Food Preparation & Nutrition

Yr8 Food – Term 2/ Spring

North Oxfordshire Academy
The best in everyone™
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Food contains nutrients which are substances that are needed by our bodies to perform different functions. We need to eat a diet that contains all the nutrients in the right amounts to keep healthy!

Nutrients are grouped into:

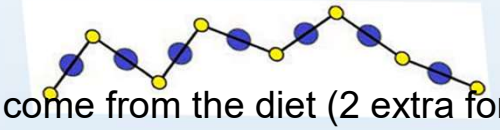
Macronutrients:

- Protein, Carbohydrate and Fat.
- All provide us with energy
- Needed by the body in larger quantities
- Measured in grammes (g)

Micronutrients:

- Vitamins and minerals.
- Necessary for body processes and to keep the body healthy including energy production, immune function, blood clotting
- Needed by the body in small amounts
- Measured in milligrams (mg)

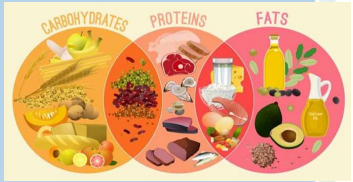
Proteins

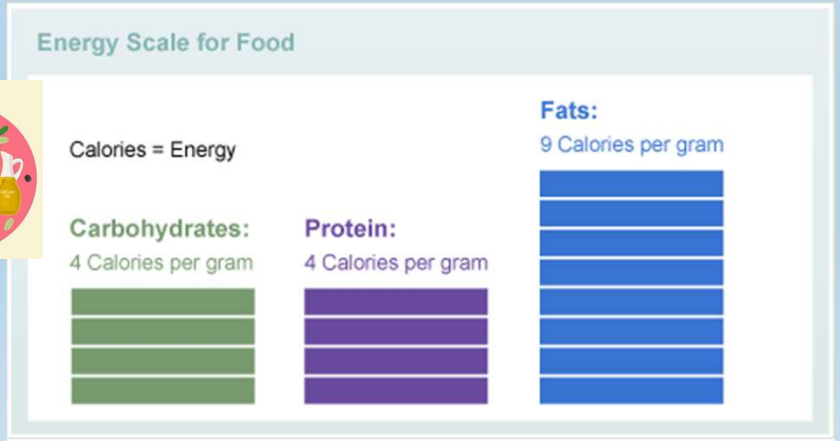


- Made of **amino acids**.
- 8 are **essential** and must come from the diet (2 extra for children for growth).
- **High biological value protein foods (HBV)** contain all the essential amino acids. Eg: meat, fish, milk, eggs, soya, quinoa
- **Low biological value protein foods (LBV)** are missing one or more essential amino acids. Eg: Pulses, nuts, seeds, cereals
- **Protein complementing** is when 2 LBV protein foods are combined to provide all the 10 essential amino acids Eg: Beans on toast

Fats are divided into **Saturated** (from animal sources, solid at room temperature) and **Unsaturated (**from plant sources, liquid at room temperature).

Carbohydrates are divided into **Sugars, Starches** and **Dietary Fibre**. Dietary fibre keeps the digestive system healthy by helping food waste travel through the body more easily. Found in wholegrains and the cell walls of plants.





Nutrient density: The concept of nutrient density is virtually the opposite of empty calories. A nutrient-dense food is rich in nutrients compared to a calorie-dense food that is higher in calories.

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Vitamins are divided into Water-soluble and Fat-soluble vitamins. **Water-soluble** vitamins cannot be stored in the body and are therefore required daily. **Fat-soluble** vitamins can be stored in the body

Fat soluble vitamins

Vitamin	Function	Sources
Vitamin A	Helps the immune system to work as it should. It also helps with vision and helps keep skin and the linings of some parts of the body, such as the nose, function normally.	Liver, cheese, eggs, dark green leafy vegetables and orange-coloured fruits and vegetables (e.g. carrot, sweet potato, butternut squash, cantaloupe melon and papaya).
Vitamin D	Helps the body to absorb calcium and helps to keep bones strong. It also helps muscles to function normally and the immune system to work as it should.	Oily fish, eggs, fortified breakfast cereals and fat spreads. In summer, the majority of people will get most of their vitamin D through the action of sunlight on the skin.
Vitamin E	Helps to protect the cells in our bodies against damage.	Vegetable and seed oils (e.g. olive, rapeseed, sunflower, peanut oils) nuts and seeds (e.g. sunflower seeds and almonds), avocados and olives.
Vitamin K	Needed for the normal clotting of blood and is required for normal bone structure.	Green vegetables (including leafy greens, broccoli, green beans and peas) and some oils (e.g. rapeseed, olive and soya oil).

Water soluble vitamins

Vitamin C	Helps to protect cells from damage. Helps with the formation of collagen, which is important for normal bones, gums, teeth and skin. It also helps the immune system work as it should and the nervous system to function normally.	Fruit (especially citrus fruits, blackcurrants, strawberries, papaya and kiwi), green vegetables, peppers and tomatoes.

Mineral Name	Major Functions	Food Sources
Calcium	Makes up bone and teeth; muscle contraction/relaxation; blood pressure; clotting; nerve function	Dairy, fish with bones, tofu, greens, legumes, fortified foods
Iron	Part of hemaglobin – carries oxygen in blood, myoglobin carries oxygen in muscle	Red meats, fish, poultry, eggs, legumes, dried fruit
Sodium	Maintains normal fluid and electrolyte balance, assists nerve impulse transmission, muscle contraction	Table salt, soy sauce, MSG, all processed foods.

BMI = $\frac{\text{weight (kg)}}{(\text{height in m})^2}$

Recommended BMI range (adults)	
Less than 18.5	Underweight
18.5 to 25	**Desirable or healthy range**
25-30	Overweight
30-35	Obese (Class I)
35-40	Obese (Class II)
Over 40	Morbidly or severely obese (Class III)

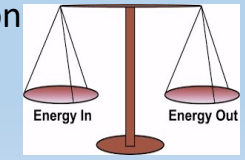
Energy Balance

Energy in the body is measured in units of kilocalories (kcal) or kilojoules (kJ). The energy balance is the difference between the energy put in the body (calories eaten) and the energy used by the body through normal bodily functions and physical activity. – ***Calories in balanced with calories out.***

Any excess calories are stored by the body as fat which can lead to weight gain and obesity and a risk of heart disease and type 2 diabetes.

Each person needs a different amount of energy depending on

- Gender (male or female)
- Age
- Physical activity



Basal metabolic rate (BMR) is the rate at which a person uses energy to maintain the basic functions of the body when it is at complete rest.

Body Mass Index (BMI) can be used to identify if an adult is a correct weight for height.