

Proteins

**Generalised structure of an amino acid**

Proteins

**Word equation for forming a dipeptide**

Proteins

**What is a peptide bond?**

Proteins

**Essential versus non-essential amino acids**

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**Why do vegan diets need attention to protein?**

Proteins

**Three reasons for the infinite variety of peptide chains**

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**Define denaturation.**

Proteins

**How does high temperature denature a protein?**

amino acid + amino acid  $\rightarrow$  dipeptide + water

An alpha carbon bonded to an amine group ( $-\text{NH}_2$ ), a carboxyl group ( $-\text{COOH}$ ), a hydrogen atom and an R-group.

Essential cannot be synthesised and must come from food; non-essential can be made from other amino acids.

The  $-\text{CO}-\text{NH}-$  bond formed by condensation between the carboxyl group of one amino acid and the amine group of the next.

20 amino acids in the genetic code; chains of any length from a few to thousands; amino acids in any order.

Some plant proteins are low in certain essential amino acids, so a variety of plant sources is needed.

Increased vibration breaks hydrogen bonds and other weak interactions, so the protein unfolds; peptide bonds stay intact.

A usually permanent change in a protein's three-dimensional structure, so it can no longer carry out its function.

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**How does pH denature a protein?**

It changes the charges on R-groups,  
breaking ionic bonds and altering hydrogen  
bonds that hold the shape.