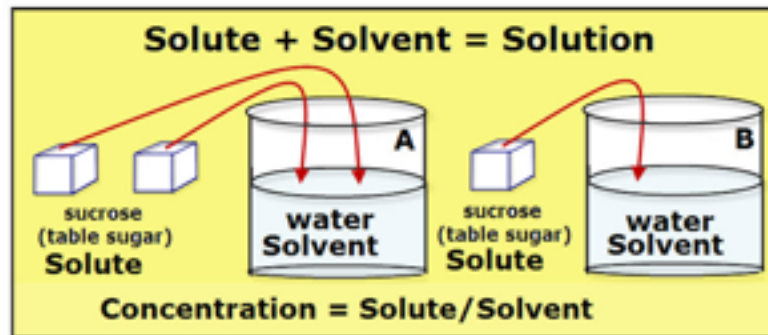


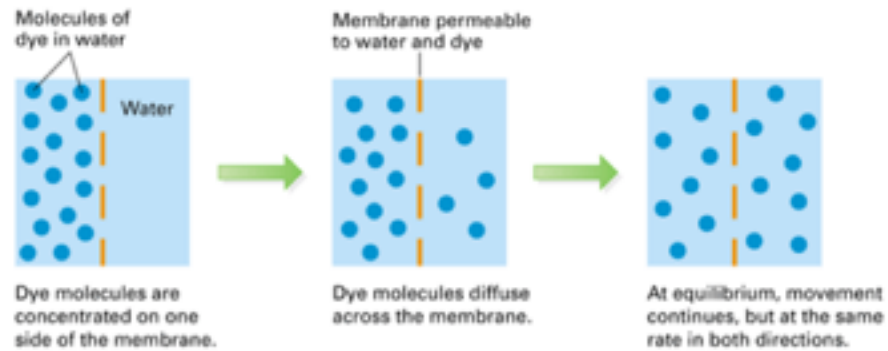
Movement Across Membranes

Solvent – the substance that dissolves something else

Solute – the substance that gets dissolved



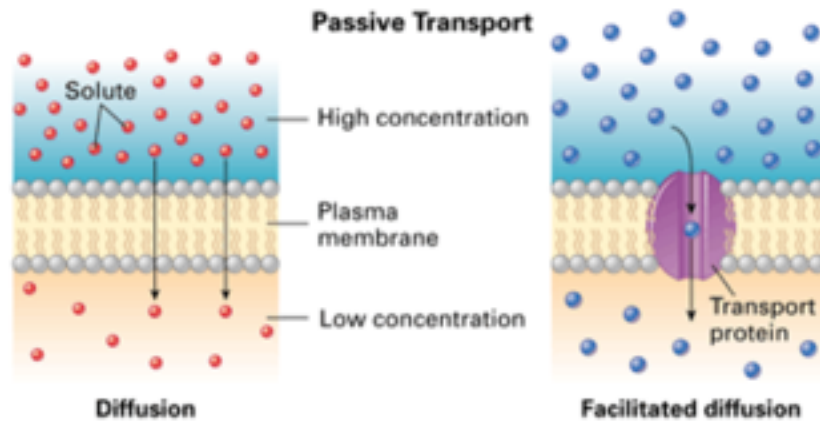
DIFFUSION Getting to Equilibrium



Dye molecules diffuse across a membrane. At equilibrium, the concentration of dye is the same throughout the container.

Diffusion – the movement of molecules from high concentration to low

Passive Transport – No extra energy needed



Both diffusion and facilitated diffusion are forms of passive transport, as neither process requires the cell to expend energy. In facilitated diffusion, solute particles pass through a channel in a transport protein.

Osmosis

Selectively permeable membrane = lets through only some molecules

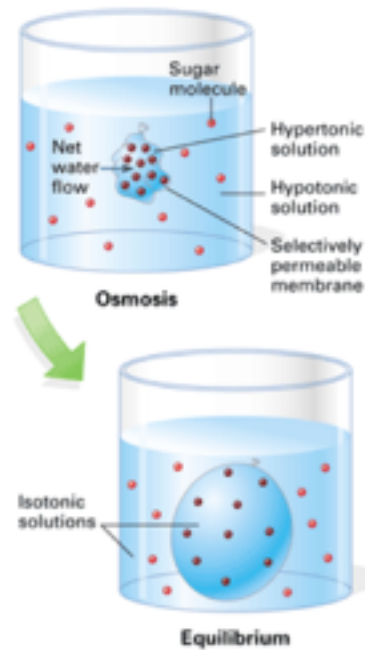
Osmosis – passage of water

Hypertonic – higher [solute]

Hypotonic – lower [solute]

Isotonic – equal [solute]

