

A decorative graphic consisting of a horizontal blue line at the top, a vertical blue line on the left, and a horizontal blue line at the bottom. Small blue circles are positioned at the intersections of these lines: one at the top-left, one at the bottom-right, and one at the bottom-left.

BW #5

If you are absent from class, what is the FIRST thing you should do?

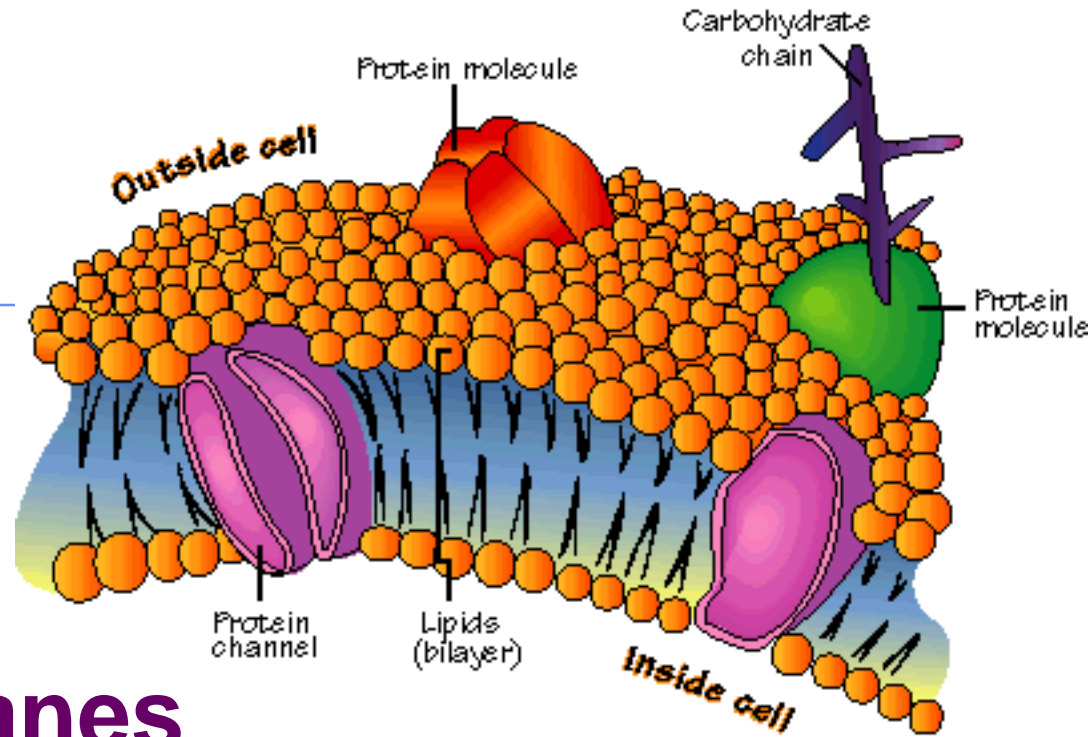
[Link](#)

Glue to Page 22

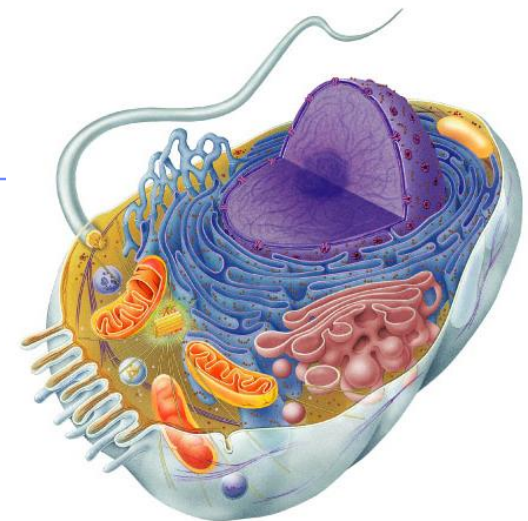
Organelles of the Cell

Use this chart to help you with your project.

