

REVIEW: PASSIVE TRANSPORT

3 types of passive transport:

- Diffusion
- Osmosis
- Facilitated diffusion

→ **Things** (like molecules of O_2 or H_2O or glucose)
move from a **HIGH** concentration of those
molecules to a **LOW** concentration of those
molecules

HIGH  **LOW**

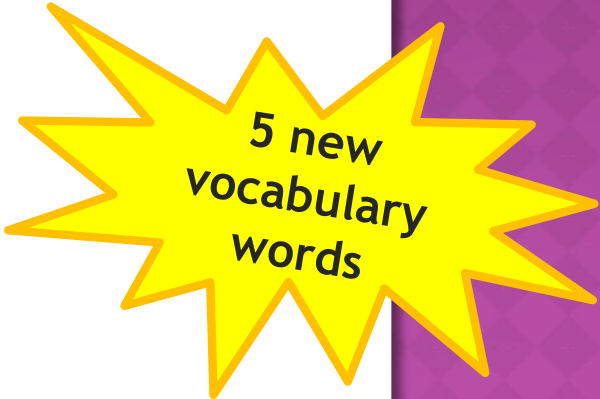
→ **NO ENERGY REQUIRED**

ACTIVE TRANSPORT

Another way to get things in
or out of the cell!

ACTIVE TRANSPORT

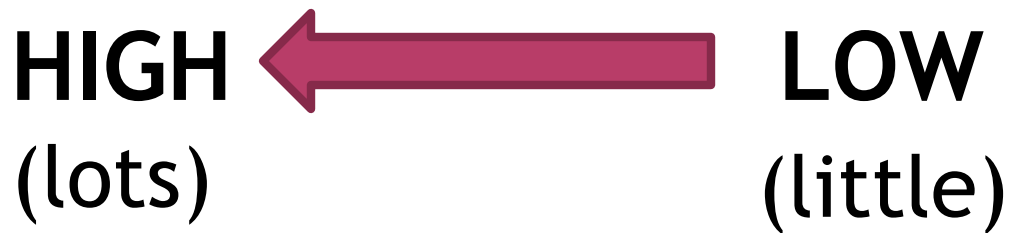
- Ion pumps (example: sodium/potassium pumps)
- Exocytosis - getting things OUT of the cell
- Endocytosis - ways of getting things INSIDE the cell:
 - Phagocytosis
 - Pinocytosis
- These need ENERGY!