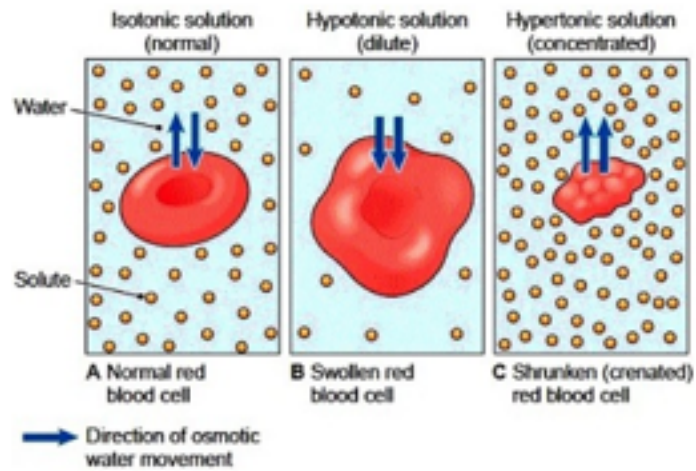
[] = concentration



A selectively permeable membrane (the bag) separates two solutions of different sugar concentrations. Sugar molecules cannot pass through the membrane.

Osmosis – the passage of water
Hypertonic – higher concentration of solute
Hypotonic – lower concentration of solute
Isotonic – concentrations of solute equal

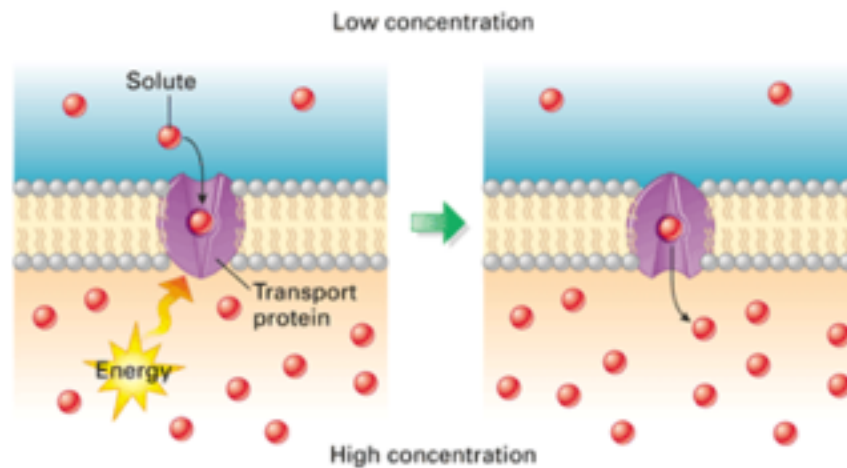
Example of Osmosis



B. If the cell ruptures = hemolysis

C. If the cell shrinks = crenation

ACTIVE TRANSPORT – Energy Needed



Like an enzyme, a transport protein recognizes a specific solute, molecule or ion. During active transport, the protein uses energy, usually moving the solute in a direction from lesser concentration to greater concentration.

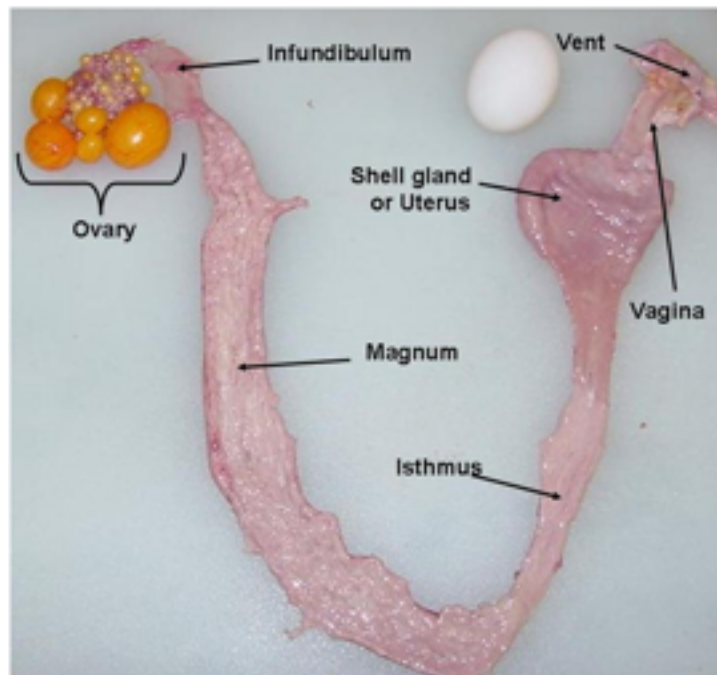
Solvent
Solute
Concentration Gradient
Diffusion
Passive Transport
Facilitated Diffusion
Osmosis
Selectively Permeable Membrane
Hemolysis
Crenation
Active Transport

