

Cell Transport

Moving things into and out of the cell

KEY TERMS!

Concentration – (not thinking hard) but **how much** of something there is.
ex: The cafeteria becomes highly concentrated with students during lunch!

SEMI PERMEABLE MEMBRANE – refers to the cell membrane / phospholipid bilayer.

Semi permeable = sort of passable

Some things can pass, others cannot (too big)

Active – if you are active you use a lot of energy

Passive – if you are passive you are calm or chill

Endo – means inside like “end”ocrine

Exo - means outside like “exo” skeleton

Bulk – means a lot / mucho! Like when you buy at Sam’s or Costco, you are buying in bulk! A lot at one time.

Homeostasis

Homeostasis = Balanced

Your body tries to stay the same or balanced all the time.

For this reason, we move things in and out of the cell.

Passive Transport- movement of substances without the use of energy. This type of process is due to diffusion.

Diffusion occurs when particles spread from an area of greater or higher concentration to an area of low concentration.

There are 2 Types of Passive (calm) Transport.

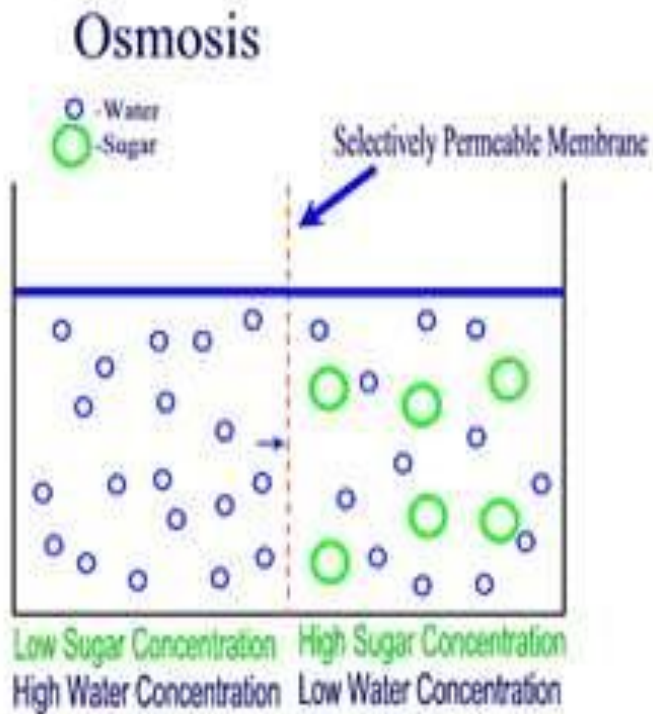
Remember, if it is passive or calm, you are
NOT USING ENERGY

If everyone is leaving the building during a fire drill and you are going with them, you do not need to use a lot of energy.

You just “go with the flow”!

Passive Transport #1.

Osmosis – The movement of water from high concentration to low concentration.



