Transport in the Cell

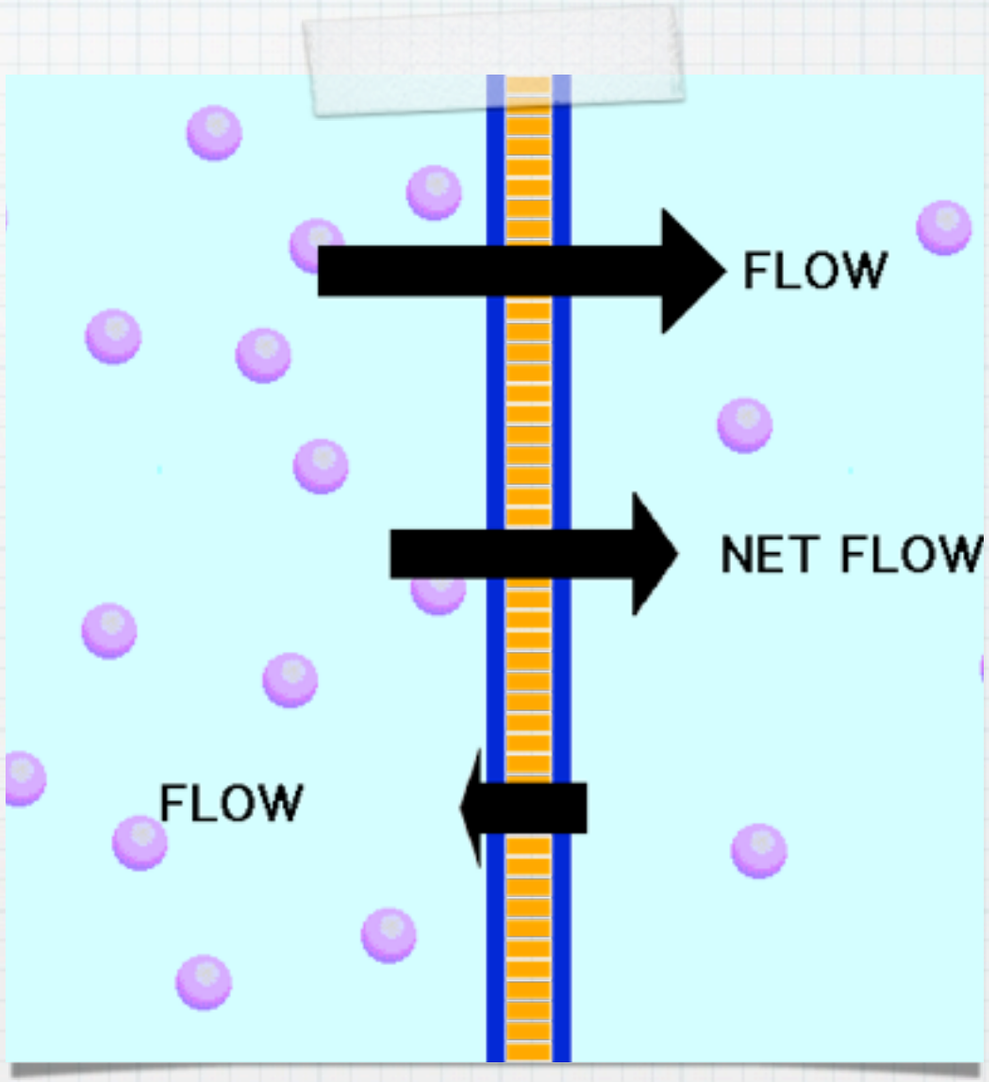
Passive and Active

Passive Transport

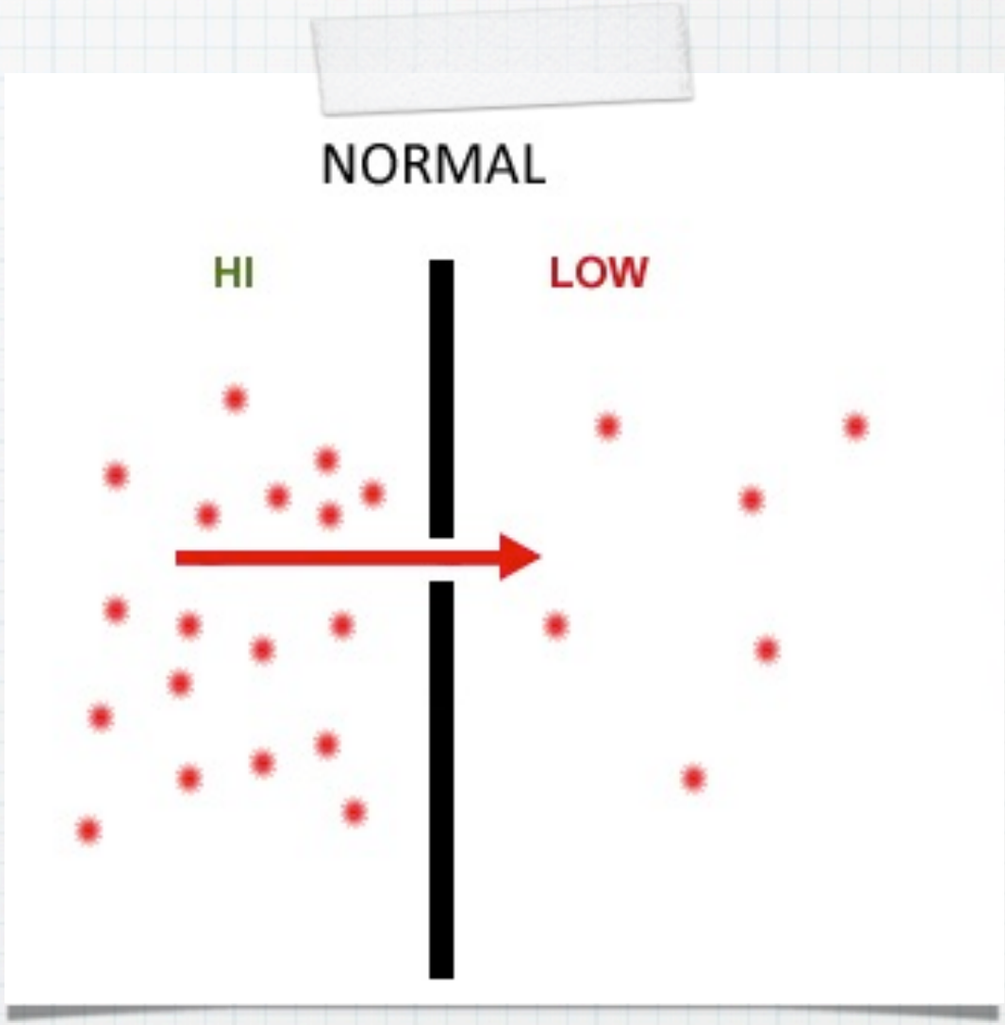
* There are three types of passive transport
  * 1. Simple Diffusion
  * 2. Facilitated Diffusion
  * 3. Osmosis

Simple Diffusion

* Movement of particles from an area of high concentration to an area of low concentration



