Biology (CLOZE) Unit 1: Osmosis TOC#**17** 

# **Osmosis and Concentration Gradients**

Questions/Pictures/ Key Words	The net movement of molecules down their							
What Happened to the lettuce?	concentration gradient.  -Molecules tend to move from regions where they are in higher							
	concentration () to regions where they are							
	less concentrated ().							
—This is also why you get thirsty after eating something salty.	Passive (not energy needed) diffusion of water through a Semipermeable membrane:  Who has a semipermeable membrane? A cell!  —A simple rule to remember is: SALT SUCKS!  —Salt is a, when it is concentrated inside or outside the							
	cell, it will draw the (water) in its direction.							
	—Why doesn't the salt just move?							
	Why doesn't the salt just move?							
	: Moving things around and into/out of a cell.  Types:							
	1) PASSIVE TRANSPORT							
	1) PASSIVE TRANSPORT  —WHAT: is required for the molecules							
	1) PASSIVE TRANSPORT  —WHAT: is required for the molecules to move into or out of the cell.  —Diffusion and Osmosis are both examples							
	1) PASSIVE TRANSPORT							
	1) PASSIVE TRANSPORT							
	1) PASSIVE TRANSPORT							
ISOTONIC "ISO" means the same	1) PASSIVE TRANSPORT  —WHAT: is required for the molecules to move into or out of the cell.  —Diffusion and Osmosis are both examples  2) ACTIVE TRANSPORT:  —WHAT: if carried out against the concentration gradient  —WHY: Sometimes, large molecules cannot cross the plasma membrane, and are "helped" across by carrier proteins							
	1) PASSIVE TRANSPORT							

### Questions/Pictures/ Key Words



"Hypo = Hippo (big fat guy)"



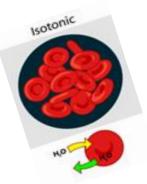
—"Hyper", hyper people burn lots of energy and are skinny!"



# Type of Solutions:

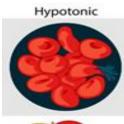
### 1. ISOTONIC

- —Same solution on both sides
- —\_\_\_\_ movement in and out



#### 2. **HYPOTONIC**

—"HYPO" means less



—\_\_\_\_\_ solute (salt)

molecules \_\_\_\_\_ the cell, since salt sucks, water will move into the cell.

—The cell will gain water and grow larger.



### Strategies

—How to deal with swelling up and not pop!

### —ANIMAL CELL:

—The cell may be in danger of bursting, organelles called **CONTRACTILE VACUOLES** will pump water out of the cell to prevent this

# —PLANT CELL:

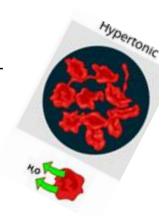
- —The central vacuoles will fill and the plant becomes stiff, the cell wall keeps the plant from bursting
- —Central Vacuole

#### 3. HYPERTONIC

- —"HYPER" means more
- —The word, in this case there are \_\_\_\_

_	,	-		 -	_	_	-		
solute	(salt)				tl	he	e c	ell	l.

- —which causes the water to be sucked out of the cell
  - —<u>PLANT CELLS</u>: the central vacuole loses water and the cells shrink, causing wilting.
  - —<u>ANIMAL CELLS</u>: the cells also shrink.
  - —In both cases, the cell may die.



Summary:	