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## Protein

Protein must be broken down into amino acids in the body before they can be used in a myriad number of ways. Proteins do the heavy lifting in the body – build, strengthen, repair and replace.

This can be:

- structural, like collagen
- hormonal, like insulin
- carriers, for example, haemoglobin
- enzymes, such as amylase

All of these are proteins.

Keratin is a structural protein that strengthens protective coverings, such as hair. Collagen and elastin, too, have a structural function, and they also provide support for connective tissue.

Most enzymes are proteins and are catalysts, which means they speed up chemical reactions. They are necessary for respiration in human cells, for example, or photosynthesis in plants.

And what is surplus to requirement is broken down and re-purposed or used as energy.

There are 20 different amino acids in plants and animal proteins, 9 of which are essential. Essential because our bodies cannot synthesize them and so they must come directly from our diet.

**Protein Quality** refers to how easily a protein source is digested and its amino acid profile.

**High Quality Protein** is easily digestible and contains higher concentrations of amino acids in ratios more suited to your body's needs. This is generally found in animal proteins.

**Low Quality Protein** Are missing one or more of the essential amino acids. However, you can certainly get all your essential amino acids from a vegetarian or vegan diet, it's just harder work.



# Zest for Life

Note: The body cannot store protein and if you don't eat enough, it will break down muscle and tissue for functional needs. Hence, on a very low calorie diet, it will be hard not to lose muscle protein.

Conversely, if you eat too much protein it will be converted into energy but if the energy is not needed, it will be converted into fat.

## References

<https://www.movementandnutrition.co.uk/what-are-macronutrients/>  
<https://www.betterhealth.vic.gov.au/health/healthyliving/protein>  
<https://www.medicalnewstoday.com/articles/196279#sources>