| Cell Part | Function | Picture | Way to Remember (comparison) |
|-----------------------------------|----------|---------|------------------------------|
| Plasma Membrane (Cell Membrane) | | | |
| Cytoplasm | | | |
| Ribosomes | | | |
| Endoplasmic Reticulum | | | |
| Golgi Apparatus | | | |
| Mitochondria | | | |
| Lysosomes | | | |
| Vacuole | | | |
| Chromatin/ Chromosomes | | | |
| Nucleus | | | |
| Nucleolus | | | |
| Centrioles (animal cell only) | | | |
| Flagella/Cilia (animal cell only) | | | |
| Cell Wall (plant cell only) | | | |
| Chloroplasts (plant cell only) | | | |

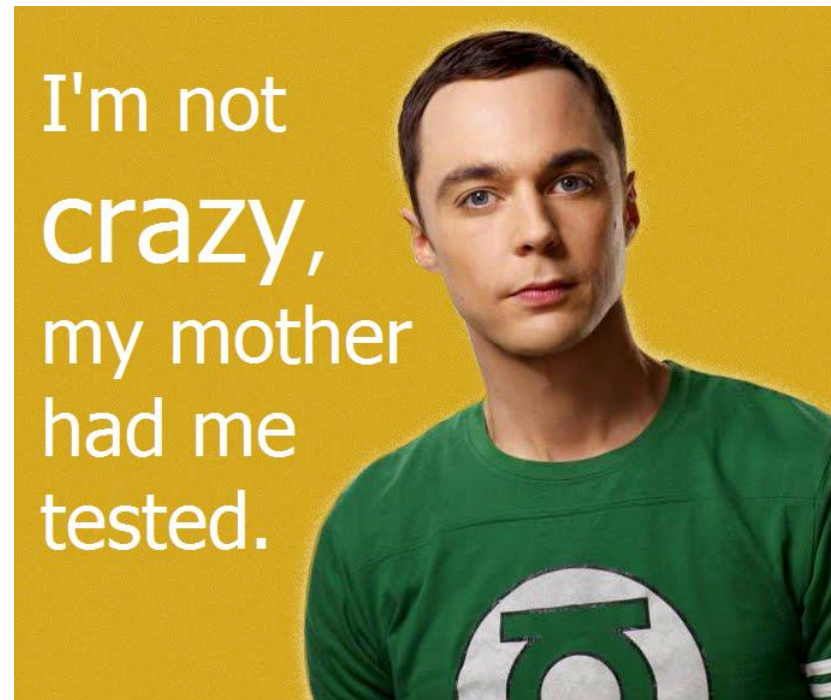


Cell Membranes & Movement Across Them



What is homeostasis?

- Let's ask an expert!



Cell Membrane

- **Substances move in and out of the cell in order for the cell to function properly and maintain homeostasis.**
- Homeostasis
- **Homeostasis -- the ability of an organism to maintain a constant internal balance even when the conditions around it change.**
- **Which organelle in the cell is responsible for maintaining homeostasis?**

Cell (plasma) membrane

- Cells need an inside & an outside...
 - ◆ separate cell from its environment
 - ◆ cell membrane is the boundary

Semi-permeable membrane

- Cell membrane controls what gets in or out
- Need to allow some materials — but not all — to pass through the membrane
 - ◆ semi-permeable
 - only some material can get in or out

So what needs to get across the membrane?



The diagram shows a wavy brown line representing a membrane. Above the membrane are seven items: a green octagon labeled 'sugar', a yellow circle labeled 'lipids', a purple octagon labeled 'aa', a black circle labeled 'O₂', a blue circle labeled 'H₂O', a light blue diamond labeled 'salt', and a yellow inverted triangle labeled 'waste'.

