

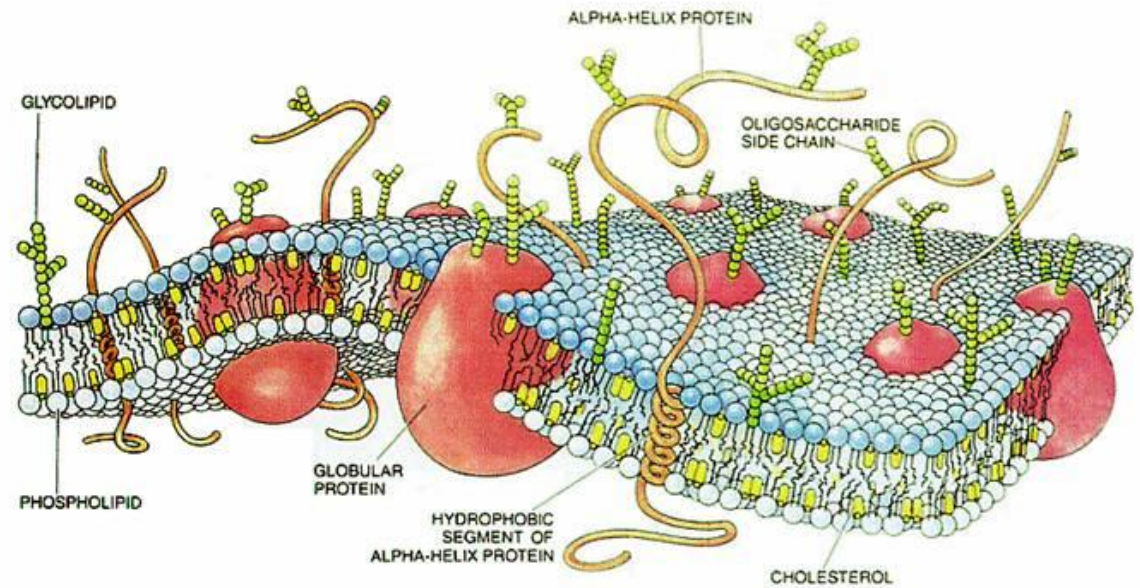
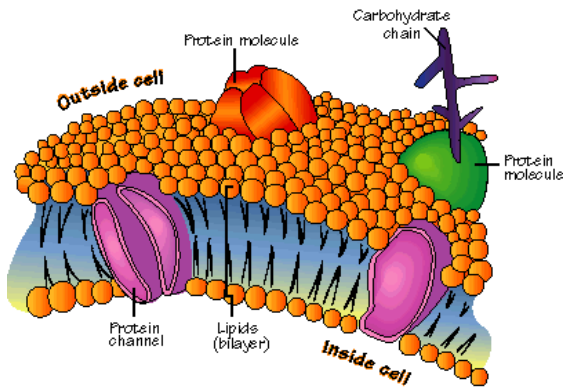
Plasma Membranes - Homework

- Spot the mistakes - Review!
- Vocabulary - Peer Mark



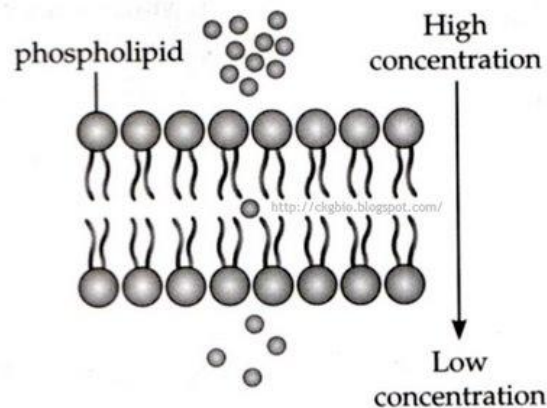
- Website: www.msjoconnor.weebly.com
- Password: Apis

Homework, tasks revision materials....



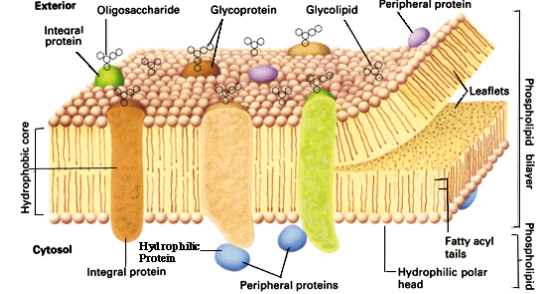
Passive Transport Mechanisms

Aim: To understand how substances cross the plasma membrane *passively* (3 types)

