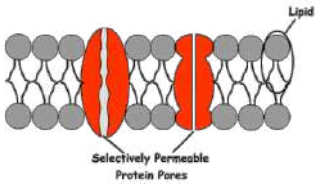
Cell Membrane



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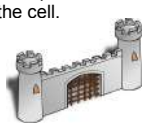
How do cells maintain homeostasis?

- The cell membrane is selectively permeable as it allows certain materials in and out of the cell as needed to maintain homeostasis or balance.
- Example: The cell membrane uses active and passive transport to move materials in and out of the cell.



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What is Active transport?

- The movement of materials from **low to high** concentration which **requires energy** to transport materials.
- Example: endocytosis and exocytosis

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What are the two types of active transport?

Endocytosis and Exocytosis

Example: Entrance and Exit Signs

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What is endocytosis?

Process that moves materials **into a cell**

Example: Example: Amoebas feeding

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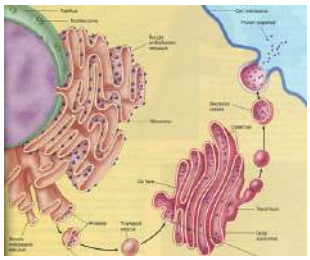
What is exocytosis?

- Exocytosis is the process of transporting substances out of the cell that are too large to pass through the membrane.
- Example: The export of packaged proteins out of the cell. The ribosome makes proteins which the golgi pick up to form a form a bubble or vesicle. These vesicles move to the membrane, fuse with it, and release the protein from the cell.



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What is Passive Transport?

- This movement from an area of higher to lesser concentration is called passive transport which does not require energy to transport materials.
- Examples: Diffusion and Osmosis

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What is Diffusion?

- THE MOVEMENT OF MOLECULES FROM AN AREA OF HIGHER CONCENTRATION TO AN AREA OF LOWER CONCENTRATIONS.
- Diffusion is driven by the KINETIC ENERGY the molecules possess

Example: Beaker with ink added

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What is osmosis?

- This diffusion of water through a cell's selectively permeable membrane is termed osmosis.
- Example: Cells of a plant that are drying out (a) will absorb water from the soil when it rains or plants are watered

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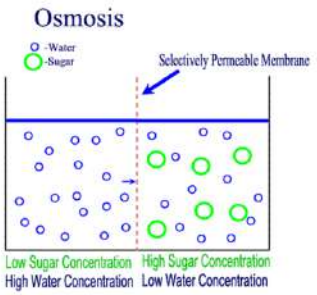

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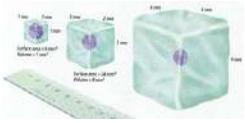
Why are smaller cells better?

- Can move materials in and out of the cell more efficiently
- Example: Large cells need to divide by mitosis to make smaller cells to be better at transporting stuff



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What are the three types of solutions?

- hypotonic = low solute
- hypertonic = high solute
- isotonic = equal solute

- Example: Solutions are named by comparison with another solution across a membrane)

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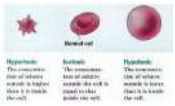
Compare the types of solutions using osmosis



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