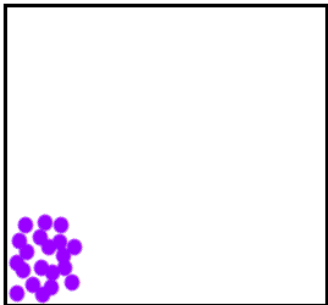
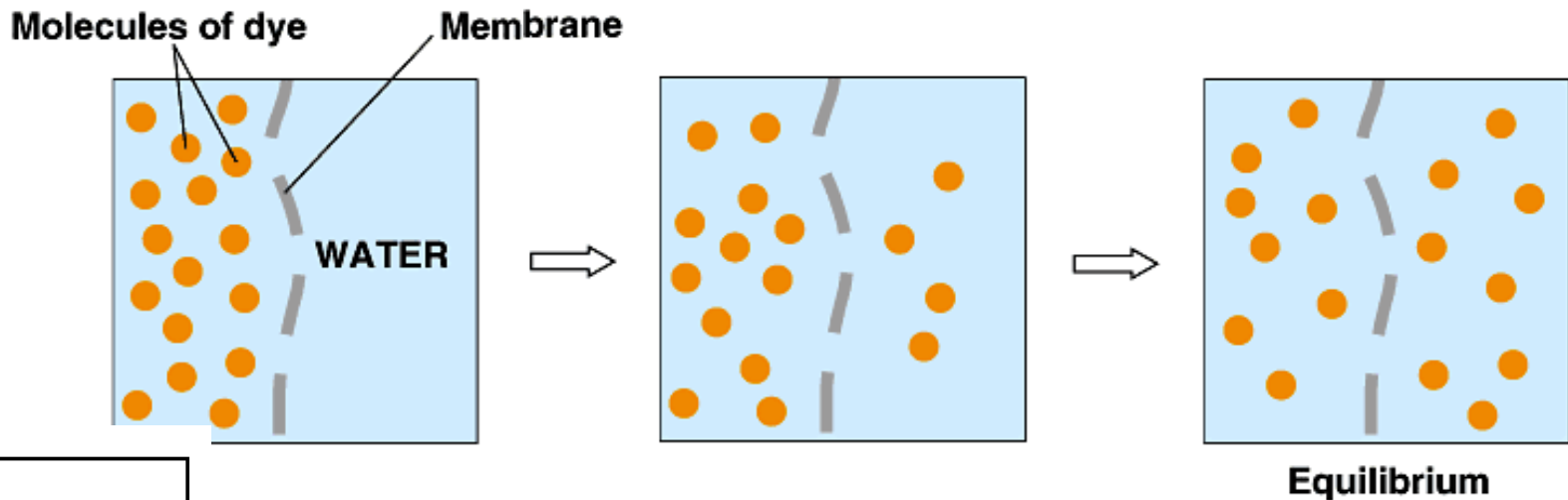
sugar lipids aa O₂ H₂O salt waste