Simple Diffusion

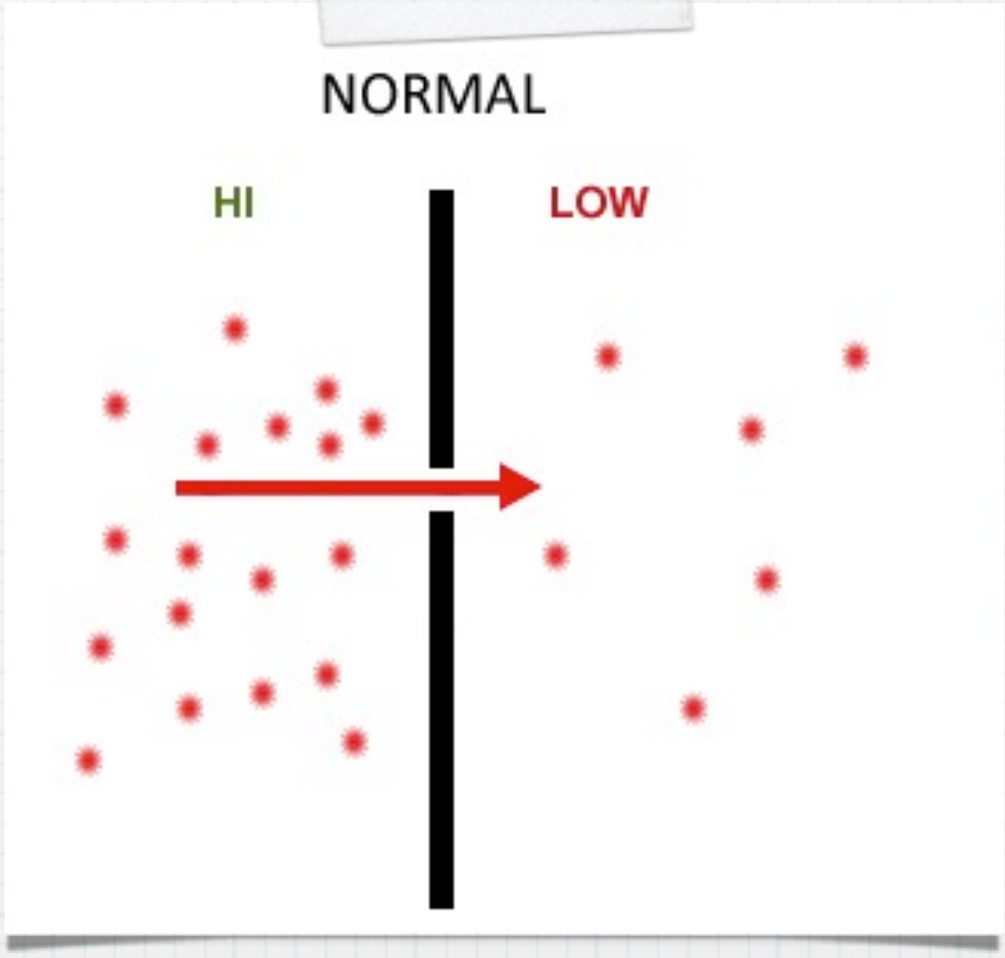


* Concentration gradient - difference in concentration between two areas

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

