

All cells have osmotic pressure
 Pure h₂O – no pressure
 Solution has ions- creates pressure

Osmosis

The flow of water across a semipermeable membrane from a compartment in which the solute concentration is higher to one in which the solute concentration is lower.
 Water moves to area with the greatest concentration

Osmotic pressure is the function of total solute concentration

Osmolarity (osmolality) is the total of concentration of all osmotic active species

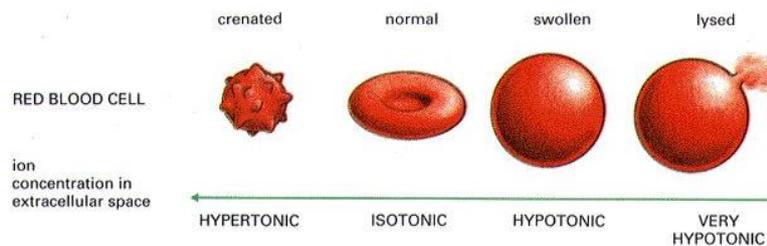
Osmoles/litre = Osmolarity

Osmoles/kg water = osmolality

Isotonic- denoting or relating to a solution having the same osmotic pressure as some other solution, especially one in a cell or a body fluid.

Hypertonic- solution that has a greater concentration of solutes on the outside of a cell when compared with the inside of a cell.

Hypotonic- having a lower osmotic pressure than a particular fluid, typically a body fluid or intracellular fluid.



Carrier proteins

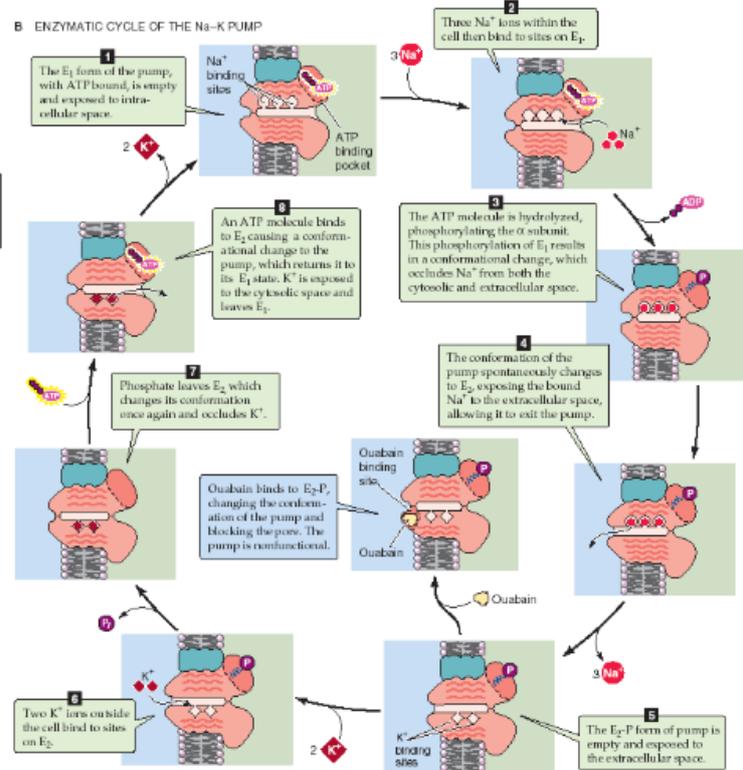
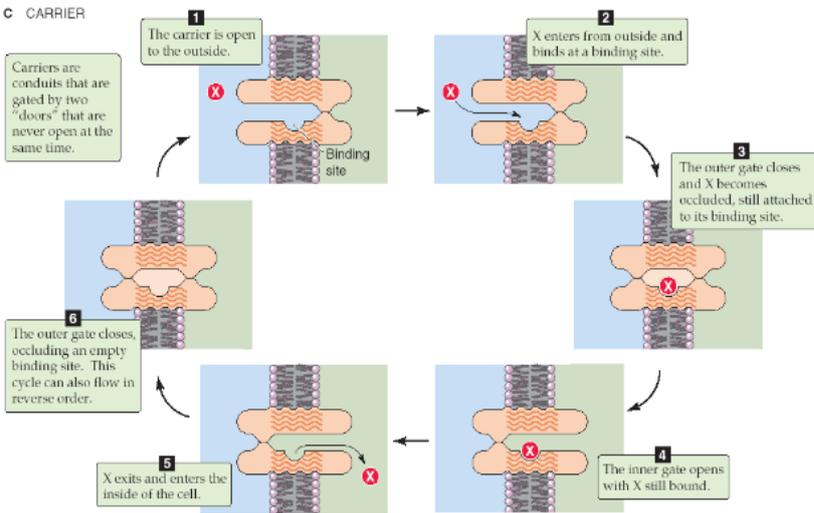
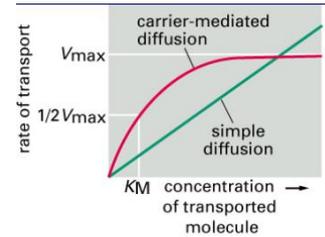
- Binds specific solutes
- Conformational change involved
- Slow through specific
- Never fully open

Channel protein

- Pore (no conformational change)
- FAST (less specific)
- Always open

Facilitated diffusion and active transport are examples of carrier mediated transport involving specific membrane bound transport proteins.

Carrier mediated diffusion- faster at low concentrations until max



- Organelles also have their own pumps