Molecules move from high to low

■ Diffusion

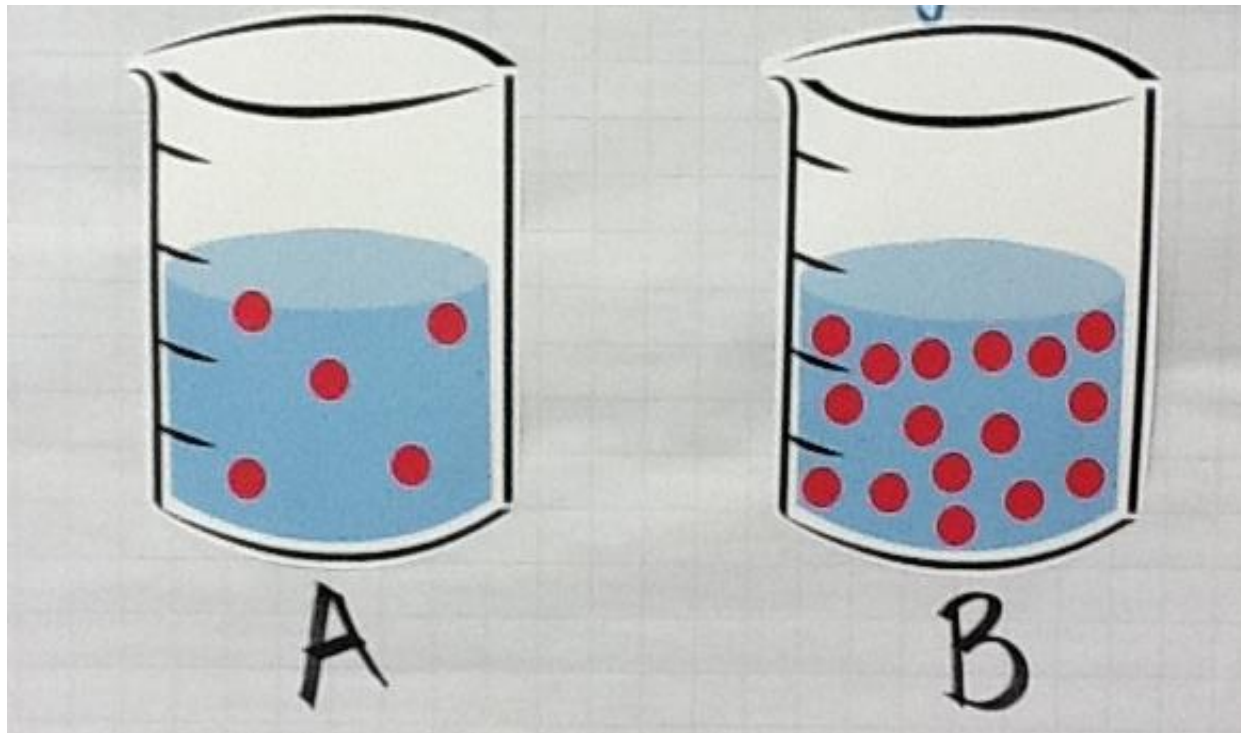
◆ move from HIGH to LOW concentration

◆ EXAMPLE



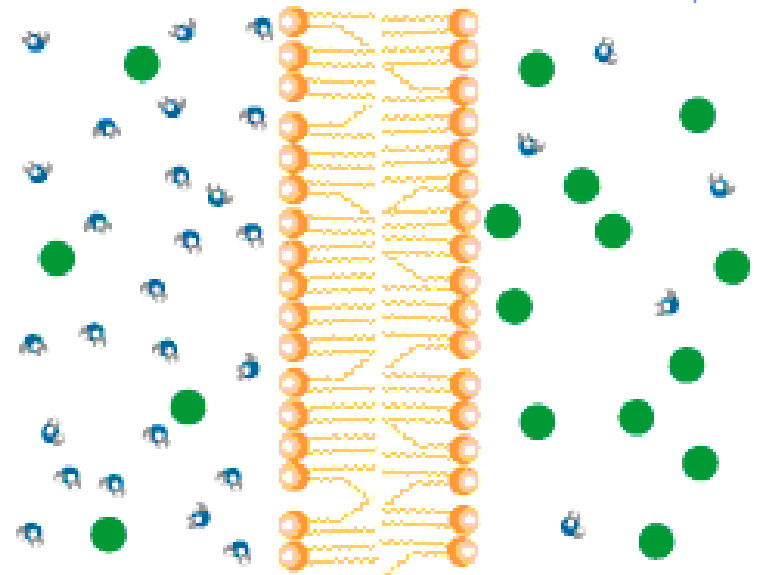
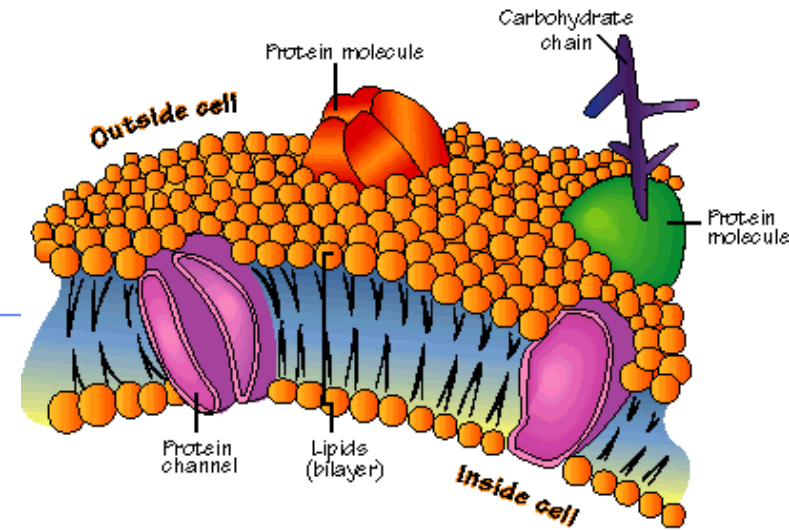
Concentration???