5 new
vocabulary
words

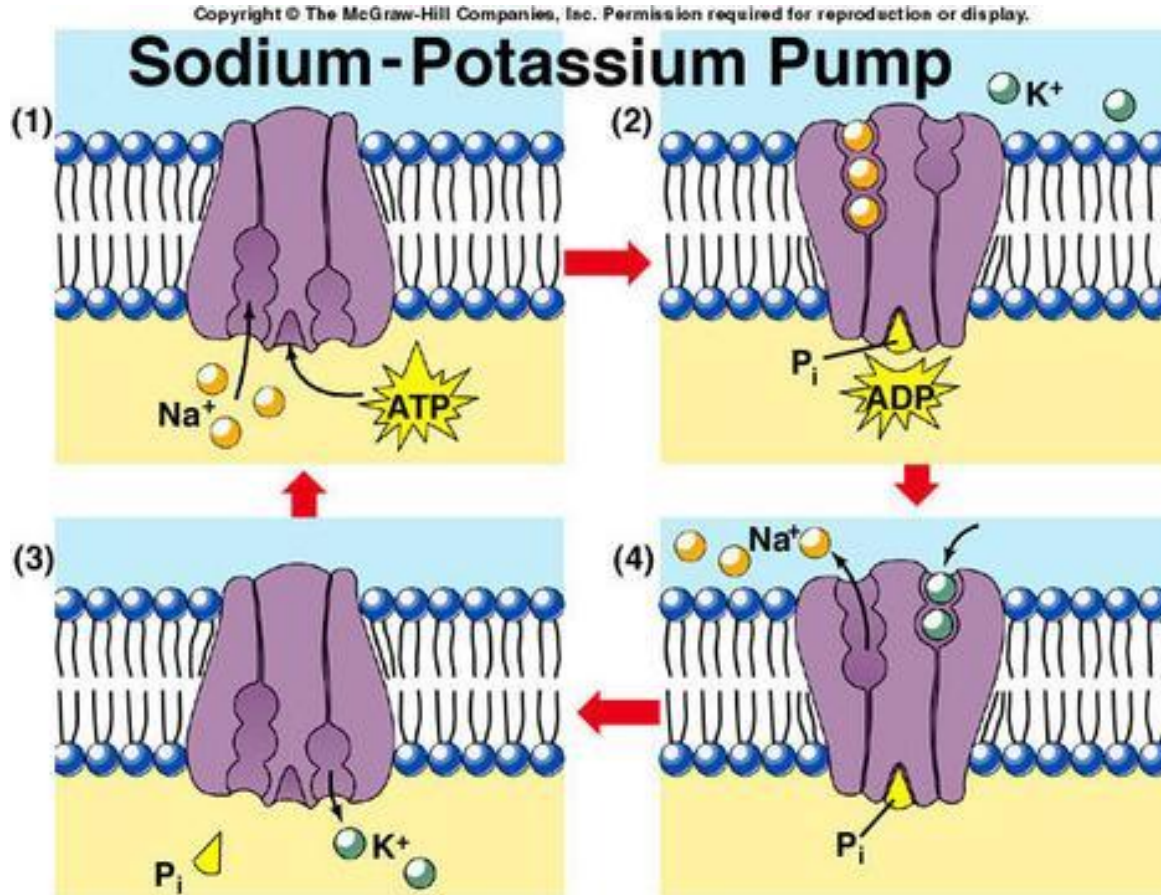
ION PUMPS

- Ions: positively or negatively charged atoms or molecules.
 - Examples: Sodium (Na^+), Potassium (K^+)
- Ion pumps: proteins move ions *AGAINST* the concentration gradient → from a LOW concentration to a HIGH concentration.



- This requires LOTS of energy!

