

# Cell Transport Notes

## Chapter 7 Section 3

pages 208-217

The goal of Cellular Transport is to move substances \_\_\_\_\_ and \_\_\_\_\_ of the cell.

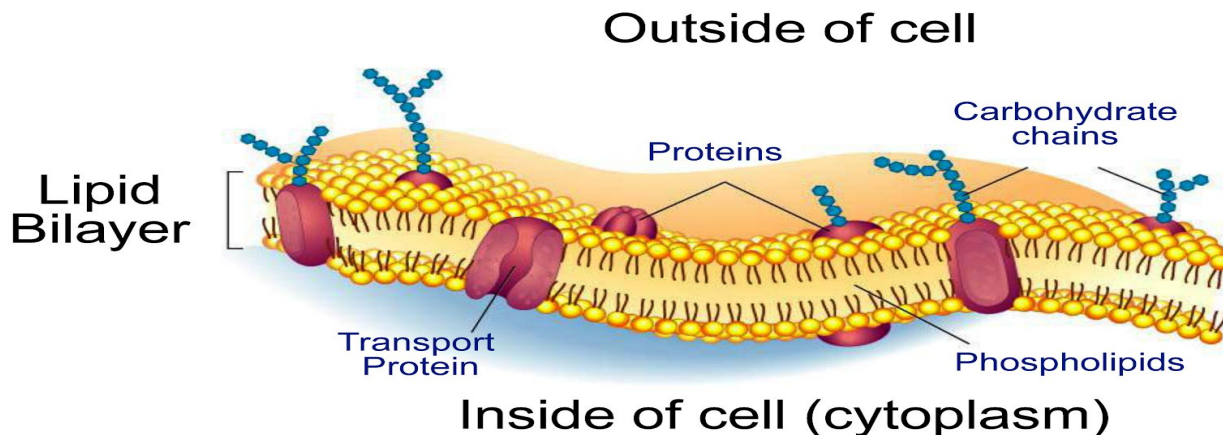
*A little review from last unit (pg204)*

### The Plasma Membrane (AKA cell membrane)

- All cells contain a \_\_\_\_\_ membrane this includes (\_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ cells)
- The cell membrane is made up of a \_\_\_\_\_ sheet called the \_\_\_\_\_
- This gives the cell a flexible structure that forms a strong \_\_\_\_\_ between the cell and its \_\_\_\_\_
- The lipid bilayer is made up of \_\_\_\_\_ chains that are \_\_\_\_\_ to water and called the \_\_\_\_\_ end
  - These form an oily layer on the \_\_\_\_\_ of the membrane
- The opposite end (called the \_\_\_\_\_ end) is \_\_\_\_\_ to water
  - These form the \_\_\_\_\_ layer of the membrane

### The Plasma Membrane

## Structure of the Cell Membrane



Fluid Mosaic – Why do scientists describe the cell membrane/lipid bilayer as a fluid mosaic?

There are 2 types of Cellular Transport (page 208)

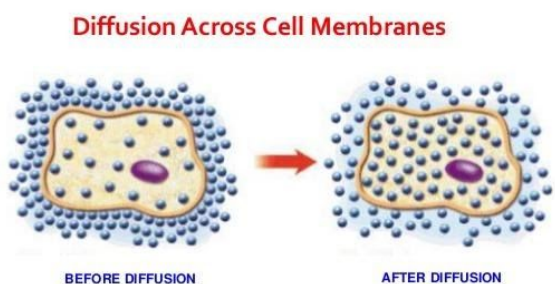
PASSIVE TRANSPORT	ACTIVE TRANSPORT
Diffusion	Endocytosis
Facilitated diffusion	Exocytosis
Osmosis	Protein Pumps