- Think of it as how crowded something is...
- Which is more concentrated? WHY?



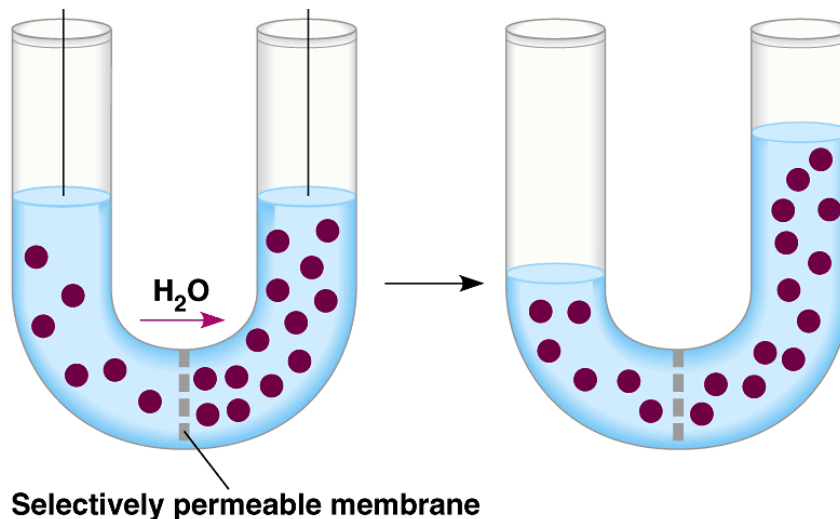
Osmosis

Movement of Water Across Cell Membrane



Osmosis

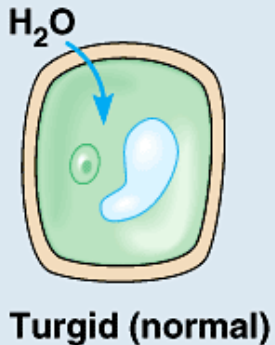
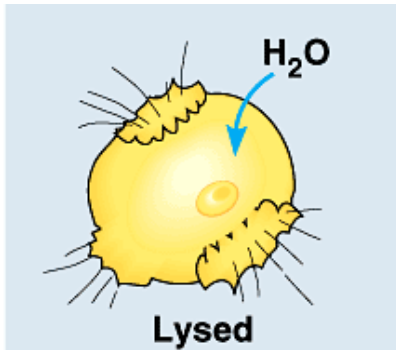
- Water is very important, so we talk about water separately
- **Osmosis**
 - ◆ **diffusion of water from HIGH concentration of water to LOW concentration of water**
 - across a semi-permeable membrane



