

**Introduction**

The cell membrane needs to be selectively permeable to maintain homeostasis

The cell moves stuff across its membrane in 2 basic ways:

1. passive transport does not use energy

- Caused by diffusion - random moving/spreading out of particles
- Molecules move from high to low concentration

- A difference in concentrations is called a

concentration gradient

- So, molecules move down concentration gradient

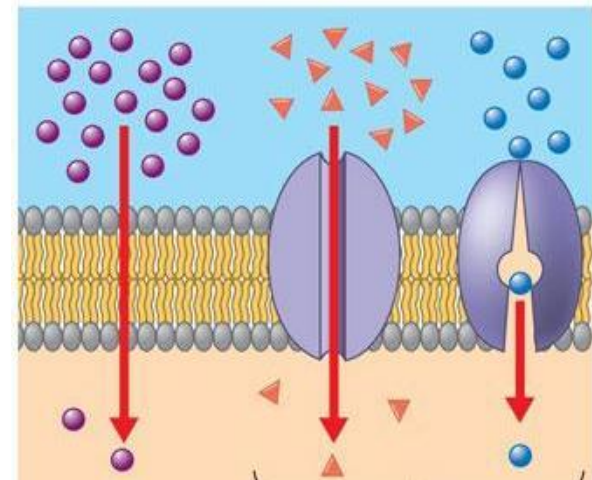
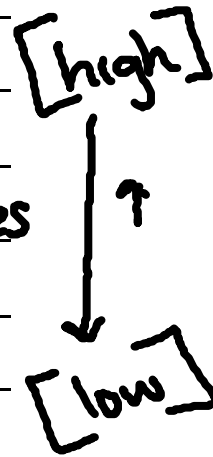
- Results in dynamic equilibrium - still moving equally in both directions

2. active transport does use energy (ATP)

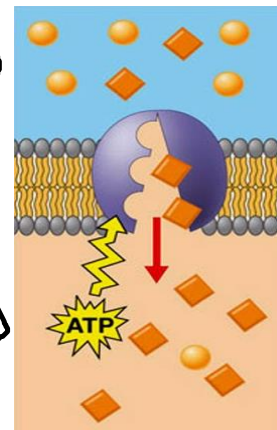
- Molecules move from low to high concentration:

- So, molecules move up gradient

- Results in maintain/increasing gradient



difference gradient



| Name                  | What types of molecules are moved? | Up or down the concentration gradient? | Passive transport? | Energy required? | Channel proteins? | Picture |
|-----------------------|------------------------------------|--|--------------------|------------------|-------------------|---------|
| Simple Diffusion      |                                    |  |                    |                  |                   |         |
| Facilitated Diffusion |                                    |  |                    |                  |                   |         |
| Osmosis               |                                    |  |                    |                  |                   |         |
| Active Transport      |                                    |  |                    |                  |                   |         |