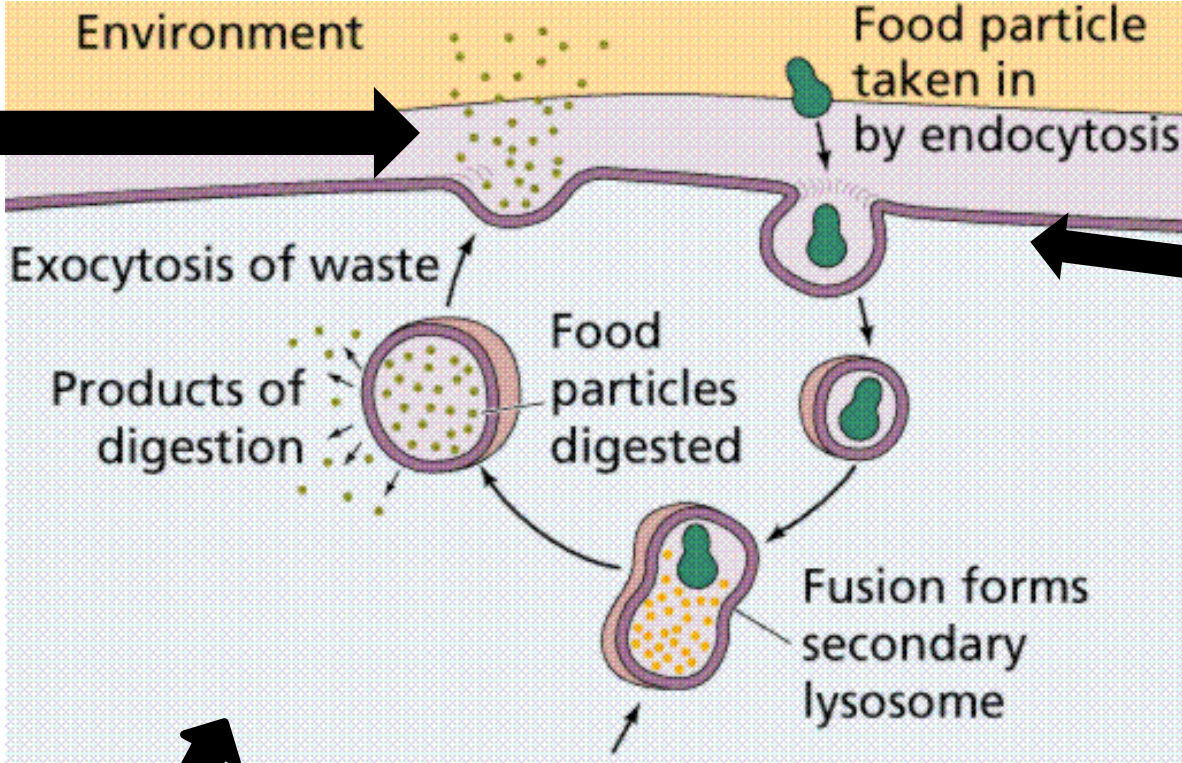
EXAMPLE OF AN ION PUMP



*Ion pumps are important for producing electrical impulses by nerve cells

Remember: ion pumps move ions from LOW \rightarrow HIGH concentrations

EXOCYTOSIS AND ENDOCYTOSIS



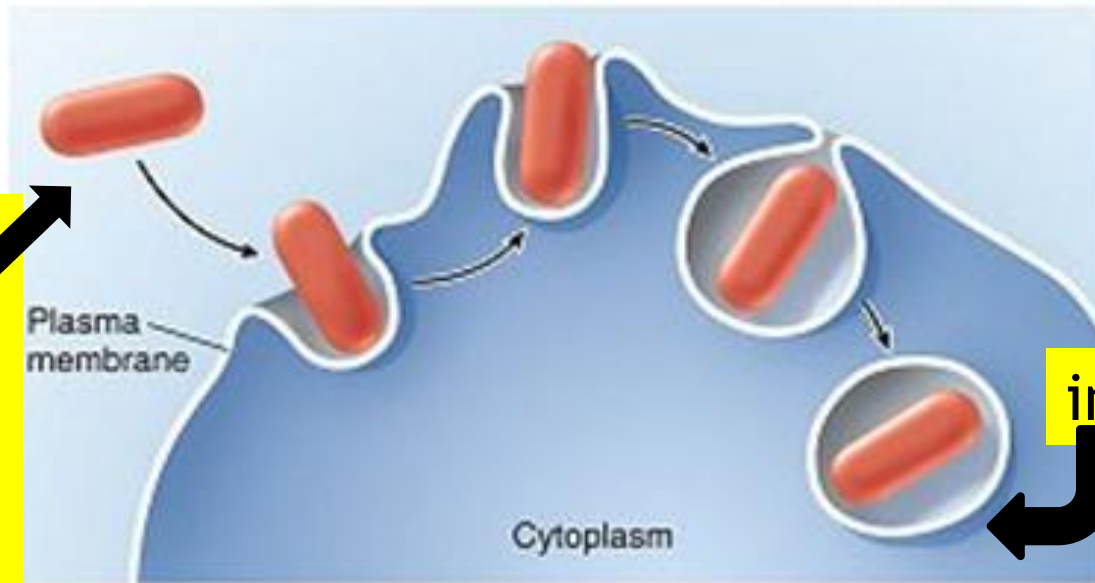
Getting rid of waste through exocytosis

Taking in food through endocytosis

inside of a cell

PHAGOCYTOSIS

- “Cell eating”
- Type of *endocytosis* - big molecules are brought INTO the cell.
- The cell membrane surrounds the molecule then engulfs it.