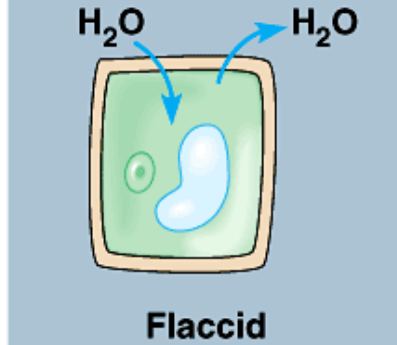
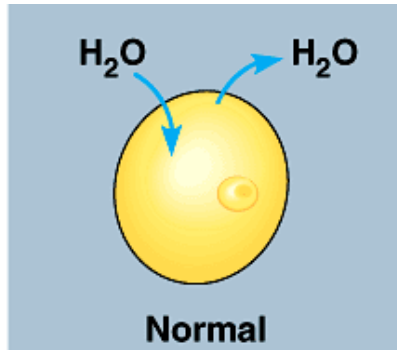
Keeping water balance

- Cell survival depends on balancing water uptake & water loss

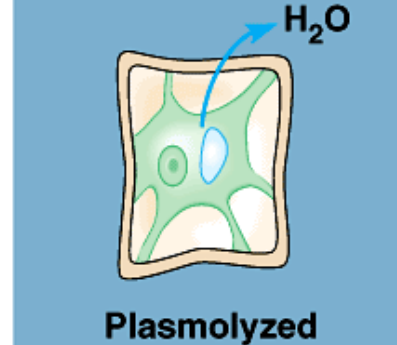
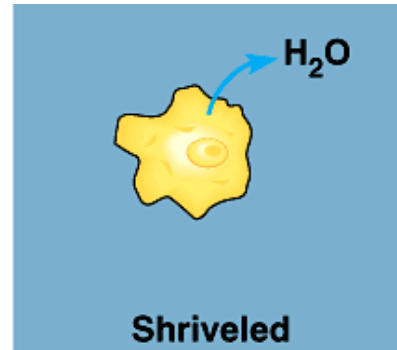
freshwater



