Releasing Energy

How is digested food used by the body?

The body needs a constant supply of **energy** which comes from digested food.

Glucose, from digested carbohydrates, is an important substance that contains stored chemical energy.

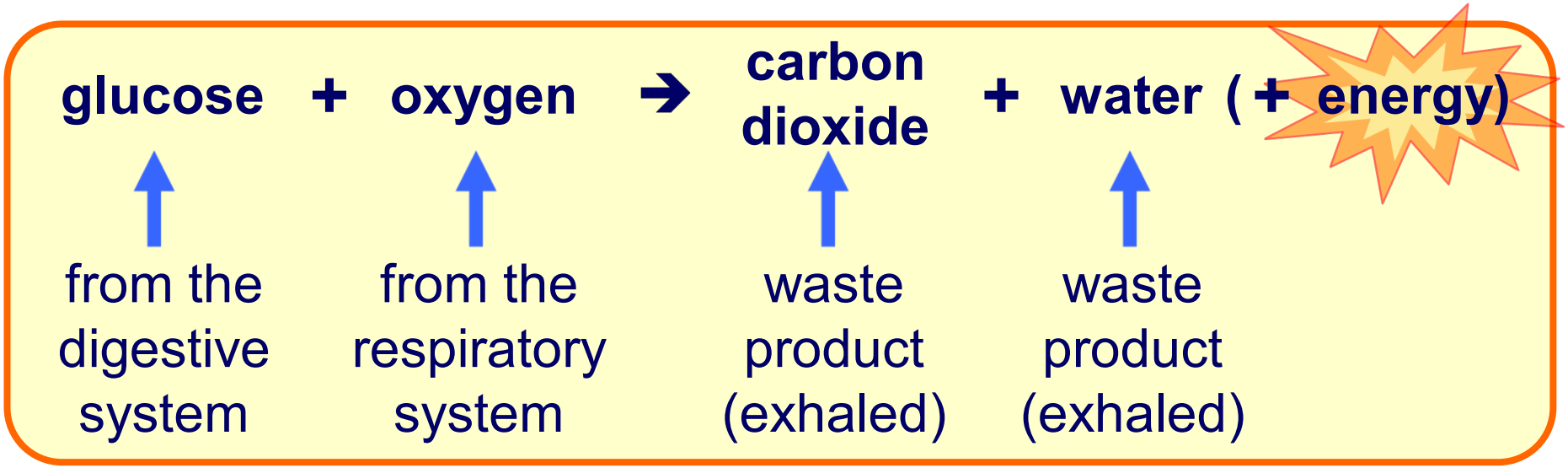
When glucose reacts with **oxygen**, a lot of energy is released.

In the body's cells, glucose and oxygen react to release energy. Some of this is released as heat and the rest is used by the cells.

What is the release of energy from glucose called?

What is respiration?

Respiration is the process that the body uses to release energy from digested food (glucose):



This type of respiration is called **aerobic** respiration because energy is released in the presence of **oxygen**.

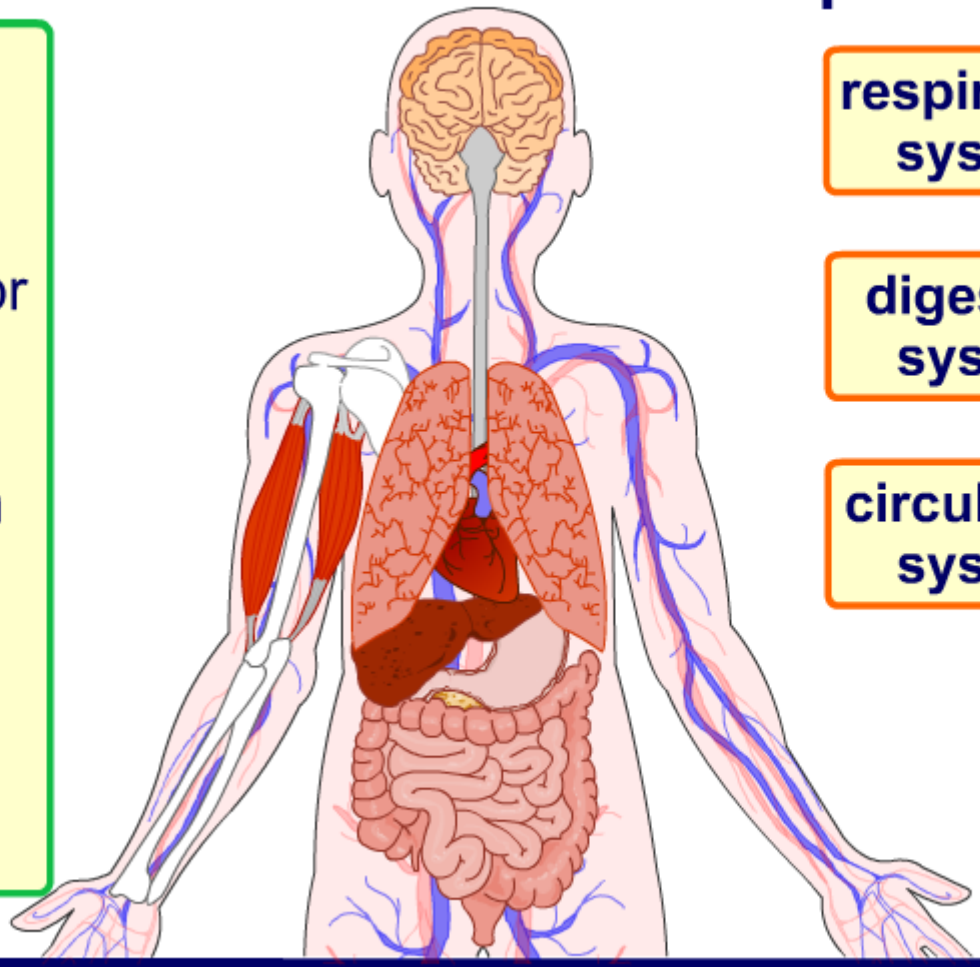
How do the glucose and oxygen needed for aerobic respiration get to the all the body's cells?

Testing for the products of respiration

How do cells get oxygen and glucose?

Which body systems are involved in respiration?

Click on a button for more information about each body system involved in respiration.



respiratory system

digestive system

circulatory system

The equation for aerobic respiration

What is the equation for aerobic respiration?

glucose | carbon dioxide | oxygen | energy | water

solve

Respiration and combustion

Burning is the reaction between a fuel and oxygen. This reaction is called **combustion**:

fuel + oxygen → carbon dioxide + water

During combustion, heat and light energy are released and carbon dioxide and water are also produced, so combustion is similar to respiration.

The difference between combustion and respiration is that combustion is not a controlled reaction. Respiration is a controlled reaction that slowly releases energy from food in the body's cells and the cells do not catch fire!

Respiration and combustion

What type of reaction do these statements relate to?

respiration	combustion

releases heat and light

solve