

## Function of protein

Protein is one of the five nutrients and it is an essential part of your diet. We need protein for **growth, repair and maintenance** and it is a secondary source of **energy**. This means that the body will use protein for energy when there is not enough carbohydrate or fat to meet the bodies needs. Some groups of people need more protein than others. Protein is needed for growth during adolescence and pregnancy and for repair after illness or injury.

## What are proteins made up of?



There are about twenty different amino acids.

These **amino acids** make lots of different proteins, depending on which amino acids are in the chain. They are known as **essential** and **non-essential amino acids**. Non-essential amino acids can be made from the body but essential amino acids must come from the diet. 10 of the 20 amino acids are essential for children but only 8 of them for adults. This is because children need the extra two for growth.

## Macronutrients (Nutrients needed by the body in large amounts) Protein



## HBV/ LBV and Protein Complementation

Some foods contain all of the essential amino acids and these are HBV proteins (**high biological value**). The foods that have all of the essential amino acids are mainly foods from animals such as meat. Some plant foods are HBV such as soya beans and quinoa.

**Low biological value** proteins (LBV) are **missing one or more of the essential amino acids**. The foods that provide these are mainly foods from plants such as peas and beans. One exception is gelatine which is an animal based product and is LBV.

To ensure a well-balanced diet low biological value proteins should be served together to provide all of the essential amino acids. This is known as **complementary proteins**.

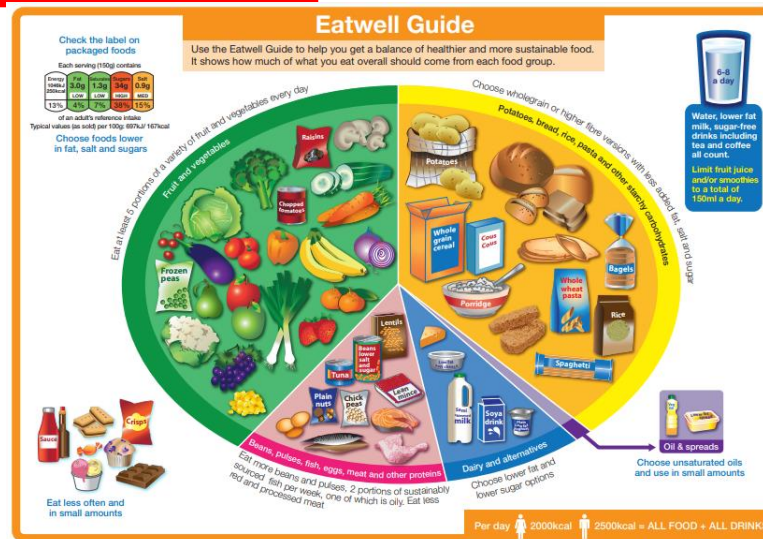
Examples

Beans on Toast

Hummus and Pitta Bread

## Deficiency

- The body does not grow properly, affecting child development.
- Nails and skin become weak, dry and brittle and hair may fall out.
- The immune system is weakened making the body prone to infection



## How much protein do different groups of people need?

As we get older our muscle is replaced with fat so our bodies need less energy for maintenance. Some groups of people need more protein than others. Protein is needed for growth during adolescence and pregnancy and for repair after illness or injury.

Males generally need more protein per day than females. Therefore a teenage boy will require 55.2g of protein and a girl 45.4g.