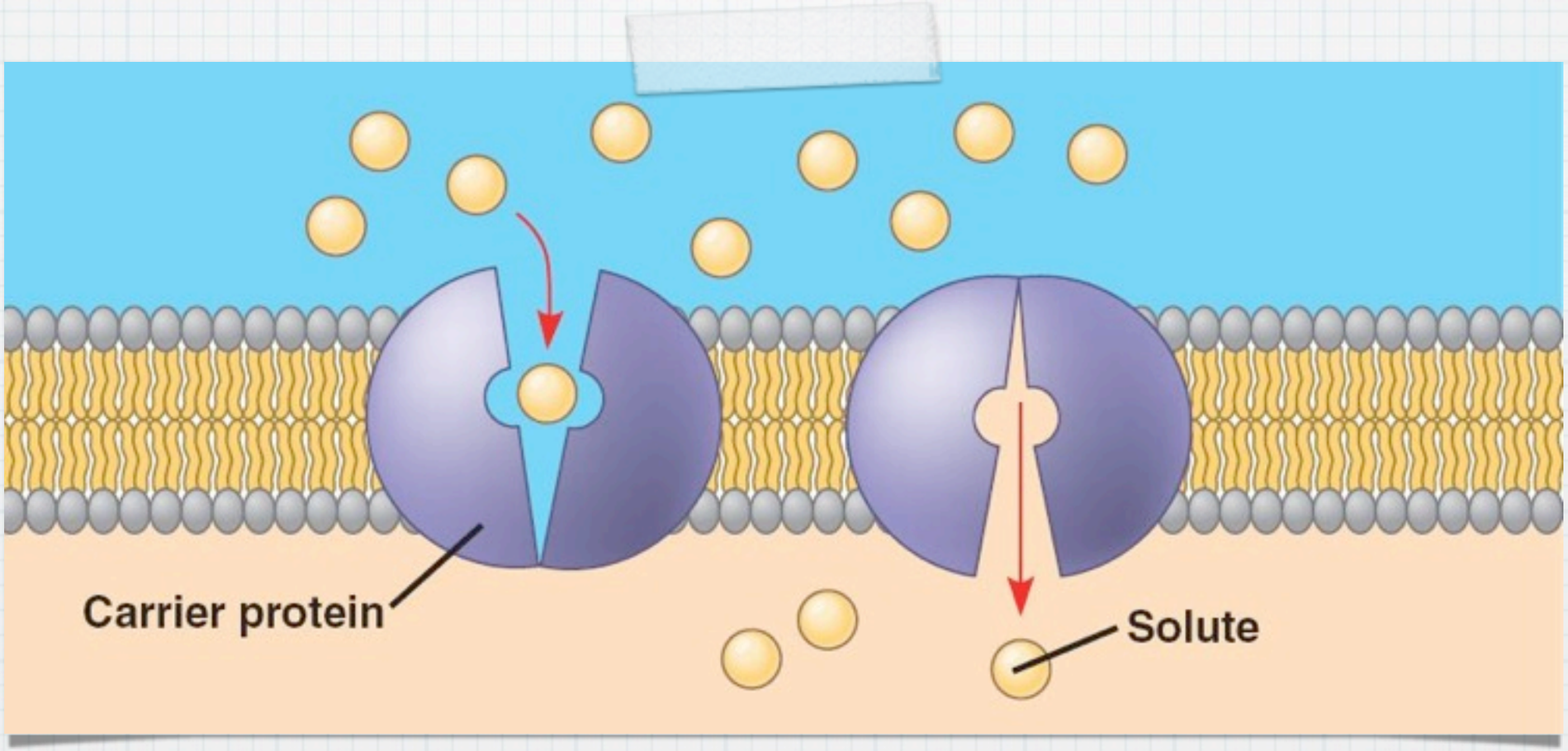
Simple Diffusion

* Water, oxygen and carbon dioxide pass through the membrane freely

* Ions (charged molecules) and large molecules can't get through

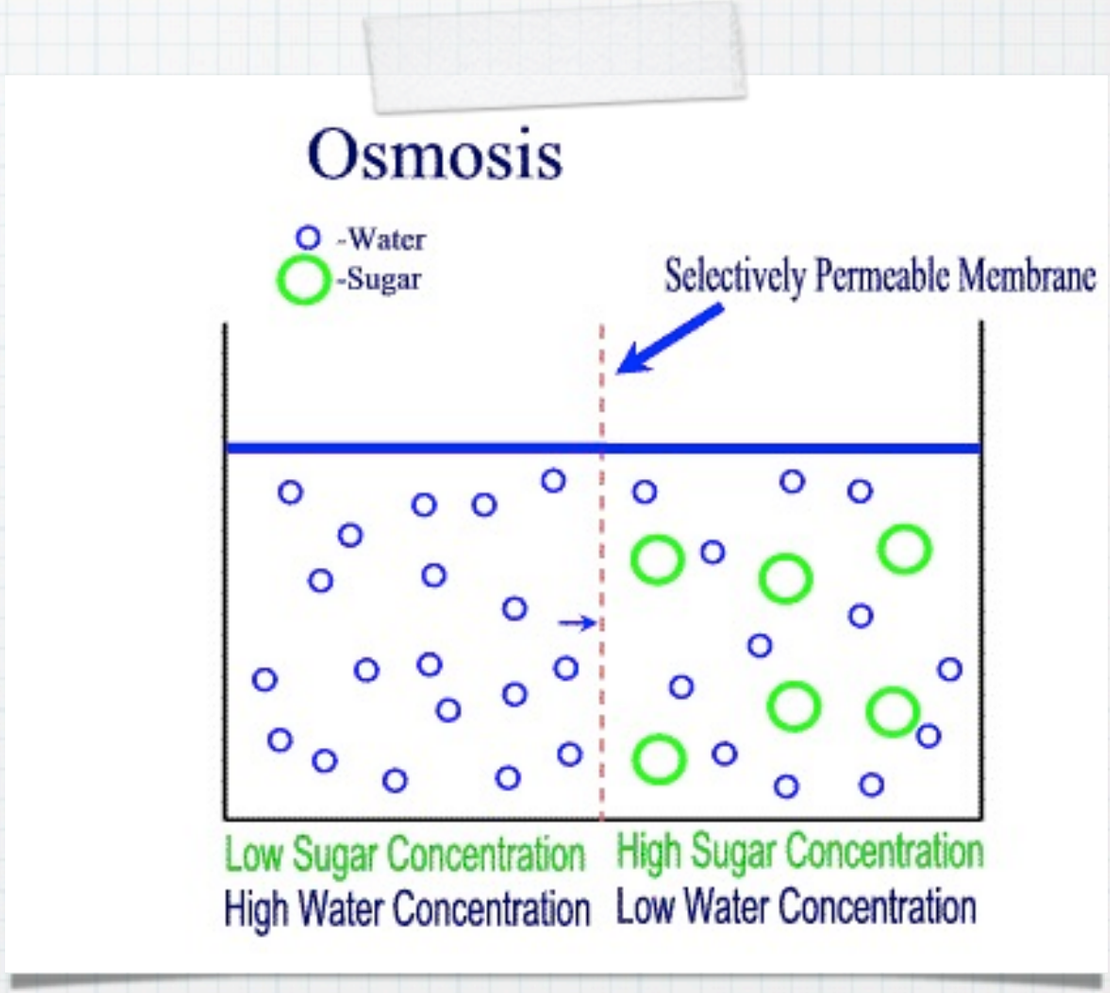
