**Complementation – amino acids**

**Limiting amino acids**

Some foods may be lacking in or contain very little of one or more of the essential or indispensable amino acids. The amino acid that is missing is called the limiting amino acid.

Examples are:

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| **Foods** | **Limiting Amino Acid** |
| Cereals (rice, wheat) | Lysine |
| Maize, gelatine | Tryptophan |
| Peas, beans, and lentils, nuts, potatoes, cow’s milk, cheese, soya beans | Methionine and Cystine |

**Complementary action of proteins**

A varied diet that includes different types of food will contain all the amino acids that an individual needs. If a food lacking in an amino acid is eaten with another food which contains it, then the second food compensates for the first and vice versa. This is called the **complementary action of proteins**.

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| **Foods** | **Limiting Amino Acid** |
| Beans on toast | Methionine + cystine  lysine |
| Macaroni and cheese | Lysine  Methionine + cystine |
| Hummus and pitta bread | Methionine  Lysine |
| Tortilla and refried beans | Tryptophan  Methionine + cystine |
| Rice and peas | Lysine  Methionine + cystine |
| Corn chowder soup and bread | Tryptophan  Lysine |
| Dahl and chapatti | Methionine + cystine  Lysine |
| Vegetable chill with red kidney beans and rice | Methionine + cystine  Lysine |
| Polenta made with cheese and maize | Methionine + cystine  Tryptophan |