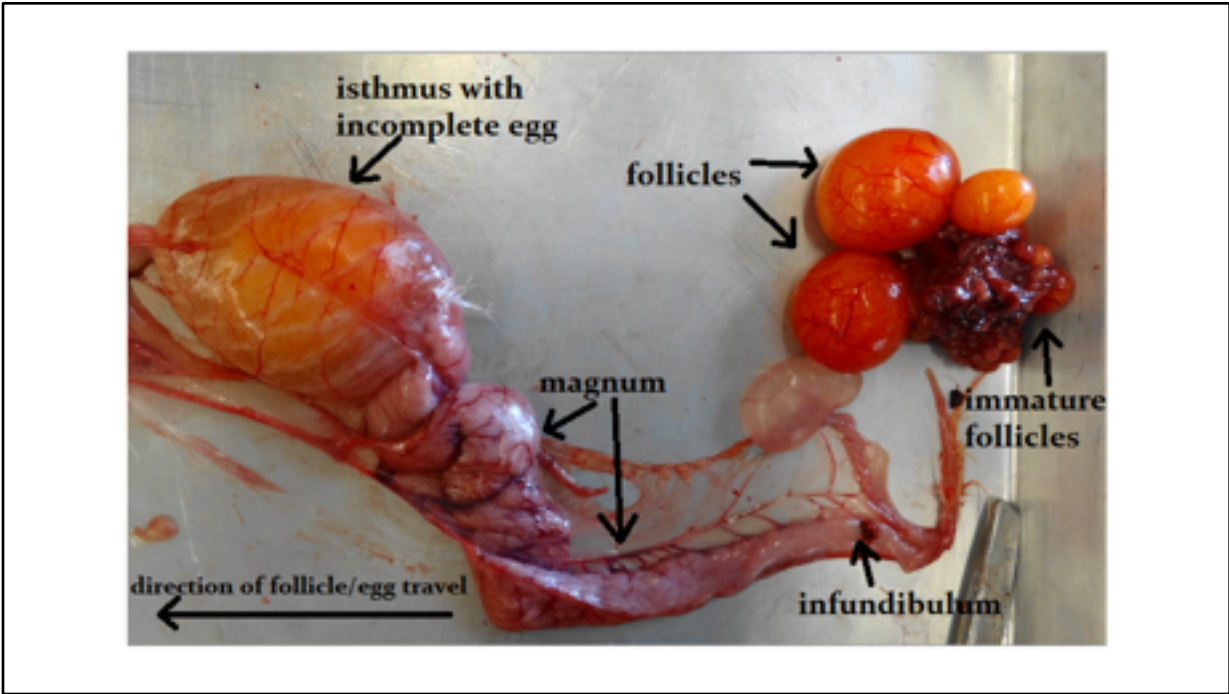
A Chicken Egg – A Single Cell



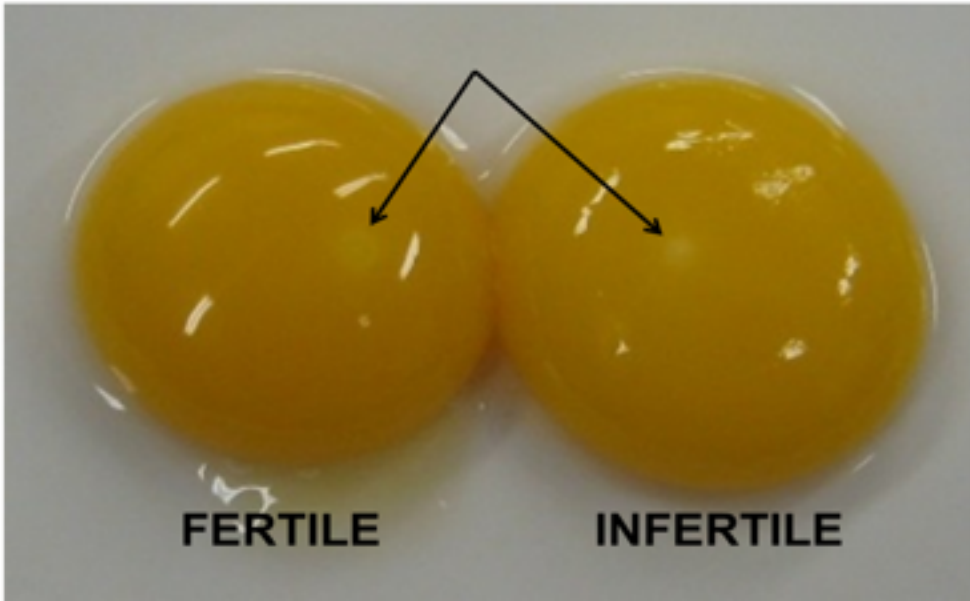
It takes
24 – 26 hours
to create an
egg

So
~ 1 egg/day





You Can't Tell the Difference



Shell-less Eggs

