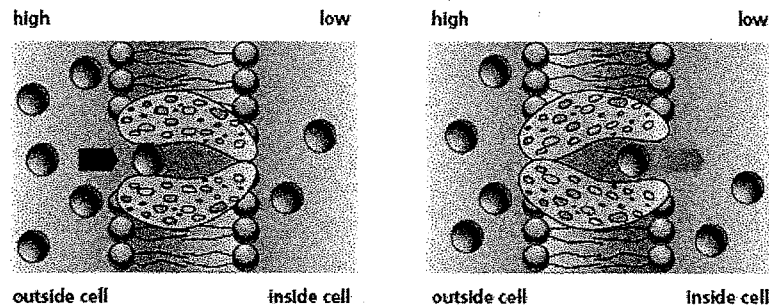


# Cell Transport Notes

The main function of the cell membrane is to help us maintain **homeostasis**. The cell membrane accomplishes this by regulating what enters and leaves the cell. There are 2 main types of cell transport: passive and active.

## Passive transport

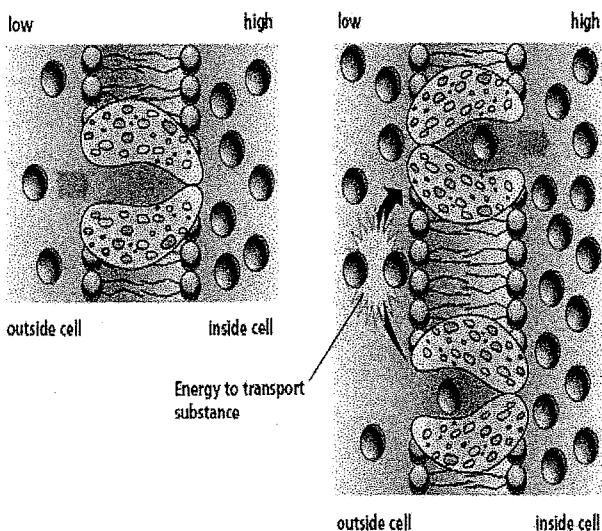
Passive transport requires no energy. Molecules simply pass through the membrane along their concentration gradient (from an area of high concentration to low concentration).



- **Diffusion**- a type of passive transport in which small hydrophobic molecules such as oxygen, carbon dioxide and hormones move across the membrane from a high concentration to a low concentration.
- **Osmosis**- a type of passive transport in which water moves across the membrane from a high concentration to a low concentration.
- **Facilitated diffusion**- a type of passive transport in which ions( $K^+$ ,  $Cl^-$ ,  $Na^+$ ), glucose, and amino acids pass through a protein channel in the membrane from an area of high concentration to an area of low concentration.

## Active transport

Active transport requires energy. Molecules need energy to move against their concentration gradients (from an area of low concentration to an area of high concentration).



- **endocytosis** – a type of active transport in which proteins and cholesterol bind to receptors on the plasma membrane and are taken into the cell via vesicle. Movement occurs against their concentration gradients (from low to high). Particles moved in this way include macromolecules (proteins, fats, carbohydrates, and nucleic acids).
- **Phagocytosis** – a type of active transport in which large solid particles are taken into the cell against their concentration gradient. This process is also known as “cell eating”.
- **Pinocytosis**- a type of active transport in which liquid molecules are taken into the cell against their concentration gradient. This process is also known as “cell drinking”.
- **Exocytosis**- a type of active transport in which metabolic wastes and hormones are excreted from the cell against their concentration gradient.