Facilitated Diffusion

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



Osmosis

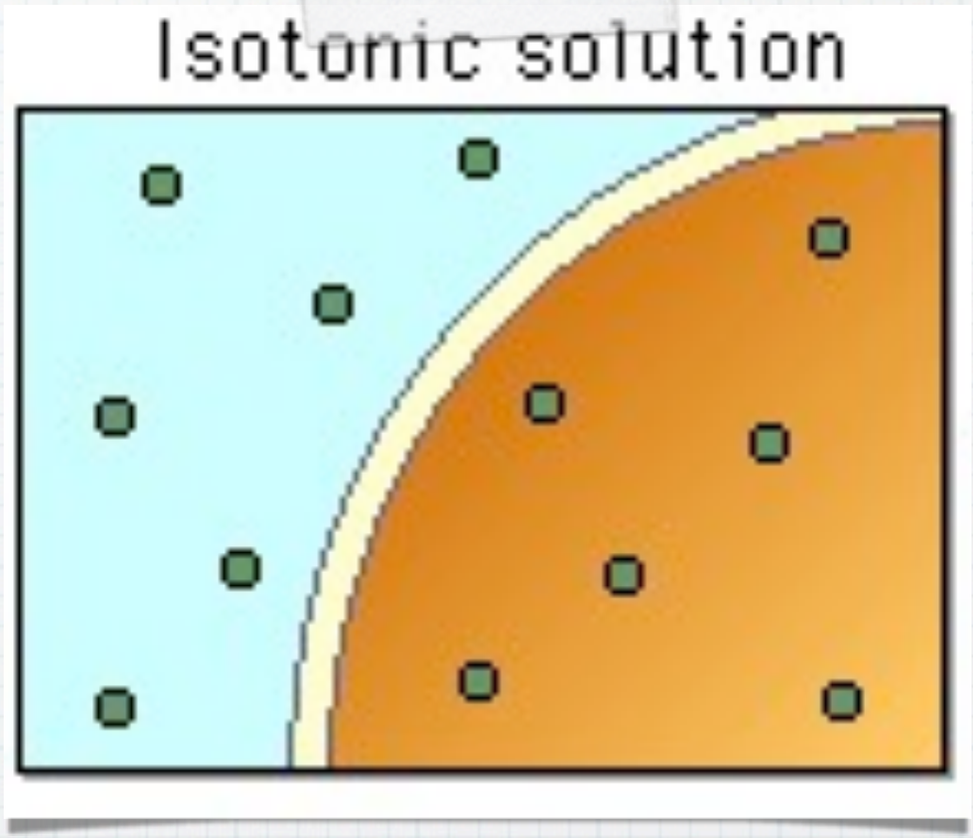
* Net movement of water across a selectively permeable membrane