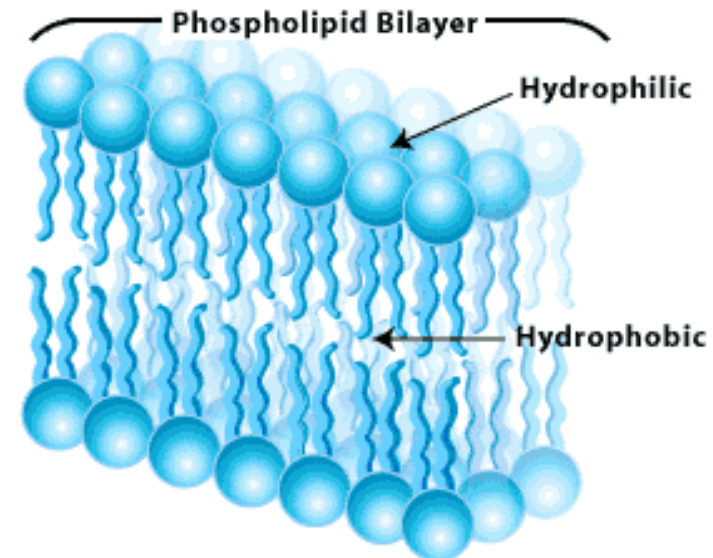
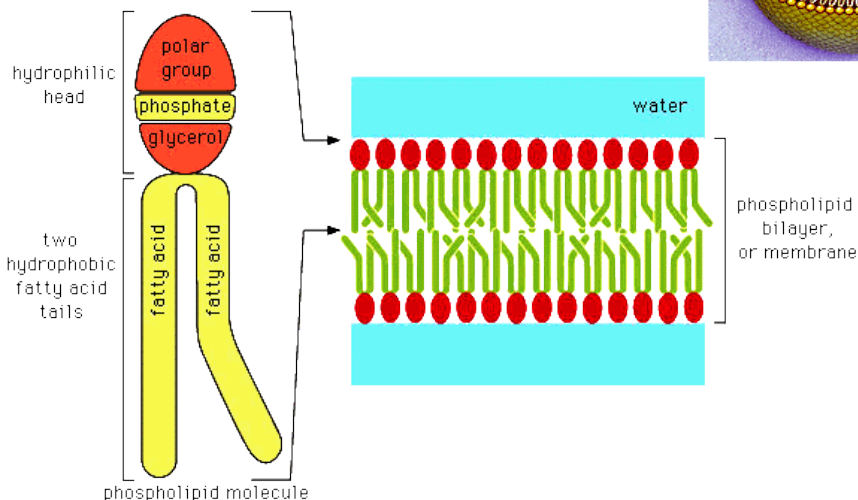
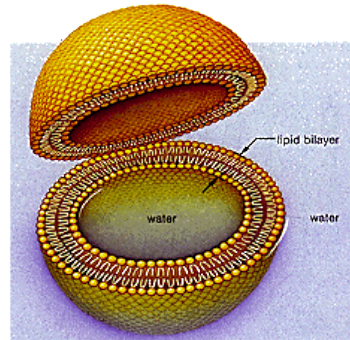


Plasma Membrane: Function

- Taking up nutrients/other requirements
- Secrete chemicals
- Cell recognition (communication)
- Site of chemical reactions