Moves \_\_\_\_\_ the gradient  
\_\_\_\_\_ need energy

moves \_\_\_\_\_ the gradient  
\_\_\_\_\_ need energy

## ~PASSIVE TRANSPORT~

**Diffusion:** \_\_\_\_\_



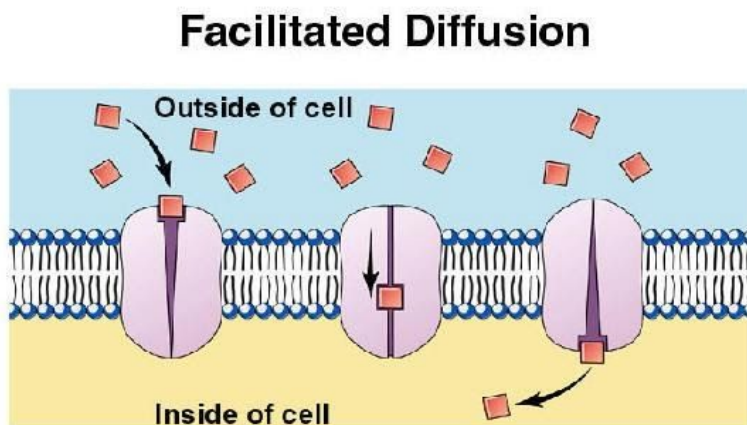
- Cellular cytoplasm consists of many different \_\_\_\_\_ dissolved in H<sub>2</sub>O
- \_\_\_\_\_ particles move constantly
- Particles tend to move from a \_\_\_\_\_ concentration to a \_\_\_\_\_ concentration area
- If a substance can cross the \_\_\_\_\_ its particles will move to the \_\_\_\_\_ concentrated area until \_\_\_\_\_ distributed
- \_\_\_\_\_ energy needed
- no overall change
- Examples: \_\_\_\_\_
- Some factors that affect diffusion

include: \_\_\_\_\_

- How am I going to remember the meaning of DIFFUSION?

**Facilitated Diffusion:** \_\_\_\_\_

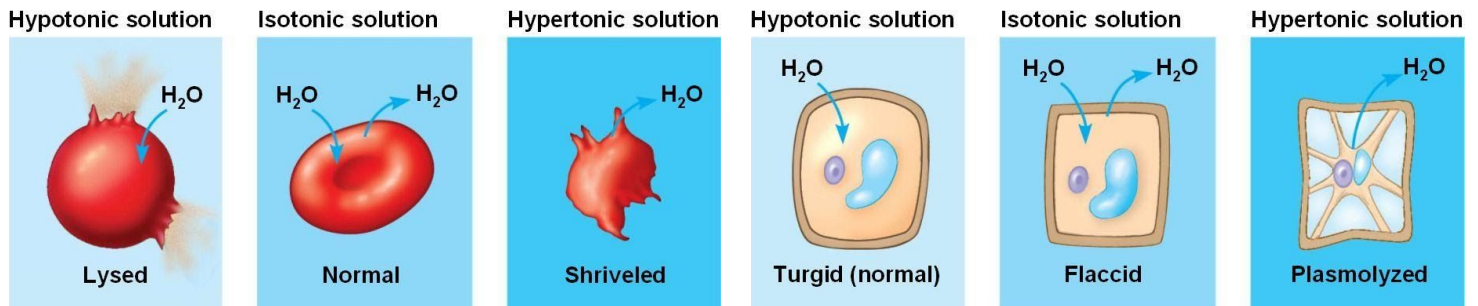
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- Proteins stuck in the cell membrane act as \_\_\_\_\_
- This makes some \_\_\_\_\_ cross the membrane easily
- The protein channels that allow \_\_\_\_\_ across the membrane \_\_\_\_\_ or \_\_\_\_\_ the diffusion of glucose across the membrane
- \_\_\_\_\_ energy needed
- Examples include: \_\_\_\_\_
- How am I going to remember the meaning of FACILITATED DIFFUSION?

# Osmosis: the movement of \_\_\_\_\_ through a selectively permeable membrane

- Molecules move from an area of \_\_\_\_\_ concentration to an area of \_\_\_\_\_ concentration
- Name the molecule that moves in osmosis: \_\_\_\_\_
- Water continues to move across the \_\_\_\_\_ until \_\_\_\_\_ is reached



## ISOTONIC SOLUTION

- If the \_\_\_\_\_ and \_\_\_\_\_ molecules are \_\_\_\_\_ on both sides of the membrane
- Isotonic means \_\_\_\_\_
- “strength” refers to the amount of \_\_\_\_\_ NOT \_\_\_\_\_
- Water will move \_\_\_\_\_ at the same rate
- The cell will \_\_\_\_\_ its normal shape
- Animal cells: this **IS** the perfect condition since the cell is at equilibrium
- Plant cells: this is **NOT** the perfect condition

## HYPERTONIC SOLUTION

- Hypertonic means \_\_\_\_\_
- The \_\_\_\_\_ has a higher \_\_\_\_\_ concentration than the inside of the cell
- \_\_\_\_\_ water amount \_\_\_\_\_ solute amount OUTSIDE
- \_\_\_\_\_ water amount \_\_\_\_\_ solute amount INSIDE
- Results in water moving \_\_\_\_\_ of the cell
- Cell will \_\_\_\_\_
- Animal cells: this is **NOT** good since the cell will shrink (it is dehydrated)
- Plant cells: this is **NOT** good causing the plant to wilt

