Unit 2: Cells & Histology
A&P Chapter 3.2, Bio 7-3

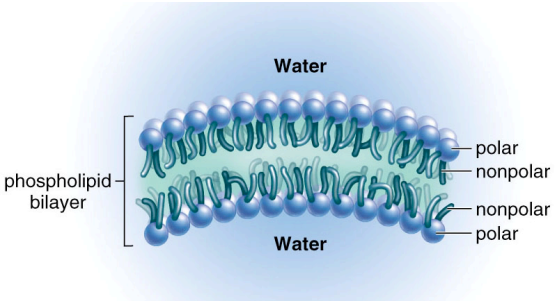
Movement Across the Cell Membrane

A. Cell Membrane

- Cell Membranes surround ALL cells!
- Controls what molecules _____
  - food and oxygen molecules must enter the cell
  - waste products need to be released
- SEMIPERMEABLE – _____

B. Structure of Cell Membrane

- Phospholipid bilayer
- Polar heads "_____" water (_____)
- Nonpolar tails "_____" water (_____)



C. Fluid Mosaic Model

- Describes the _____ found in the _____
- Example:
  - _____: _____ and _____ to move materials across membranes
  - _____: act like identification cards so cells can identify one another

D. Transport Across a Membrane

- Molecules can enter or leave the cell in 2 ways:

1. _____

* Diffusion
* Carrier-Facilitated ("helped") Diffusion
* Osmosis

2. _____

* Protein Pump
* Endocytosis
* Exocytosis

1. Passive Transport

- _____ across the membrane to occur
- Molecules move from area of _____ to area of _____
- Example: Like riding a bike downhill

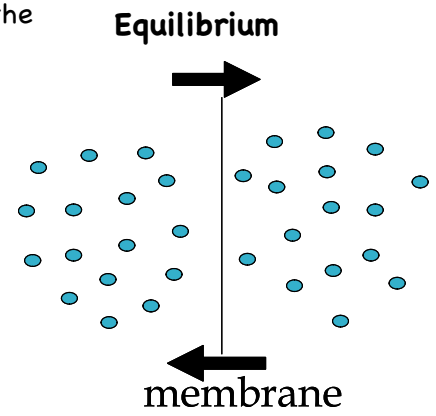
Unit 2: Cells & Histology
A&P Chapter 3.2, Bio 7-3

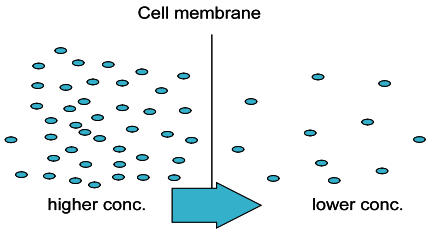
▸Two factors determine if passive transport takes place, _____ and _____

- **Equilibrium:** when the _____ on both sides of the membrane are _____

- **Permeability**: ability of a molecule to _____ (move) _____

  * _____: molecules that cannot pass across a membrane
  * *semi-permeable/selective permeability*: Some molecules can pass across the membrane while other molecules cannot





a. Diffusion

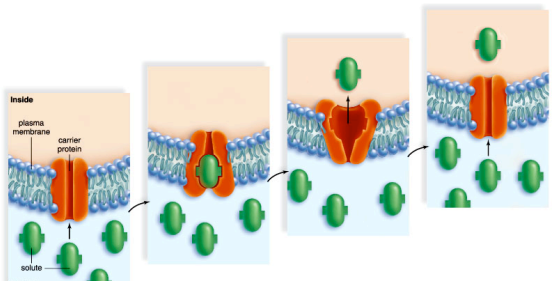
▸Molecules moving from area of _____ _____ to area of _____