Phospholipids function
in membranes

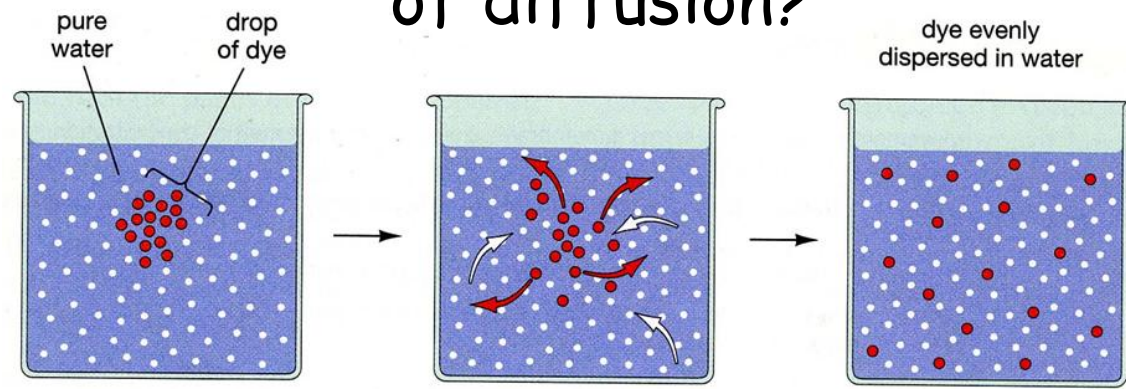


Diffusion

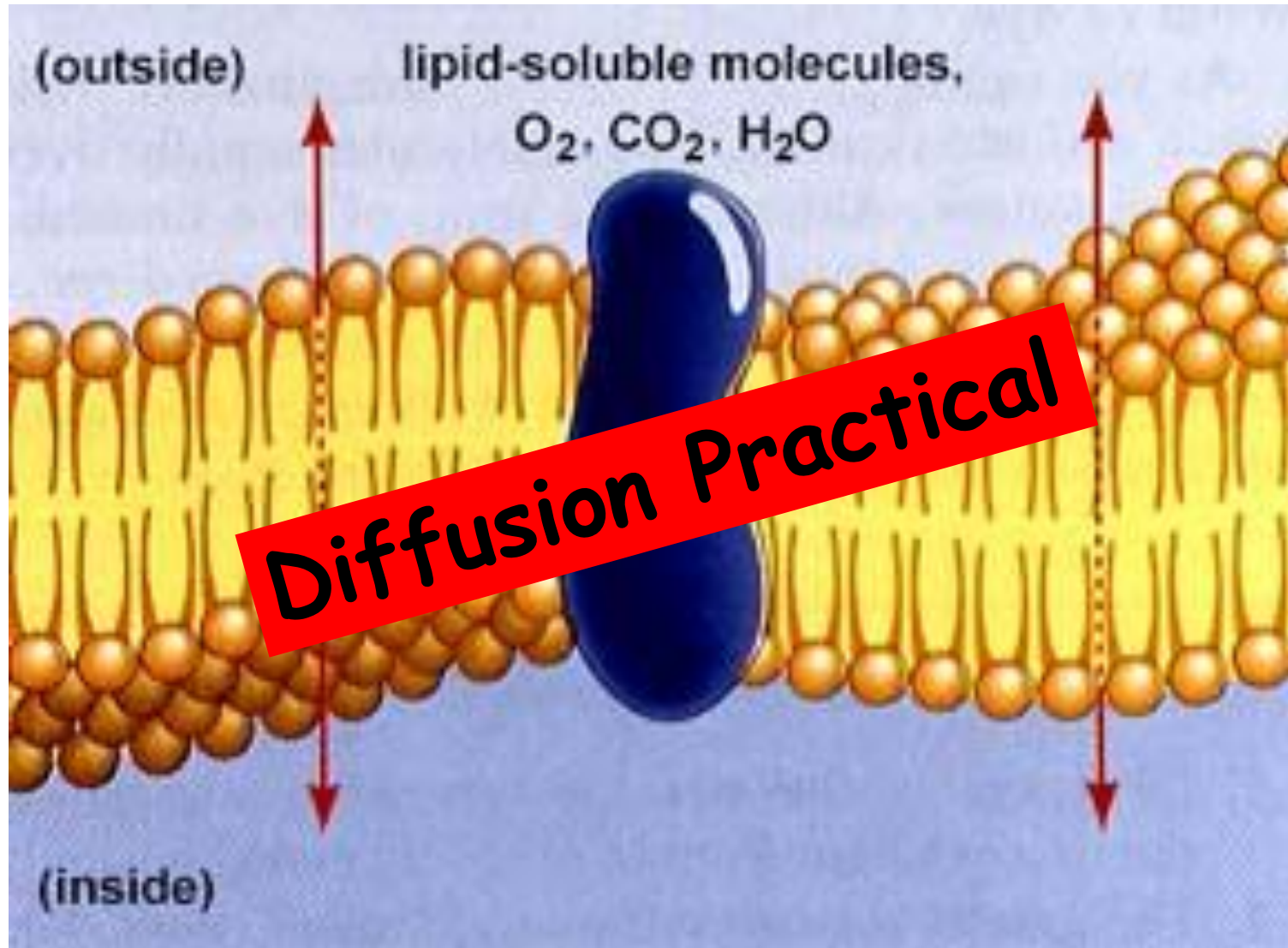
- **Passive** movement of molecules from a high concentration to low concentration.
- Rate depends on:
 1. *Concentration gradient*
 2. *Temperature*
 3. *Size of molecule*
 4. *Lipid solubility.*
 5. *S.A. (size!)*



How do each of these factors affects the rate of diffusion?



O_2 and CO_2 are small & uncharged, so can diffuse straight through the membrane.



BUT - How do large molecules or ions pass through the membrane?

