Transport in the Cell

Passive and Active
Passive Transport

- There are three types of passive transport
- 1. Simple Diffusion
- 2. Facilitated Diffusion
- 3. Osmosis
Simple Diffusion

Movement of particles from an area of high concentration to an area of low concentration.
Simple Diffusion

* Concentration gradient - difference in concentration between two areas
Simple Diffusion

* Doesn’t require any energy

* When diffusion ends, it is called Dynamic Equilibrium
Simple Diffusion

* Cell membranes are *selectively permeable* - only certain substances can pass through by diffusion.
Simple Diffusion

- Water, oxygen and carbon dioxide pass through the membrane freely
- Ions (charged molecules) and large molecules can’t get through
Facilitated Diffusion

* Cell membranes of carrier proteins that help large charged molecules get through
Osmosis

* Net movement of water across a selectively permeable membrane
Osmosis

- Isotonic Solution – equal solute concentration
- No osmosis
Osmosis

- Hypertonic Solution – high concentration of solute
- Water moves out
Osmosis

- **Hypotonic Solution** – lower concentration of solute
- **Water moves in**
Who Cares?

* Hemolysis – bursting of the red blood cells
  * Too much water in the cells can be fatal
* Crenation – shrinking of blood cells
  * Too little water in the cells can also be fatal