Osmosis

* Isotonic Solution – equal solute concentration

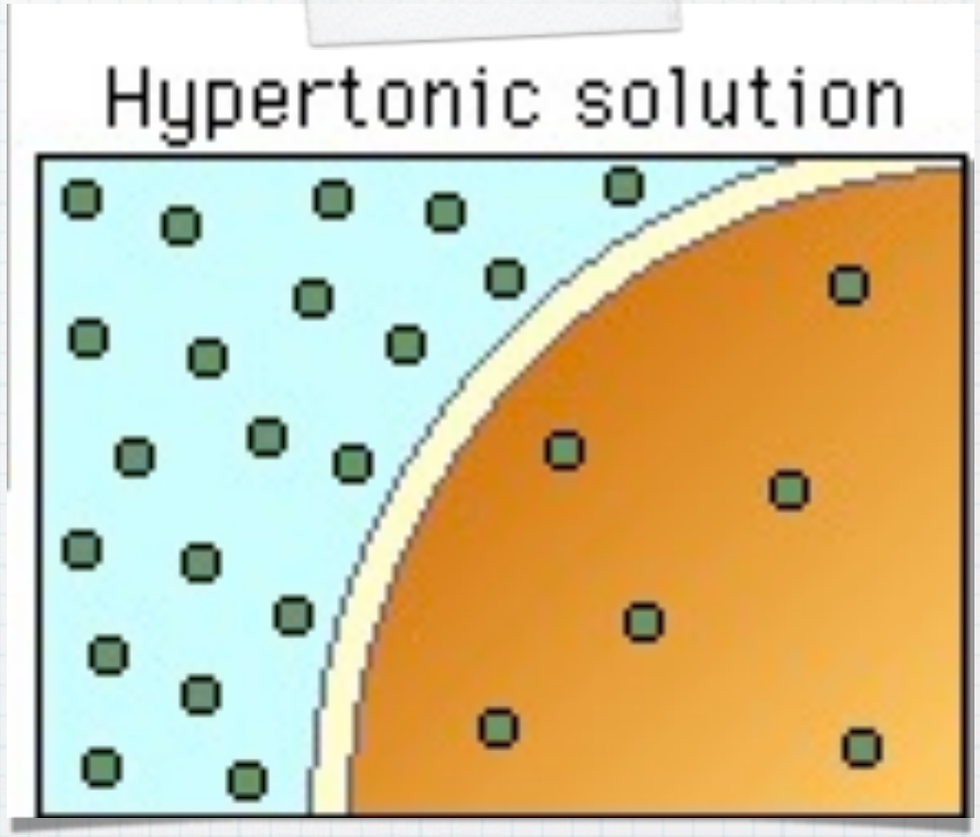
* No osmosis



Osmosis

* Hypertonic Solution – high concentration of solute

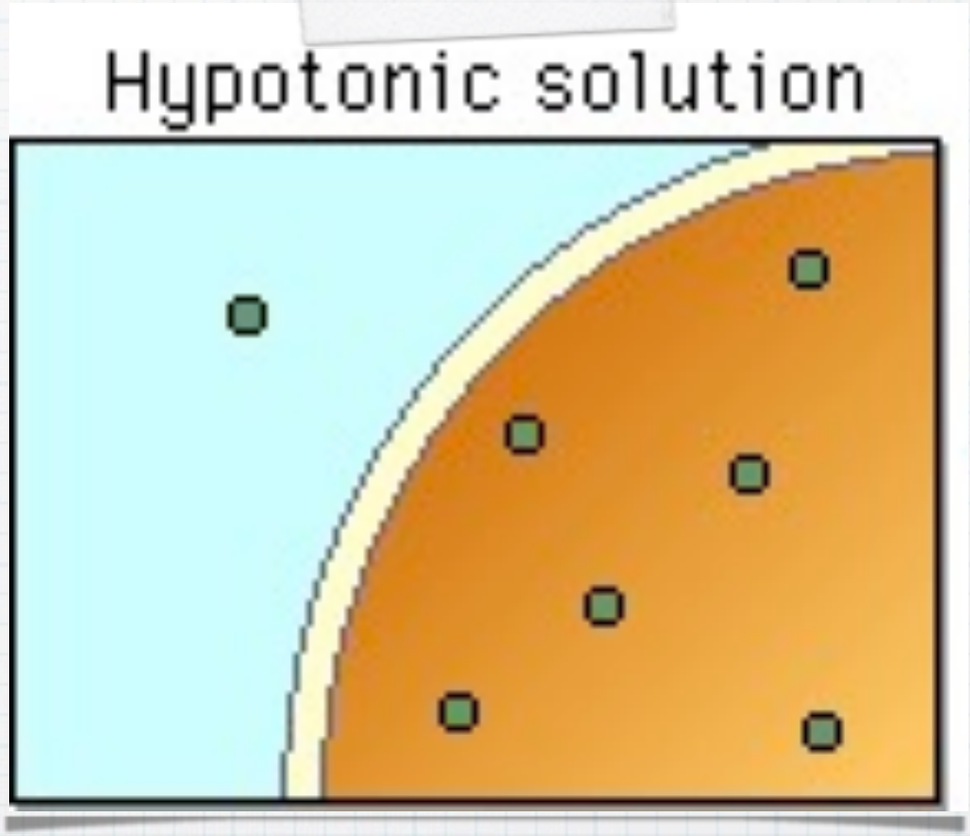
* Water moves out



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