Facilitated Diffusion

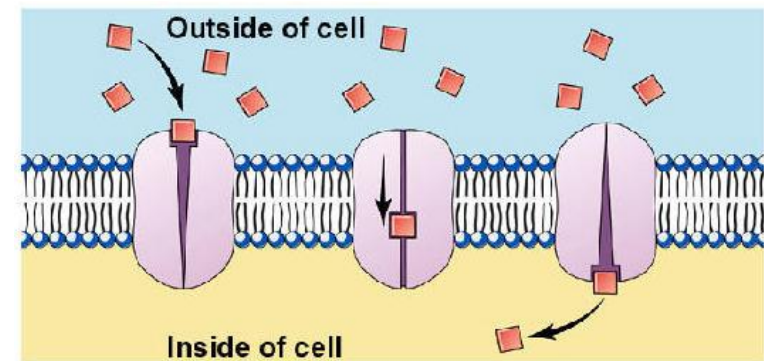
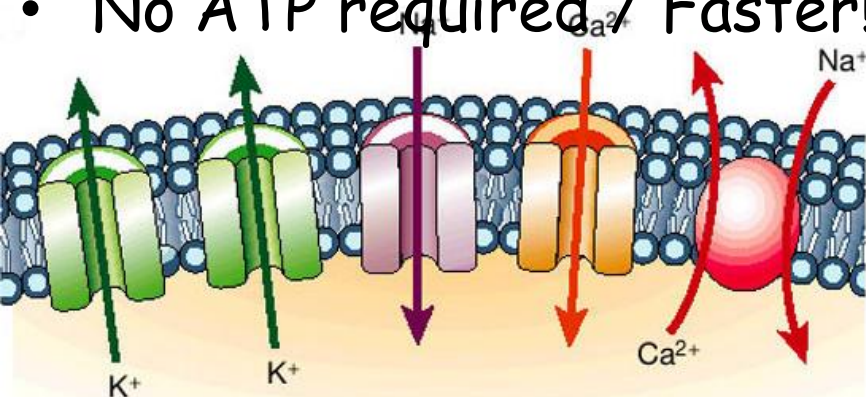
To facilitate?

In what direction does the [gradient] move?



2 integral proteins:

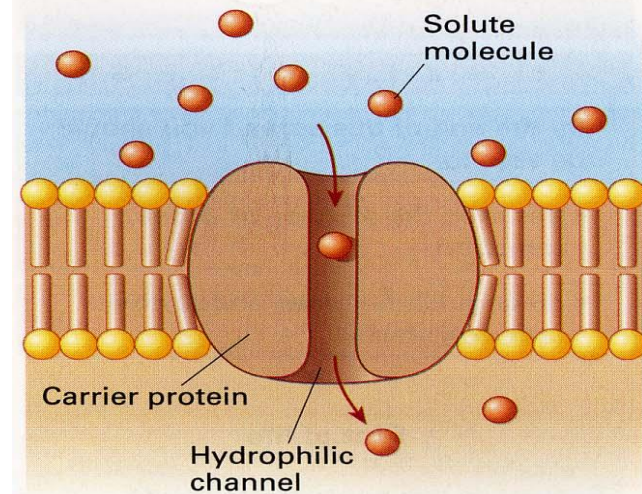
- **Carrier proteins** - bind to a particular molecule. *Change shape* so that molecule can be released on other side
- **Ion Channels** - A central pore lined with charged groups. Ions are able to diffuse through.
- **Advantage?**
- **No ATP required / Faster!**



Diffusion, Facilitation or Other?

- Uncharged gases - simple
- Charged - Ion channel
- ATP has charge but needs to be controlled
- Glucose (selectively)
- Fatty acid 'melts' through

ION CHANNEL



CARRIER PROTEIN

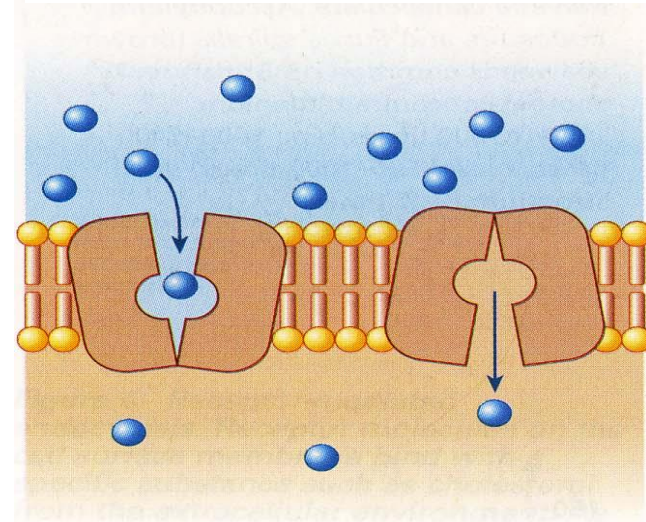


Figure 3 Facilitated diffusion: a protein acts as a specific carrier molecule in the membrane.