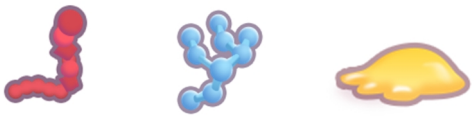
2.3.1

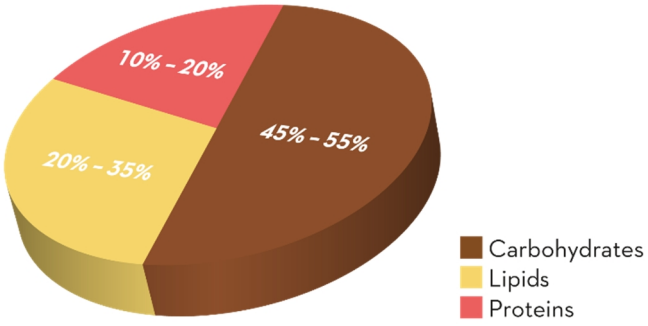
The calorific value of nutrients

ENERGY

The body constantly needs energy. Not just to walk, run and undertake physical effort, but also just to breathe, pump blood, keep the heart beating and ensure the brain works properly.



Proteins, carbohydrates and fats are the nutrients that provide the body with this energy. We refer to them as the energy-containing nutrients. The energy needs of adults are judged to be about 2000 kilocalories a day.



Ideally, energy needs should be covered by about 50% carbohydrates, a third fats and the rest by proteins.

Nutrients	Calorific value
Proteins	4 kcal/g
Carbohydrates	4 kcal/g
Lipids	9 kcal/g

Energy nutrients do not all provide the same amount of kilocalories. Carbohydrates and proteins provide 4 kilocalories per gram while fats provide almost twice that amount. A gram of fat provides 9 kilocalories.

Nutrients which are not immediately used to meet our energy needs are stored as a reserve. Carbohydrates are stored in the liver and muscles, while lipids are stored in adipose tissue. The body needs these reserves for a very simple reason: While we continuously expend energy, we do not eat non-stop!

PHYSICAL ACTIVITY

The energy expended during physical activity is proportionate to the duration and intensity of the effort carried out.

Carbohydrates are used as a source of energy at the beginning of any effort, especially if it is intense. They can be exhausted after 2 to 3 hours of continuous, medium intensity exercise or of 30 minutes intense, brief, repetitive exercise.

Lipids take longer to activate but are also useful for physical activity alongside carbohydrates. They are called on to help more when effort is prolonged and of moderate intensity.

Proteins also provide energy but they primarily play a role in building the body.