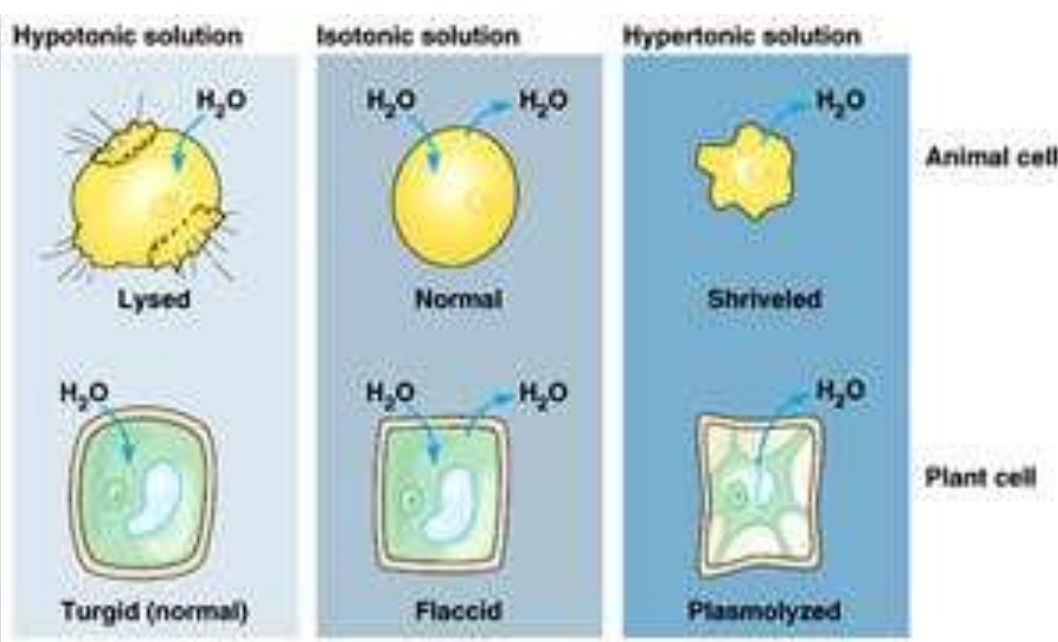
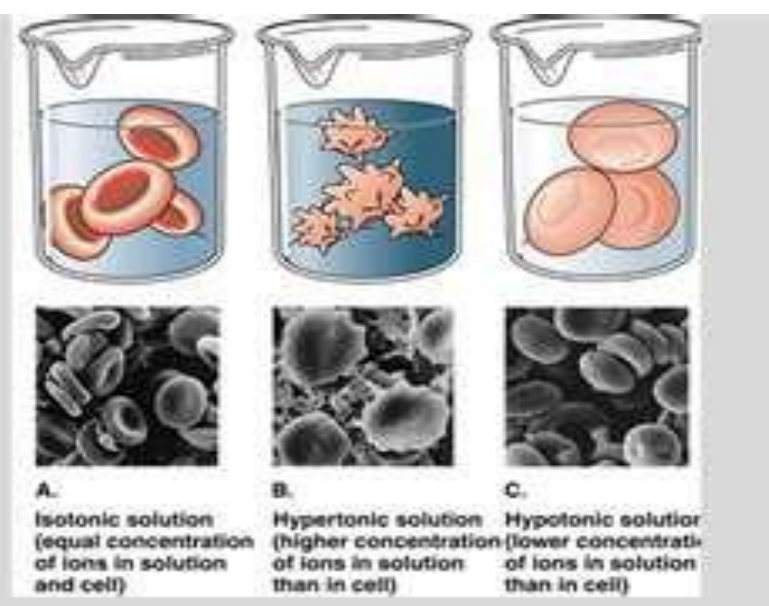
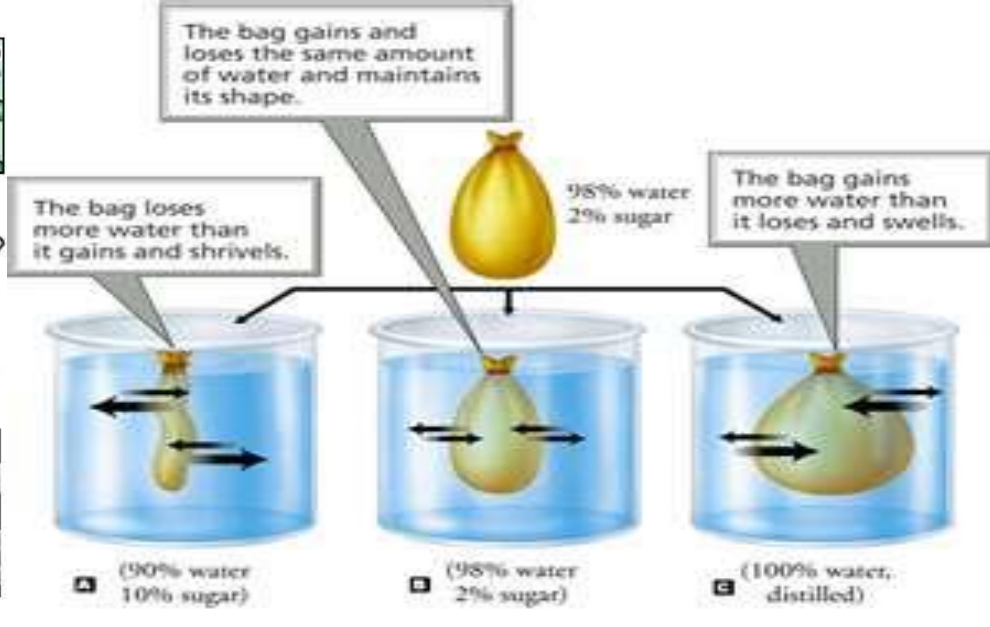
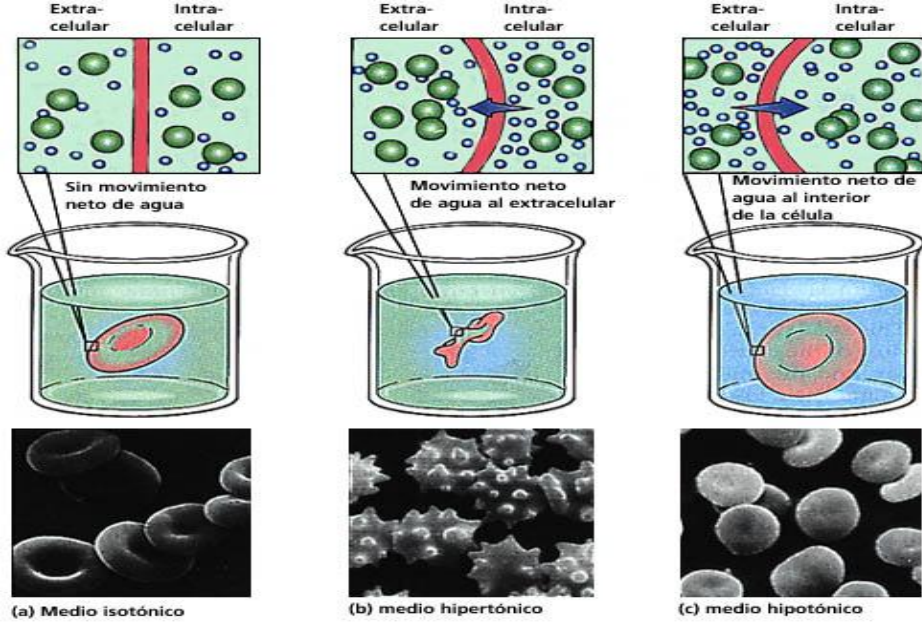
Osmosis = the
movement of
 H_2O _{smosis}

