Movement of particles

Diffusion

Movement of particles from higher concentration to lower concentration is called diffusion

There are several types of diffusion

Types of diffusion

simple diffusion and facilitated diffusion

Simple diffusion

- **no help needed to move particles**
- **particles move directly by their own**
- **example is bacteria absorb water and nutrient by itself**

Facilitated diffusion

- **it needs help to career molecule such as proteins car and lipids**
- **example is transport across all cell membrane**

Factors affecting diffusion

- **Temperature, high temperature faster movement of particles it means faster the diffusion**
- **surface area, largest surface area so it means faster diffusion**
- **particles size, small molecules such as oxygen glucose amino acid water they diffuse very easily**

- large molecules, such as proteins carbohydrates cannot diffuse directly

Osmosis

Movement of water molecules from a solution with low solute concentration to high solute concentration through a semi permeable membrane

- Solute is like salt sugar sand this is basically solute
- Solvent is like water

Osmosis is the movement of water molecules from dilute solution like low solute and it has high water to a concentrated solution means a solution which has high salute

Types of osmotic solutions

isotonic solution

hypotonic solution

hyper tonic solution

Isotonic solution

it has lower solute concentration outside than inside the cell

water moves into the cell and then cell swells and it may burst in animals and become turgid in plants

Hypertonic solution

low solute concentration outside than inside the cell

water moves out of the cell and cells shrinks

Hypotonic solution

in hypotonic solution higher solute inside the cell and water moves in and cells well

Active transport

Movement of molecules from lower concentration to higher concentration against the gradient using energy is called active transport

Example in human and plants

- **in plants root hair cells absorbs Minerals and waters from the soil using ATP**
- **in any in humans glucose taken in from the gut and kidney tubules using ATP**