## HYPOTONIC SOLUTION

- *Hypotonic* means \_\_\_\_\_
- The \_\_\_\_\_ has a \_\_\_\_\_ solute concentration than the inside of the cell
- \_\_\_\_\_ water amount \_\_\_\_\_ solute amount OUTSIDE
- \_\_\_\_\_ water amount \_\_\_\_\_ solute amount INSIDE
- Results: water moves \_\_\_\_\_ the cell
- Cell will \_\_\_\_\_
- Animal cells: this is **NOT** good since the cell could swell too much causing it to burst or lyse
- Plant cells: this **IS** ideal because the cell membrane pushes on the cell wall causing the plant to be more upright

HOW AM I GOING TO REMEMBER...???

Isotonic Solutions?	Hypertonic Solutions?	Hypotonic Solutions?

# ~ACTIVE TRANSPORT~

**Active Transport:** \_\_\_\_\_

- Requires \_\_\_\_\_
- Most also use \_\_\_\_\_
- Moves \_\_\_\_\_ the concentration gradient

## MOLECULAR TRANSPORT

- Small \_\_\_\_\_ and \_\_\_\_\_ are carried across membranes by \_\_\_\_\_ in the membrane that act like \_\_\_\_\_
- Examples includes: \_\_\_\_\_

## BULK TRANSPORT

- \_\_\_\_\_ molecules and even \_\_\_\_\_ clumps of material can be transported by \_\_\_\_\_ of the membrane
- This depends on the \_\_\_\_\_ and \_\_\_\_\_ of the material
- 2 types of Bulk Transport are Endocytosis and Exocytosis

**ENDOCYTOSIS:** \_\_\_\_\_

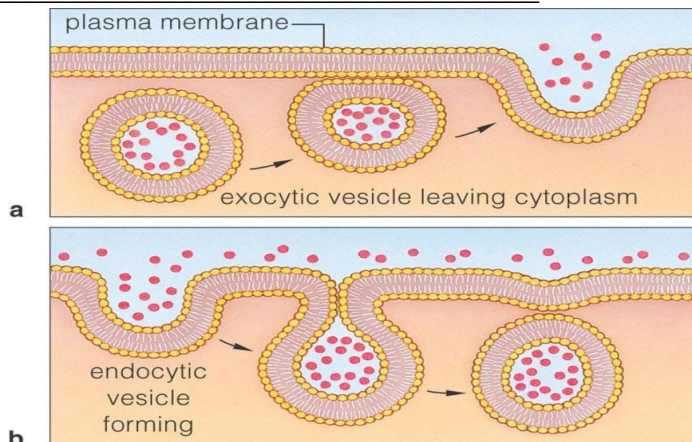
- The pocket will break loose from the \_\_\_\_\_ portion of the membrane and form \_\_\_\_\_
- Examples: \_\_\_\_\_
- Bringing large molecules \_\_\_\_\_ the cell using \_\_\_\_\_ and a \_\_\_\_\_
- PHAGOCYTOSIS: \_\_\_\_\_
  - \_\_\_\_\_ use this to bring in food
  - \_\_\_\_\_ use this to “eat” damaged cells
- PINOCYTOSIS: \_\_\_\_\_

**EXOCYTOSIS:** \_\_\_\_\_

- Contents of the cell are \_\_\_\_\_
- Must use \_\_\_\_\_
- Example: \_\_\_\_\_

This is \_\_\_\_\_

This is \_\_\_\_\_



**HOMEOSTASIS:** \_\_\_\_\_

Ways to maintain homeostasis

**Unicellular** organisms will:

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_

**Multicellular** organisms will:

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_

Levels of Organization

**CELL:** the basic unit of life**TISSUE:** \_\_\_\_\_**ORGAN:** \_\_\_\_\_**ORGAN SYSTEM:** \_\_\_\_\_

This division of labor allows organisms to maintain homeostasis Because of  
\_\_\_\_\_ and \_\_\_\_\_

**Cellular Communication**

- Cells in \_\_\_\_\_ organisms communicate by means of \_\_\_\_\_
- These signals \_\_\_\_\_ up activities or can \_\_\_\_\_ down activities
- **RECEPTORS:** a \_\_\_\_\_ molecule binds so that a signal can be responded to
- Examples: \_\_\_\_\_