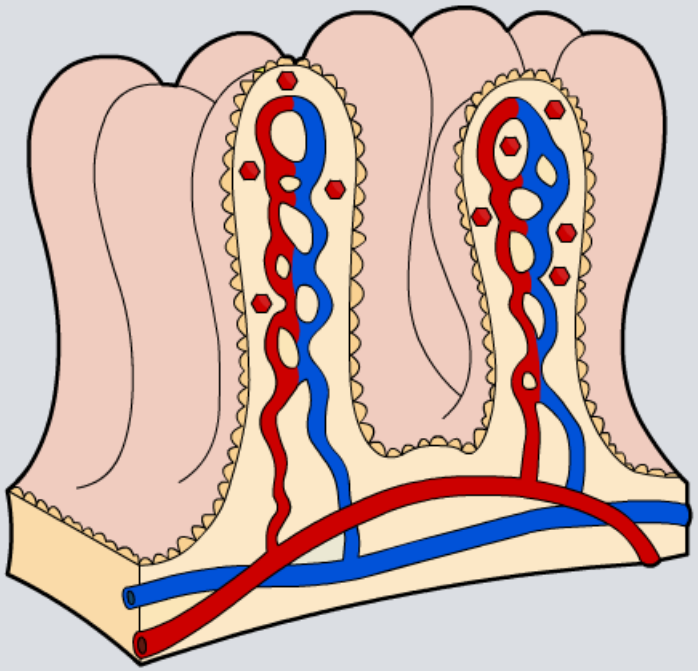
Active Transport

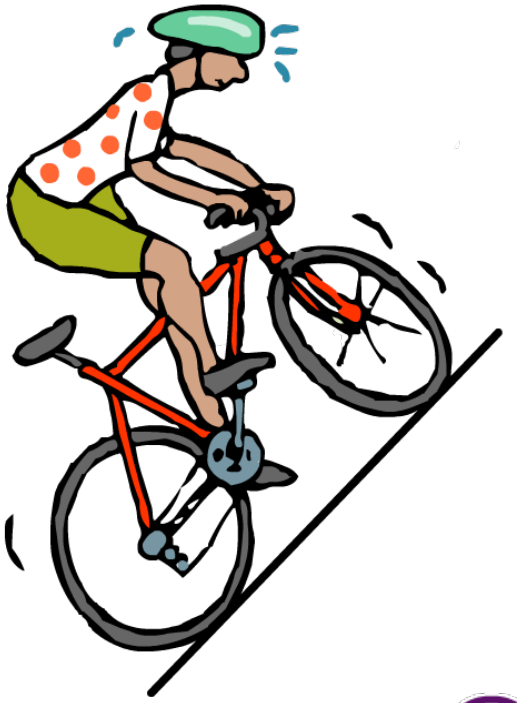


What is active transport?

Substances can move passively in and out of cells by diffusion until the concentration on both sides of the cell membrane reaches an **equilibrium**.

Substances can continue to move in and out of a cell using a process called **active transport**.

During active transport, protein carriers in the cell membrane 'pick up' particles and move them **against** the concentration gradient.



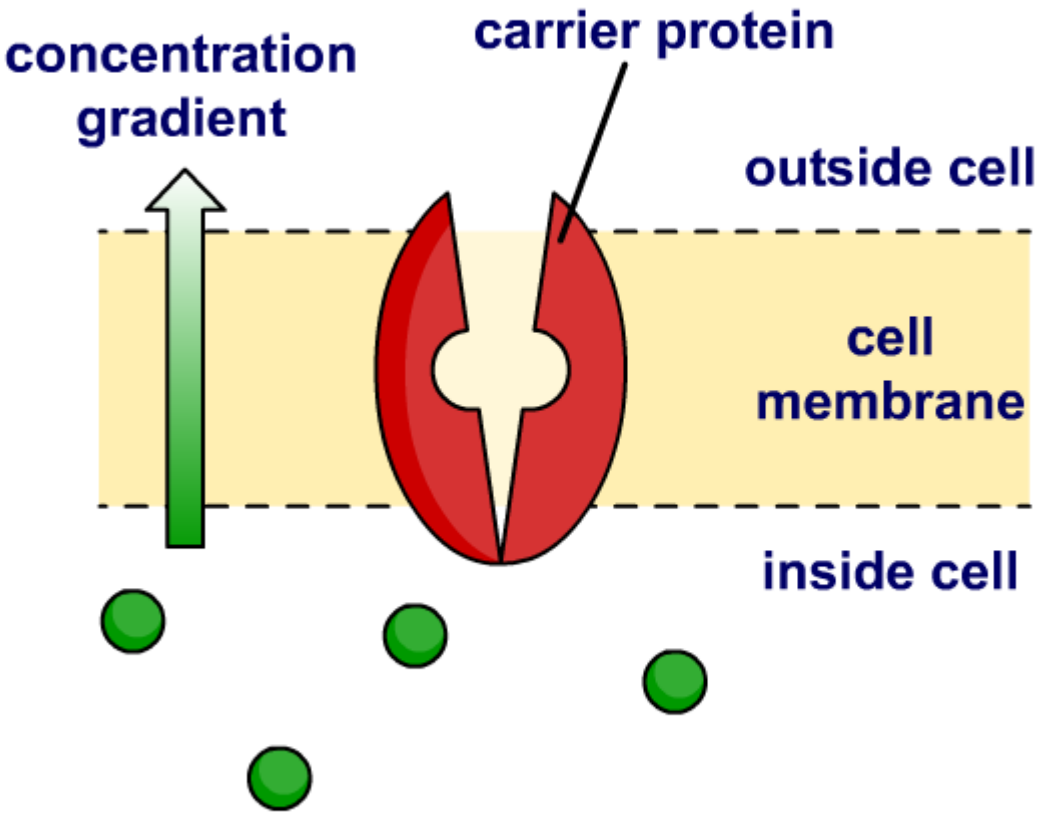
As the name suggests, active transport requires energy from the cell, which is made available by respiration.