balanced



saltwater



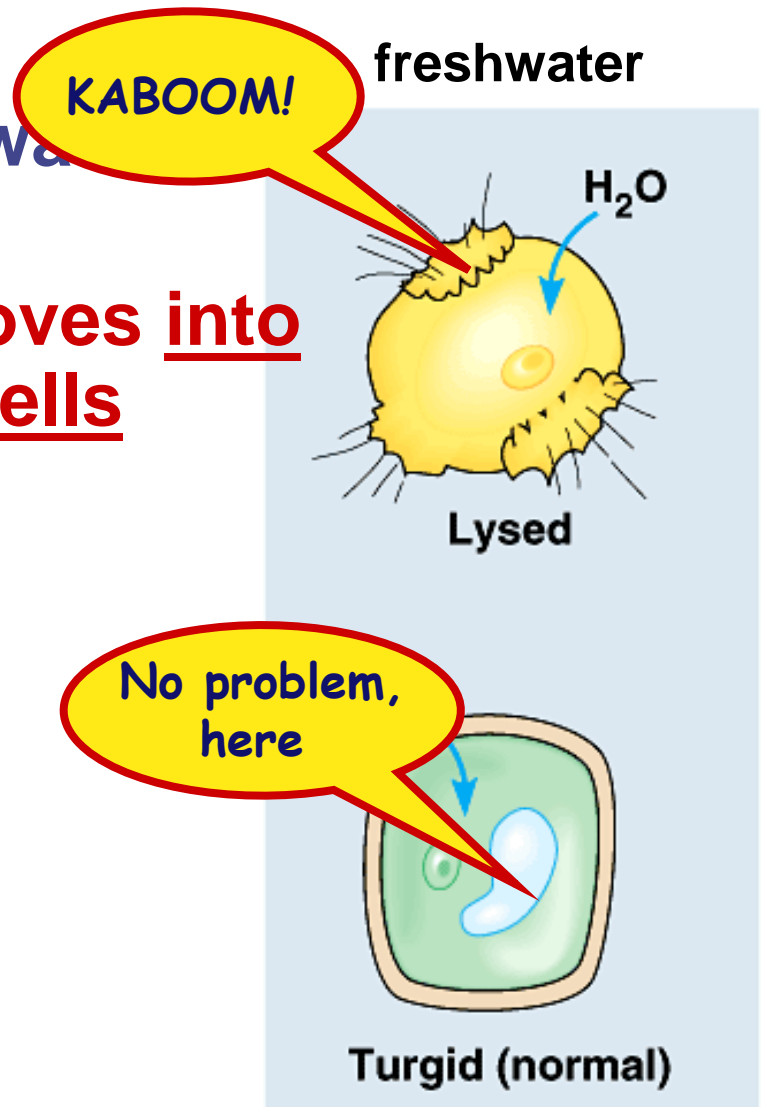
Animal cell

Plant cell

Keeping right amount of water in cell

■ Hypotonic

- ◆ high concentration of water around cell
- ◆ **Which means water moves into the cell and the cell swells**
- ◆ Example
 - a cell in fresh water



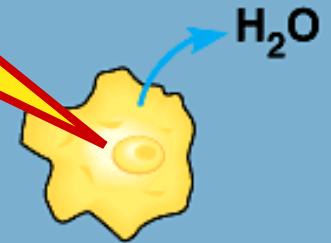
Keeping right amount of water in cell

■ Hypertonic Solution

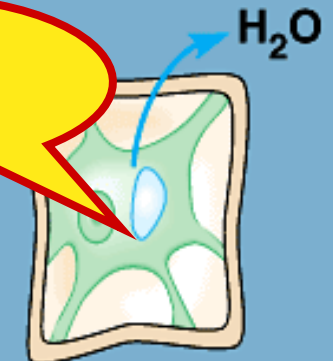
- ◆ low concentration of water around cell
- ◆ Which means water moves out of the cell and the Cell Shrinks
- ◆ Example
 - Cells in salt water

I'm shrinking,
I'm shrinking!

saltwater



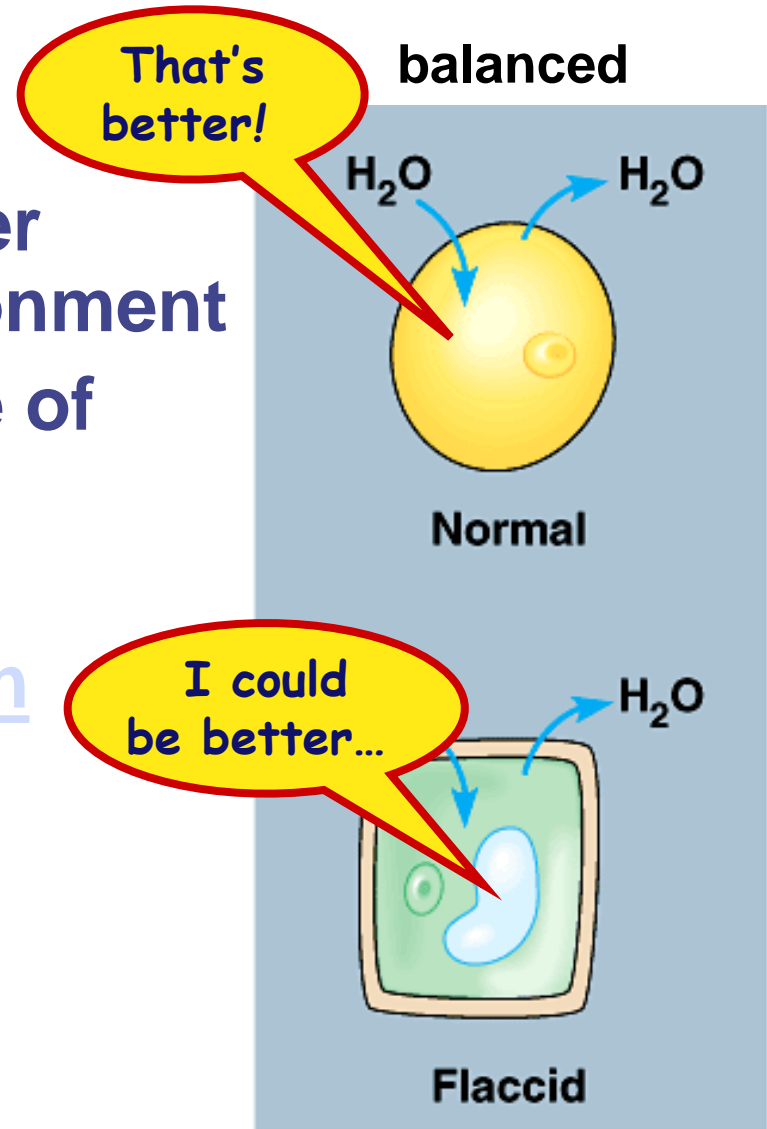
I will
survive!