▸_____ is required

b. Carrier-Facilitated Diffusion

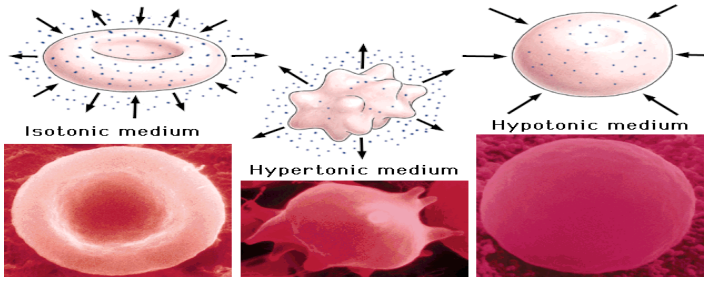
▸_____ required

▸Molecules "_____" across by _____ from _____ concentration



c. Osmosis

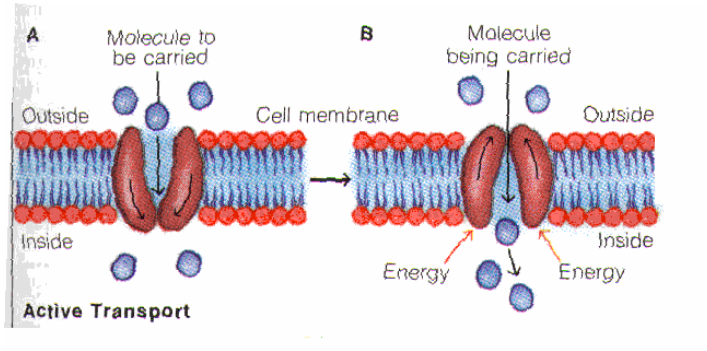
▸Osmosis is a special type of diffusion
The _____ through a selectively permeable membrane

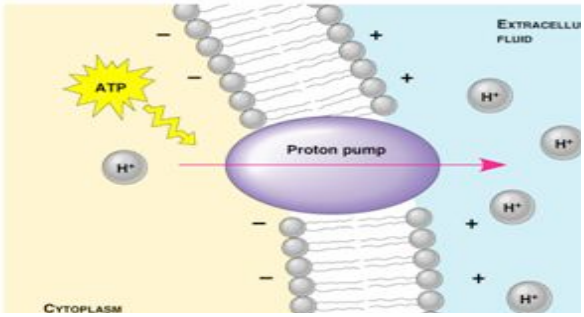


ISOTONIC	HYPERTONIC	HYPOTONIC
▸_____ of solutes (dissolved substance) is the _____ in and out of the cell ▸Equal amount of water leaving and entering cell	▸Solution has a _____ _____ than the inside of cell ▸More water _____ cell, causing cell to _____	▸Solution has a _____ _____ __ than the inside of cell ▸More water _____ cell, causing cell to _____ (get big)

2. Active TransPort

- _____ for molecules to pass across
  - _____ – the "battery" of the cell
  - Breaking a bond in ATP releases energy
  - Can "_____" molecules from _____ (against concentration gradient)
- Example: Like riding a bike uphill



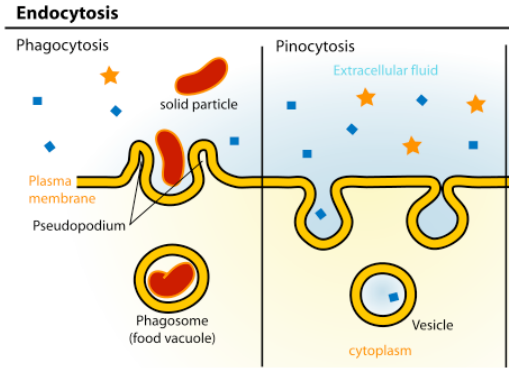


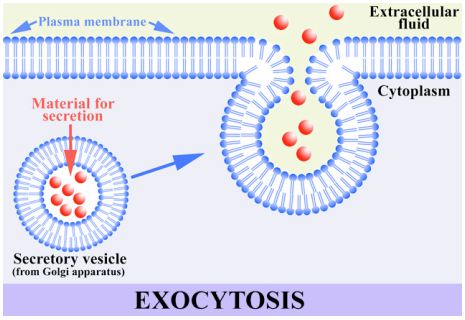
a. Protein Pump

- Protein Pumps: cell membrane _____ and _____ molecule through
  - _____

b. Endocytosis

- Endocytosis: cell membrane _____ _____ bring it into the cell
- Two types:
  - _____: cytoplasm surrounds a _____ and packages it in a food _____
  - _____: cell membrane forms pockets filled with _____ and pinch off to form _____ in a cell





c. Exocytosis

- _____: The membrane of the vacuole surrounding the material fuses with the cell membrane, _____ _____