What is active transport?

What happens during active transport?

During active transport, carrier proteins ‘pick up’ molecules and transport them across the cell membrane.

Click "**play**" to find out more.



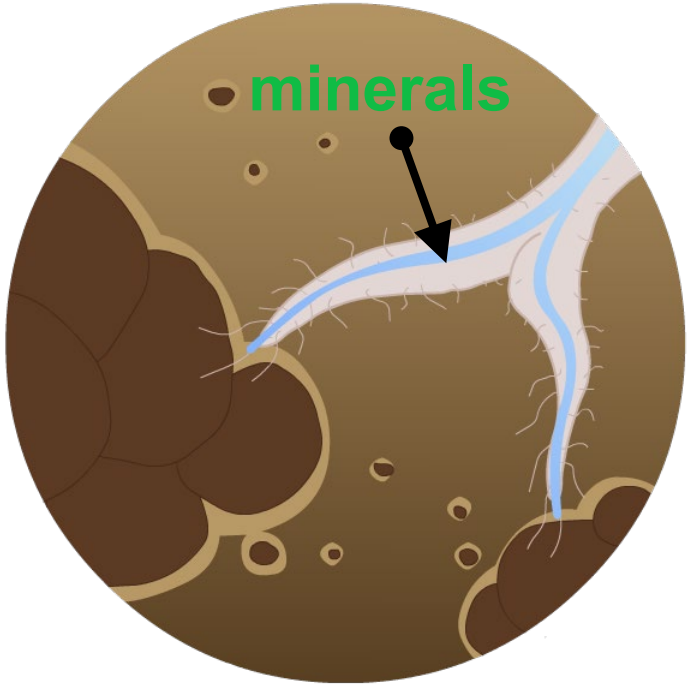
Active transport in plants

Plants need to absorb mineral elements such as nitrogen, phosphorus and potassium from the soil for healthy growth.

When the concentration of minerals in soil is lower than inside the plant, active transport is used to absorb the minerals against the concentration gradient.

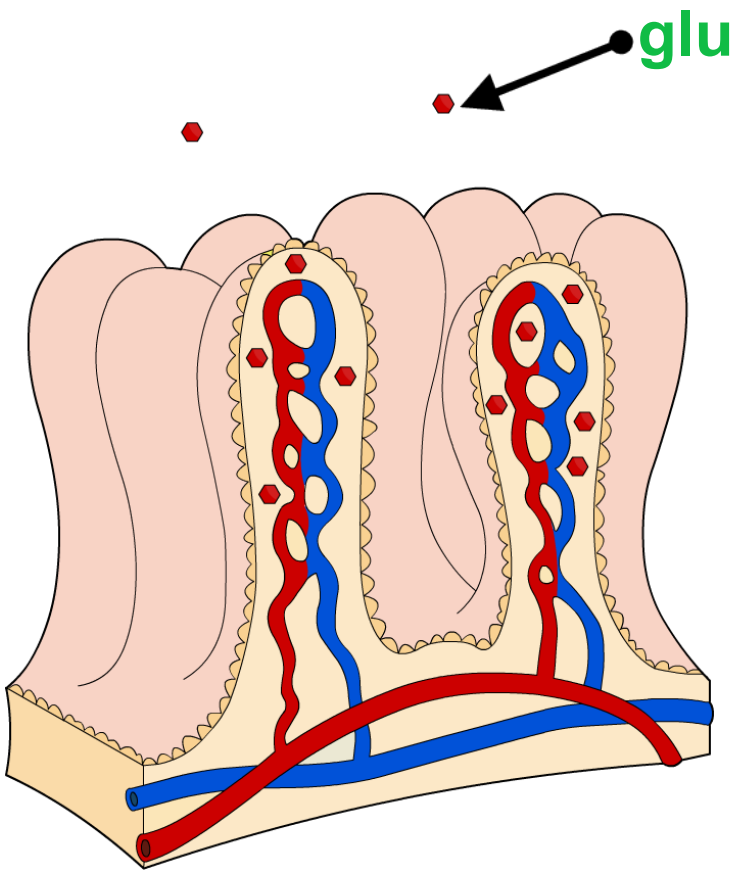
What would happen if the plant relied on diffusion to absorb minerals?

The cells would become drained of minerals because they would travel down the concentration gradient.



Active transport in humans

During digestion, the villi in the small intestine absorb the soluble nutrients. Over time, the concentration of nutrients in the villi reach an equilibrium with the concentration in the gut.



Active transport is used to continue the transport of the small amounts of remaining nutrients against the concentration gradient.