The movement of water can affect cells, blood cells, plant cells, etc.

HypOtonic – water rushes in and makes it big and fat like a big “O”. Hyp-O

Isotonic – water is well balanced, moves in and out evenly.

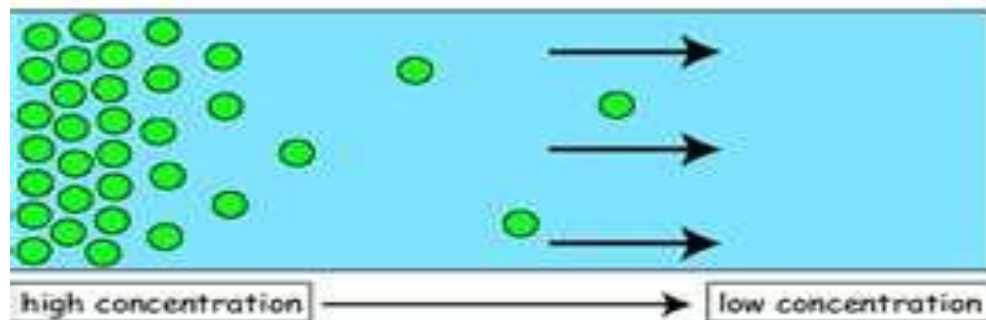
Hypertonic – water rushes out and the cell shrinks/shrivels.



Passive Transport #2

Diffusion (facilitated diffusion) is the movement of particles from an area of high concentration to an area of low concentration.

Diffusion



● solute

Solute transport is from the left to the right; movement of the solutes is due to the concentration gradient (dC/dx).

