Department of Anesthesia Techniques
{Biology}
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THE OSMOSIS

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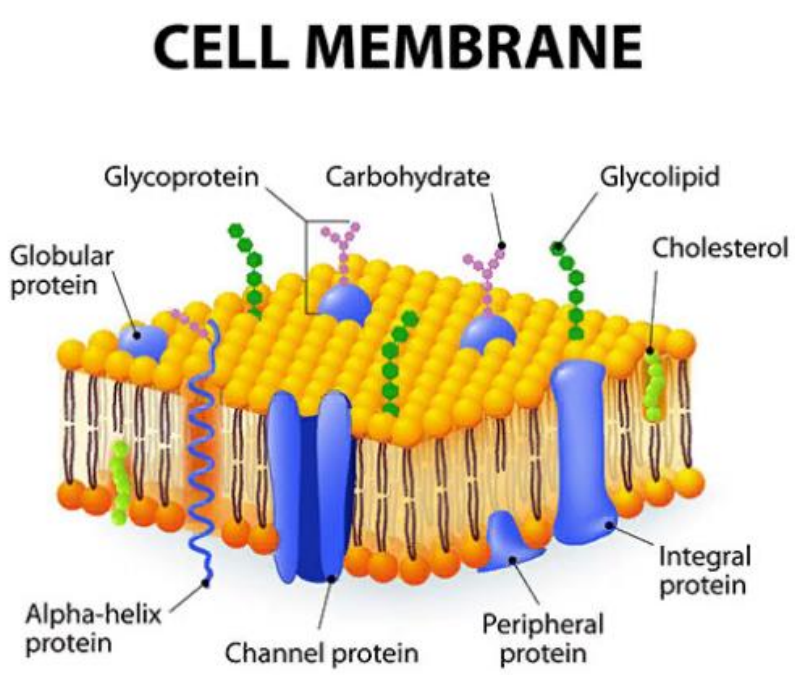

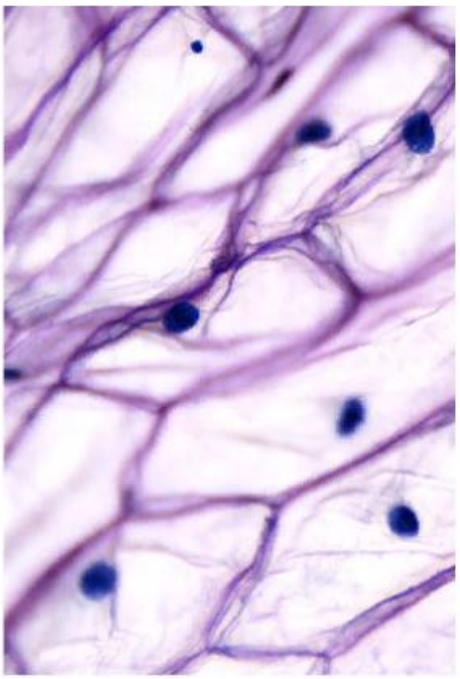

Functions of Membranes

1. Cell protection .

2. Control incoming and outgoing substances .

3. Maintain ion concentrations of various substances .

4. Selectively permeable - allows some molecules in, others are kept out .

Methods of Transport Across Membranes

1. Diffusion :- passive transport - no energy expended .

2. Osmosis :- Passive transport of water across membrane .

3. Facilitated Diffusion :- Use of proteins to carry polar molecules or ions across .

4. Active Transport :- requires energy to transport molecules against a concentration gradient – energy is in the form of ATP .

