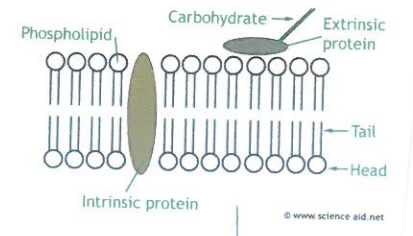


Individual phospholipids can move and proteins vary in shape, size and pattern.

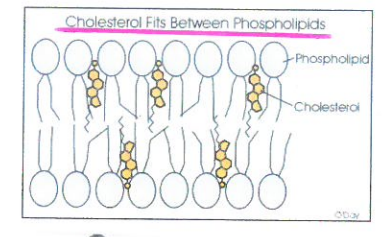
for secretion ← form vesicles ←
Red blood cells can squeeze through capillaries

fluidity allows the cell to change shape.

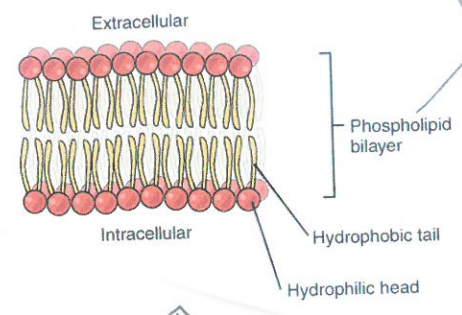
Singer & Nicholson
Fluid Mosaic model



2 layers / phospholipids



Increases rigidity & stability of membrane



varying properties/functions - will depend on different proteins present & cholesterol.

Structure

with proteins embedded

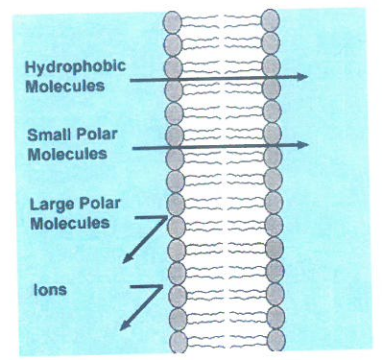
Temperature PH alcohol
can be affected by

roles

- enzymes
- receptor sites for hormones
- Cell to Cell recognition
- transport

1.3 Cell Membranes and Transport

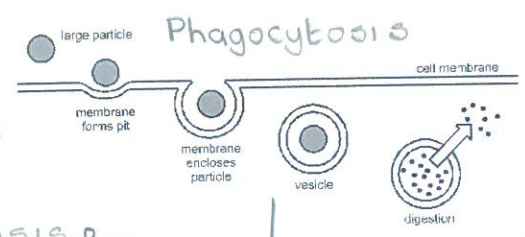
selectively permeable



Only lipid soluble molecules and molecules that are small and uncharged can pass through the hydrophobic phospholipid bilayer.

controls exchange of materials

Pinocytosis



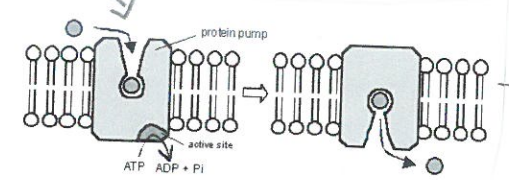
endo or exocytosis for larger particles secretion

Active process

ATP required
can be affected by respiratory poisons

Active Transport

Polar subst. against conc grad.



ATP required → highly specific - one carrier protein for one molecule type

5 methods of transport

Simple Diffusion

movement molecules from high conc → low conc until an equilibrium is reached.

Passive

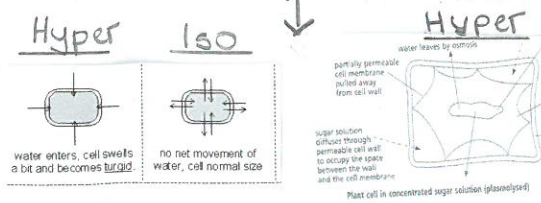
Facilitated Diffusion

osmosis

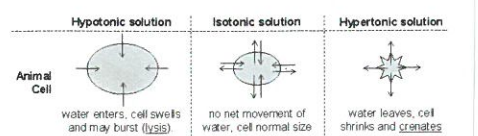
movement of water down a potential gradient from high ψ to low ψ across p.p.m.
 $H_2O = 0 \text{ Kpa}$

All solutions have a ψ lower than zero (more -)

Plant Cells in soln
 $\psi_{\text{Cell}} = \psi_s + \psi_p$



look at Potato practical



Surface area ↑ Diffusion gradient ↑

$ROD \propto \frac{SAD}{TOES}$

rate of diffusion ↓ Thickness of exchange surface ↓
Also affected by:
• temperature
• size molecule
• lipid solubility

allow charged particles → pores lined with polar groups

highly specific → larger polar molecules eg sugars, amino acids

passive → No ATP required

METHOD	USES ENERGY	USES PROTEINS	SPECIFIC	CONTROLLABLE
Simple Diffusion	N	N	N	N
Osmosis	N	N	Y	N
Facilitated Diffusion	N	Y	Y	Y
Active Transport	Y	Y	Y	Y
Vesicles	Y	N	Y	Y