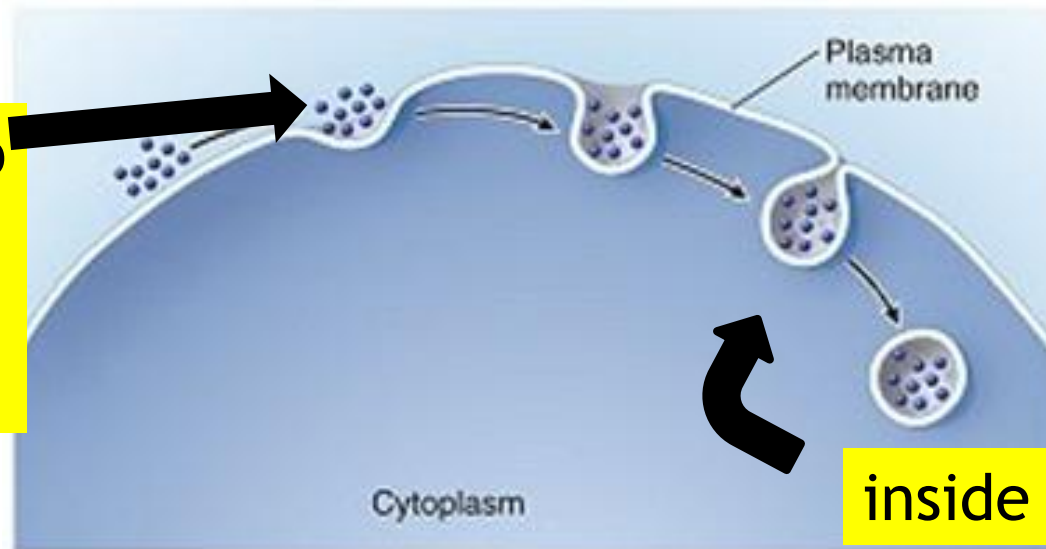
thing about
to be
engulfed by
cell
membrane

inside of a cell

PINOCYTOSIS

- “Cell drinking”
- Type of *endocytosis* - liquids are brought into the cell.
- The cell membrane surrounds then engulfs the liquid.

liquid about to be engulfed by cell membrane



inside of a cell

REVIEW.....

1. What is the main difference between PASSIVE TRANSPORT and ACTIVE TRANSPORT?
2. What are the 3 types of PASSIVE TRANSPORT?
3. True or False? In the 3 types of passive transport molecules move from a HIGH concentration to a LOW concentration.
4. What are the 5 types of ACTIVE TRANSPORT?
5. Which type of ACTIVE TRANSPORT moves things from LOW to HIGH concentration?
6. What is the name of the process in which cells get rid of waste?
7. What process describes “cell eating”?
8. What process describes “cell drinking”?
9. Do you categorize the processes in #7 and #8 as exocytosis or endocytosis?

REVIEW ANSWERS

1. What is the main difference between PASSIVE TRANSPORT and ACTIVE TRANSPORT?

Passive = no energy needed

Active = uses energy

2. What are the 3 types of PASSIVE TRANSPORT?

diffusion, osmosis, facilitated diffusion

3. True or False? In the 3 types of passive transport molecules move from a HIGH concentration to a LOW concentration.

TRUE... High → Low in diffusion, osmosis, & facilitated diffusion

4. What are the 5 types of ACTIVE TRANSPORT?

ion pumps, exocytosis, endocytosis, phagocytosis, pinocytosis

5. Which type of ACTIVE TRANSPORT moves things from LOW to HIGH concentration?

Ion pump

REVIEW ANSWERS

6. What is the name of the process in which cells get rid of waste?

Exocytosis

7. What process describes “cell eating”?

Phagocytosis

8. What process describes “cell drinking”?

Pinocytosis

9. Do you categorize the processes in #8 and #9 as exocytosis or endocytosis?

Endocytosis