

# Nutrition

# Cooking methods

**Macronutrients:** Protein, Carbohydrates and Fats needed in large amounts

**Micronutrients:** Vitamins and Minerals, needed in small amounts

The **percentages** of the macronutrients we need each day are:

- 50% Carbohydrates**
- 35% Protein**
- 15% Fat**

**Protein:** Essential for growth, repair and a secondary source of energy

**Fat:** Essential for energy, insulation of the body and protection of the organs.

**Carbohydrates:** Essential for energy

**Fibre:** Dietary fibre is essential for digestion of food and colon health

**Antioxidants:** Essential in the removal of toxins for the body. E.g. Vitamin C and Vitamin E.

**Vitamins:** Essential to prevent diseases. Water-soluble B&C, Fat-Soluble A,D,E,K.

## HBV Protein

**HBV Protein:** Contains all of the amino acids needed by the body. Mainly found in animal products such as meat, eggs and dairy.

## LBV Protein

**LBV Protein:** Missing one or more of the amino acids needed by the body. Mainly found in products such as rice, lentils and seeds.



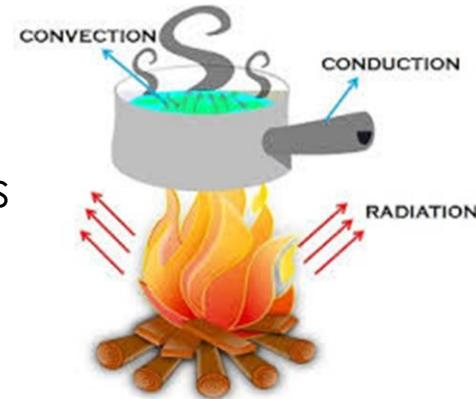
**Protein complementation** is when two LBV proteins are eaten together.



**Conduction:** Direct heat. Molecules heat each other up through vibration e.g. Frying an egg

**Convection:** Indirect heat. Warm molecules rise and cold molecules sink. This movement cooks food e.g. Boiling pasta, pizza in oven

**Radiation:** Heat through infrared rays. E.g. Microwave, Grill, Toaster.



## Food Safety

**Danger Zone:** The danger zone is where bacteria multiply the fastest. This is between 5 and 63 degrees.

**Food Storage:** There are 3 types of food storage: Fridge, Freezer and Ambient (room temperature)

**Personal hygiene rules:** Wear an apron, tie your hair back, blue plasters over cuts and jewellery removed. This prevents cross-contamination and prevents accidents.

**Meat storage:**

**Red meat in the fridge for no longer than 3-4 days**

**Chicken/ Fish in the fridge for no longer than 1-2 days.**



Ensure meat is wrapped and stored away from other foods.

**Reheating meat:** Reheat cooked food only once and ensure it reaches at least 75 degrees.

# Cross-Contamination

Bacterial cross-contamination is most likely to happen when raw food touches or drips onto ready-to-eat food, utensils or surfaces. You can prevent this by:

**Preparing food safely-** separate raw meat and other foods, don't wash raw meat, wash hands thoroughly after touch raw meat

**Storing food effectively-** Cover food, different shelves

**Use shopping bags safely-** use cotton bags so that they can be washed, make sure raw meat is in separate bags etc.

# Food Science

**Caramelisation:** Sugars in a food product change colour, taste and texture when heat is added

**Enzymic Browning:** When a food is cut open, the enzymes in the food react with oxygen. This changes the colour and taste of the food.

**Gelatinisation:** Helps to thicken foods containing starch such as sauces and custards.

**Raising agents:** 3 main types are **chemical, biological and mechanical.**

**Sauce making:** 3 main types are **Starch based, Reduction and Emulsion**



# Processes

**Fortification:** Fortification is where nutrition is added to food. This is because during processing, these natural vitamins or minerals are lost. For example:

**White flour: B vitamins and Iron are added**

**Breakfast Cereals: Folic acid and Iron are added**

Multivitamin supplements are also popular



**Cheesemaking:** Pasteurisation heats the milk to 72 degrees for 3 seconds to kill bacteria. Starter culture is added. Rennet is added and this causes curdling. Milk proteins clump together forming a web or matrix that traps water and fat (whey and curds). Curds are moulded and pressed, then matured to develop flavour. Cheese can grow bacteria which can create various textures and flavours however, care must be taken to make sure the cheese doesn't decay.

# Factors affecting food

**Free Range:** Animals have space to live, better lives and food and a better standard of welfare

**Organic:** Food products grown and processed without chemicals

**Food Miles:** The distance food travels from where it is produced, to your plate

**GM foods:** Foods that have had their genes altered to improve their characteristics such as improving growth

**Additives:** Additives are ingredients added to a product to enhance attributes such as flavour



**Marketing strategies:** Special offers (Buy one, get one free), Loyalty cards, store layout (flowers/ fruit & veg are at the front of the store to promote freshness) expensive products at eye level and cheaper, own brand products on floor level. Till items to increase spend.