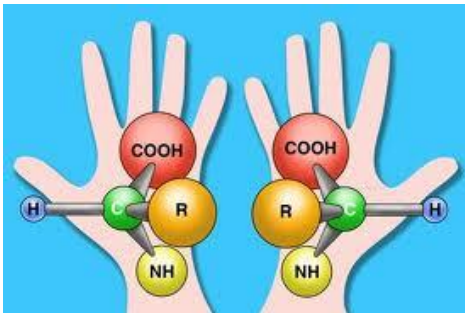


## Protein

Protein is essential for growth, maintenance and repair of cells as well as for the production of antibodies, which fight against infection and illness. As well as being in some of the foods we eat, protein is present in our body such as our muscles, nails and hair. Each is structured differently.

In simple terms, proteins are made up of long chains of amino acids of which there are 22 different types. Our bodies need all of them in order to function properly. Of the 22 amino acids, your body can make 13 of them without you ever having to think about it. Our bodies require the remaining nine amino acids from our diet.

Protein-rich foods sometimes referred to as "complete proteins" are meat, fish, legumes, tofu, eggs, nuts seeds and milk. Proteins that are termed "incomplete" usually lack in one or more of the essential amino acids, which are generally found in grains, some vegetables and some fruits.



Combining two or more of the "incomplete" proteins usually results in a complete supply of essential amino acids. For example a simple dish like rice and beans will form a complete protein and give the body all the essential amino acids.

### What is an Amino Acid?

*Amino acids are chemical compounds containing carbon, hydrogen, oxygen and nitrogen, which combine together into different structures to form the various types of protein that the body requires.*

## How Much Should I Be Getting

The Institute of Medicine recommends 0.8 grams of protein per kilogram of body weight.

## Causes of Excessive Protein Intake

Consuming too many foods that are high in saturated fats could lead to heart disease and stroke.

Our kidneys work to remove the harmful nitrogen, which is found in foods that contain protein. Consuming excessive protein puts a strain on the liver and kidneys. The stress may lead to kidney disorders or damage to the body's filtering capabilities.

Our bodies cannot store excess protein therefore the surplus that is consumed is converted into glucose in the liver and either used up as energy or stored as fat.

Our body works to breakdown nucleic acids (found in protein-rich foods) and convert it into uric acid. Too much uric acid in the body leads to gout, an extremely uncomfortable condition that causes a person's joints to become inflamed, tender and painful to move.

Excessive amounts of protein promote the loss of calcium in the bones through the urine which can lead to osteoporosis (thinning of the bones).

## Causes of Low Protein Intake

Protein-rich foods are good sources of iron. Lack of iron will result in tiredness and fatigue, leaving the body weak and with little energy.

Lack of protein may also cause skin problems and generally give us an unhealthy and tired appearance.

Lack of protein in children can lead to stunted growth and even poor mental development.

### Resources:

[InstituteofMedicine.ca](http://InstituteofMedicine.ca)

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## Fun Food Facts!



Next to water, Protein is the most plentiful substance in your body



## Did You Know?



Eggs contain the highest amount of essential amino acids and are the best source of protein you can give your body

### Protein Strategies

- ✓ Consume the best sources of complete protein such as meat, fish, shellfish, poultry and dairy products.
- ✓ Try to consume a variety of protein rather than getting it from one source.
- ✓ Know your weight and how much protein you should be consuming.
- ✓ Limit high protein foods that are high in saturated fat.
- ✓ Swap full-fat foods such as cheddar cheese or full-fat milk for cottage cheese or skim milk.