

# WJEC (Eduqas) Biology A-level

## Core Concept 3 - Cell Membranes and Transport

### Definitions and Concepts

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**Active transport** - The active movement of substances from a low concentration to a higher concentration (against the concentration gradient) with the use of energy in the form of ATP.

**Cholesterol** - A mostly hydrophobic molecule that sits in the hydrophobic portion of the membrane and regulates membrane fluidity.

**Cyanide** - A chemical compound that inhibits the production of ATP, preventing active transport.

**Endocytosis** - The bulk uptake of substances into a cell by invagination of the membrane to form a vesicle trapping the substances inside the cell with the use of energy in the form of ATP.

**Exocytosis** - The bulk transport of substances out of a cell via a vesicle that fuses with the plasma membrane using energy in the form of ATP.

**Facilitated diffusion** - The net movement of substances from a high concentration to a lower concentration (down their concentration gradient) through transport proteins without the use of energy.

**Fluid-mosaic model** - A model that describes membrane structure as a sea of mobile phospholipids studded with various proteins.

**Incipient plasmolysis** - The effect produced by placing plant cells in an isotonic solution causing the cell membrane to pull away from the cell wall in some areas; the cell is neither plasmolysed nor turgid.

**Integral membrane protein** - A type of protein bound to the membrane with strong interactions.

**Osmosis** - The passive diffusion of water molecules from a region of high water potential to a region of lower water potential (down a water potential gradient) through a selectively permeable membrane without the use of energy.

**Peripheral membrane protein** - A type of protein that is weakly bound to the surface of the membrane.

**Phagocytosis** - The ingestion of solid material (particularly pathogens and foreign material) by phagocytic cells.

**Pinocytosis** - The bulk uptake of liquids into the cell using energy in the form of ATP.

**Plasma membrane** - A semipermeable lipid bilayer studded with proteins that surrounds the cell and many organelles.

**Plasmolysis** - The effect produced by placing plant cells in a hypertonic solution causing the cell to shrivel from water loss, resulting in the membrane pulling away from the rigid cell wall.

**Simple diffusion** - The passive spreading out of substances from a high concentration to a lower concentration (down their concentration gradient) without the use of energy.



**Turgid** - A term used to describe a cell that is swollen due to large amounts of fluid uptake.

**Water potential** - A measure of the tendency of water molecules to move from one area to another measured in kilopascals (kPa) and given the symbol  $\Psi$ .

