

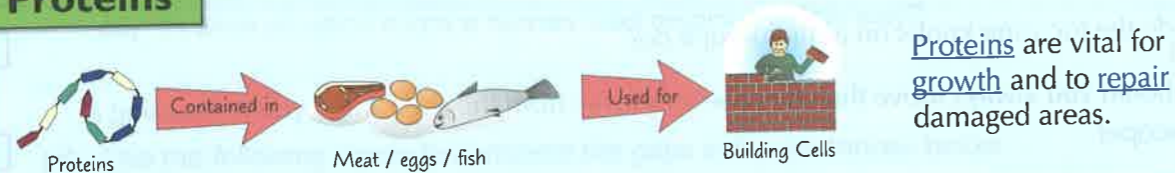
Nutrition

Nutrition is **what you eat** — and what you eat is really **important** for your **health**.
A **balanced diet** will have the right amount of the **five nutrients** listed below, as well as **fibre** and **water**.

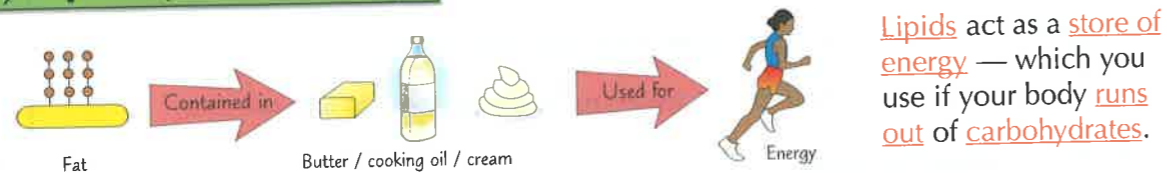
1) Carbohydrates



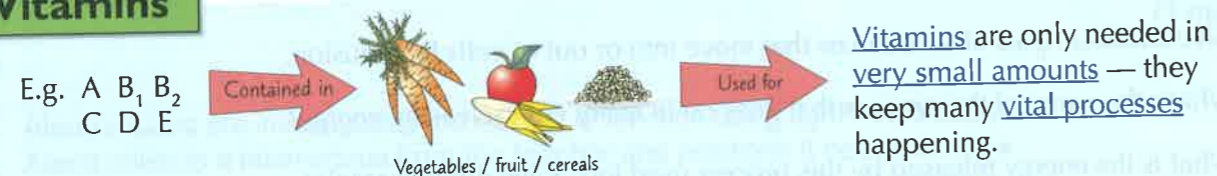
2) Proteins



3) Lipids (Fats and Oils)



4) Vitamins



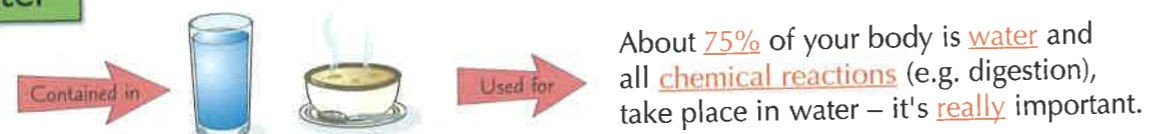
5) Minerals



Fibre



Water



Nutrition and Energy

Your body needs energy **all the time**. Even when you're asleep your body is using energy just to **keep you alive**. It's important that you get this energy from a **balanced diet**, or a few **nasty things** can happen...

An Unbalanced Diet Can Cause Health Problems

Obesity

- 1) If you **take in more energy** from your diet **than you use up**, your body will store the **extra energy** as **fat** — so you will **put on weight**.
- 2) If you weigh **over 20% more** than the recommended weight for your height, then you are classed as **obese**.
- 3) Obesity can lead to **health problems** such as **high blood pressure** and **heart disease**.



Starvation and Deficiency Diseases

- 1) Some people don't get **enough food to eat** — this is **starvation**.
- 2) The effects of starvation include **slow growth** (in children), being **more likely** to get **infections**, and **irregular periods** in women.
- 3) Some people don't get enough **vitamins or minerals** — this can cause **deficiency diseases**. For example, a lack of **vitamin C** can cause **scurvy**, a deficiency disease that causes problems with the skin, joints and gums.



Different People Have Different Energy Requirements

- 1) The **amount of energy** you need each day depends on your **body mass** ("weight") and level of **activity**.
- 2) Every **cell** (see page 2) in the body needs **energy**. So the **bigger** you are, the **more cells** you have, and the more energy you'll need.
- 3) For every **kg** of **body mass**, you need **5.4 kJ** of energy every **hour**. This is the **basic energy requirement (BER)** needed to maintain **essential** bodily functions.

A kJ is a unit of energy.

You calculate it like this:

$$\text{Daily BER (kJ/day)} = 5.4 \times 24 \text{ hours} \times \text{body mass (kg)}$$

E.g. a 60 kg person requires $5.4 \times 24 \times 60 = 7776$ kJ/day

- 4) You also need **energy** to **move**, and it takes **more** energy to move a **bigger mass**.
- 5) So, the **heavier** and the **more active** you are, the **more energy** you will need.
- 6) To find out how much **energy you need in a day** you have to **add together** your **daily BER** and the **extra energy** you use in your **activities**.

For example, a 60 kg person will use about **400 kJ walking** for half an hour, but **1500 kJ running** for half an hour.

You need to eat a balanced diet to stay healthy

Too much or **too little food** (or not eating the right foods) can lead to some serious **health problems**. Make sure you understand the health problems on this page. You also need to know how to work out someone's daily energy requirement — it's important for **avoiding** the health problems above.