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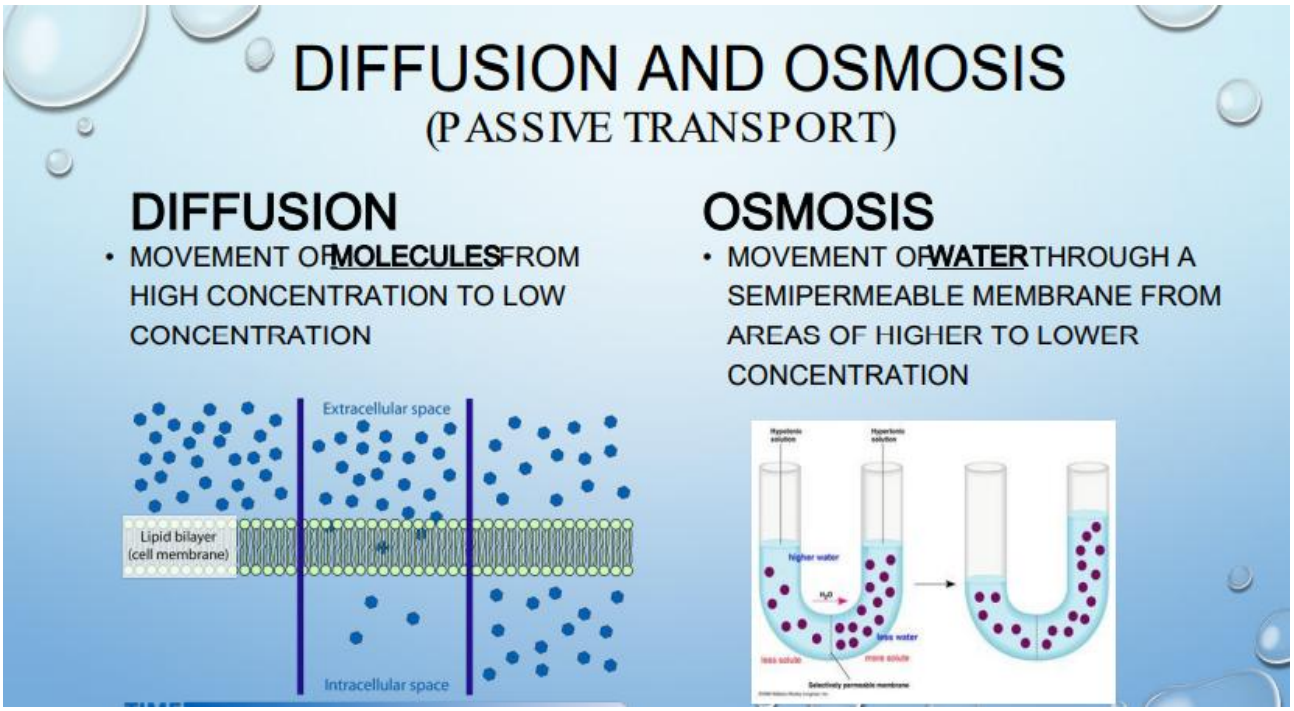
Diffusion is the net passive movement of particles (atoms, ions or molecules) from a region in higher concentration to regions of lower concentration. It continues until the concentration of substances is uniform throughout.

Osmosis: Osmosis is the movement of solvent particles across a semipermeable membrane from a dilute solution into a concentrated solution. The solvent moves to dilute the concentrated solution and equalize the concentration on both sides of the membrane.



A partially permeable membrane (sometimes called a selectively permeable membrane) only allows certain molecules or ions to cross it

the higher concentration of water molecules to the left of the partially permeable membrane makes it likely that a large number of water molecules will collide with the membrane and pass through it.

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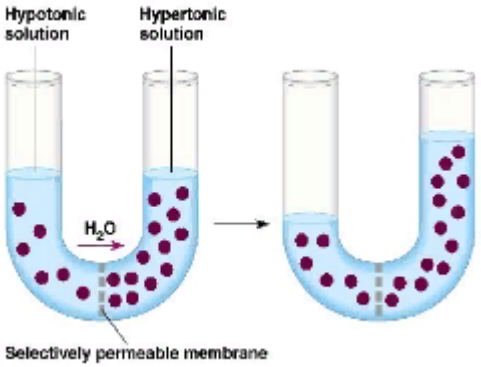
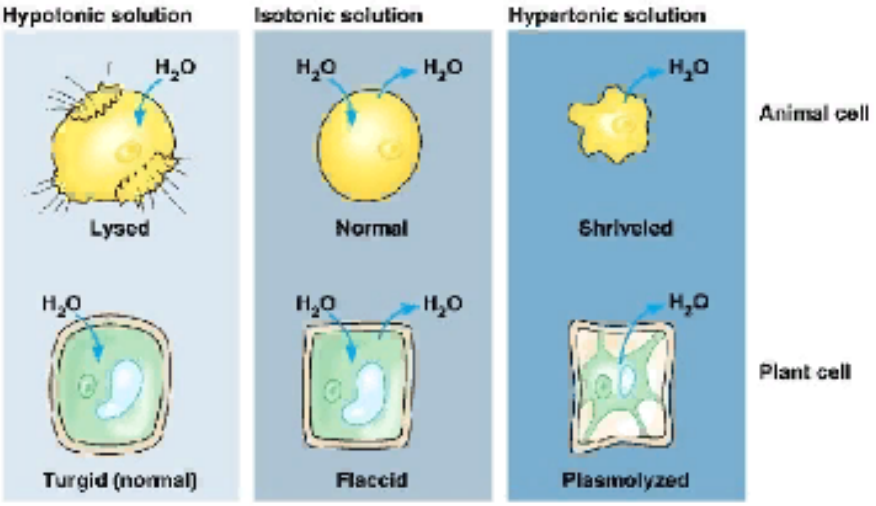


Osmosis, Water Movement of water from high to low concentration. 3 types of solutions: solution with the higher concentration of solutes is hypertonic. n solution with the lower concentration of solutes is hypotonic. Solutions with equal solute concentrations are isotonic direction of osmosis is determined only by a difference in total solute concentration



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