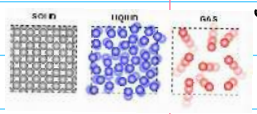
Osmosis & Diffusion

A QUICK REVIEW of P.Mom (PARTICLE MODEL of MATTER)

#1 - All Matter = tiny Particles
- More Particles in a volume of solid than in the same volume of gas

#2 - The tiny Particles are ALWAYS moving/vibrating



Solids = Wiggle in place

Liquids = Particles are sliding around/over each other.

Gases = Moving as far as the space allows

#3 - Particles may be attracted to each other or bonded together.
- Some have stronger attractions than others

#4 - Particles have space between them

LESS SPACE ← SOLIDS — LIQUIDS — GASSES → MORE SPACE

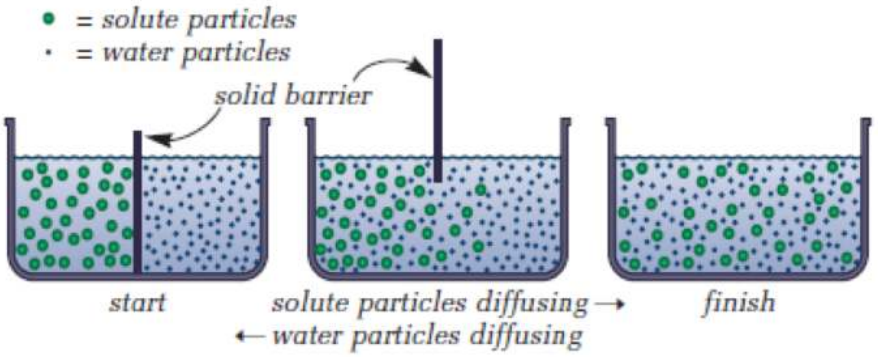


- All Particles are in constant motion, colliding & changing directions
- Particles concentrated in an area spread into areas of lower concentration



this "spreading out" is called **Diffusion.**

- Diffusion always moves from an area of **high concentration** → **low concentration**

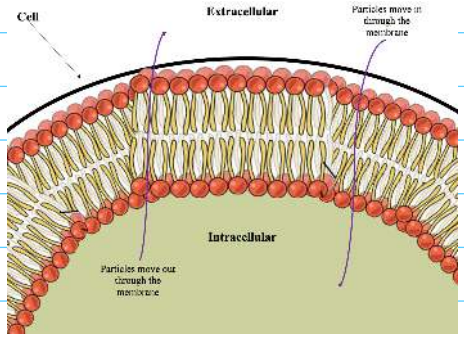


Diffusion in CELLS

→ SUBSTANCES MOVE IN/OUT of A CELL THROUGH Diffusion.

→ CELL MEMBRANE ACTS LIKE A FILTER w/ EXTREMELY SMALL OPENINGS FOR PARTICLES to PASS THROUGH.

SELECTIVELY PERMEABLE (allows SOME, NOT all)



Osmosis in CELLS

- H_2O is ±70% of A CELLS CONTENTS
  - → it is CRITICAL → NO H_2O, NO CELL.
- OSMOSIS is the diffusion of WATER

OSMOSIS —— Diffusion

MOVEMENT of WATER — MOVEMENT of PARTICLES

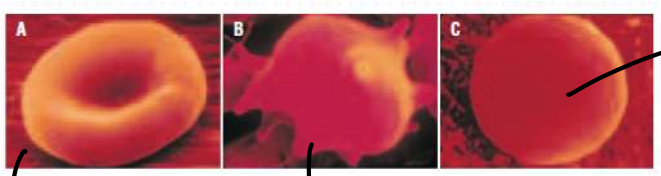
BOTH WORK the SAME. MOVING from AREA of HIGH CONCENTRATION → LOW CONCENTRATION

HOMEOSTASIS → A BIOLOGICAL STATE of EQUILIBRIUM

↳ FOR A CELL... this MEANS A BALANCE of different SUBSTANCES that MAKE A CELL HEALTHY.

↳ FOR HUMANS... HOMEOSTASIS = STEADY REGULATION of things like TEMPERATURE & FLUIDS.

OSMOSIS in A BLOOD CELL:



→ SWOLLEN BL. CELL in SOLUTION of PURE WATER.

NORMAL
Concentr. of H_2O is EQUAL in/outside of BLOOD CELL

SHRUNKEN BL. CELL
in SOLUTION of SALT WATER