Keeping right amount of water in cell

■ Isotonic Solutions

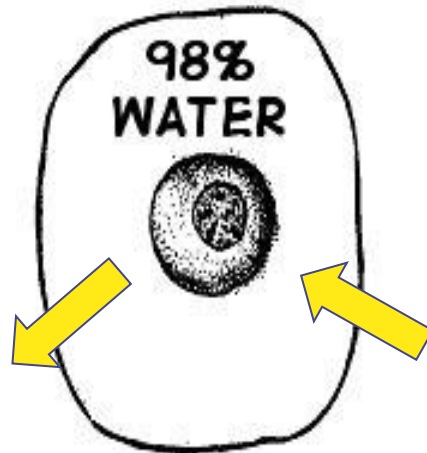
- ◆ no difference in concentration of water between cell & environment
- ◆ No change in the size of cell
- ◆ See these solutions in action





95% WATER

HYPERTONIC



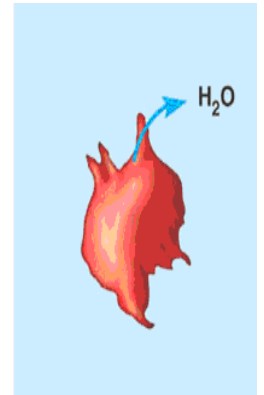
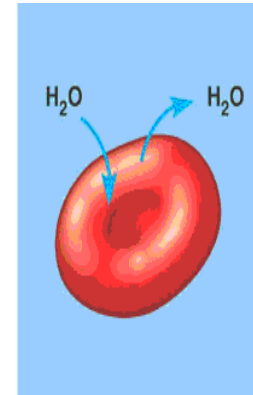
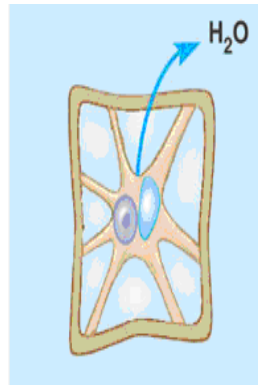
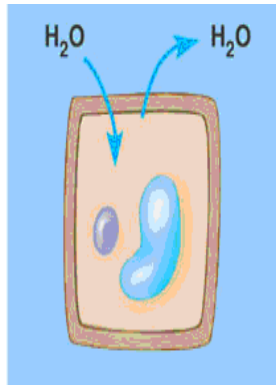
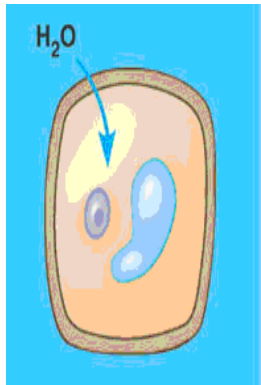
98% WATER

ISOTONIC



100% WATER

HYPOTONIC



HYPOTONIC ISOTONIC

HYPERTONIC

HYPOTONIC ISOTONIC

HYPERTONIC

WHY DOESN'T
OSMOSIS WORK
LIKE THIS.



WeKnowMemes