Remember: **Osmosis** is the movement of **water** and **diffusion** is the movement of **particles** from high to low concentration!

Now **Active Transport**

Active Transport - cells use energy to move materials across the cell membrane.

We will move from low to high concentration.
Against everyone in a fire drill. This takes
ENERGY!!!

Active Transport #1

Endocytosis –

Endo = inside Cyte = cell

Endocytosis is the movement of bulk solids or liquids inside the cell membrane.

2 types (A and B)

Endocytosis Continued

Pino = liquid

Cyte = cell

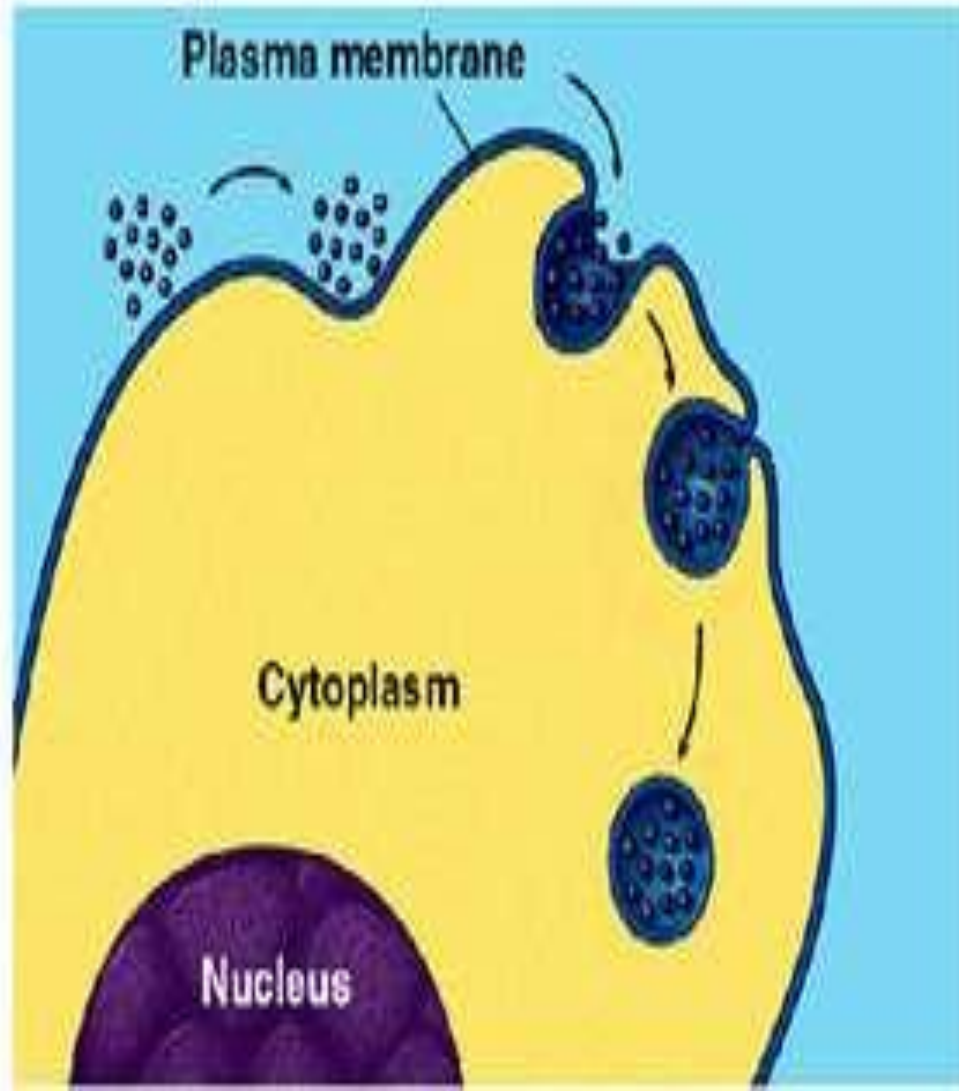
(A) Pinocytosis = the movement of liquids into the cell.

Phago = solid

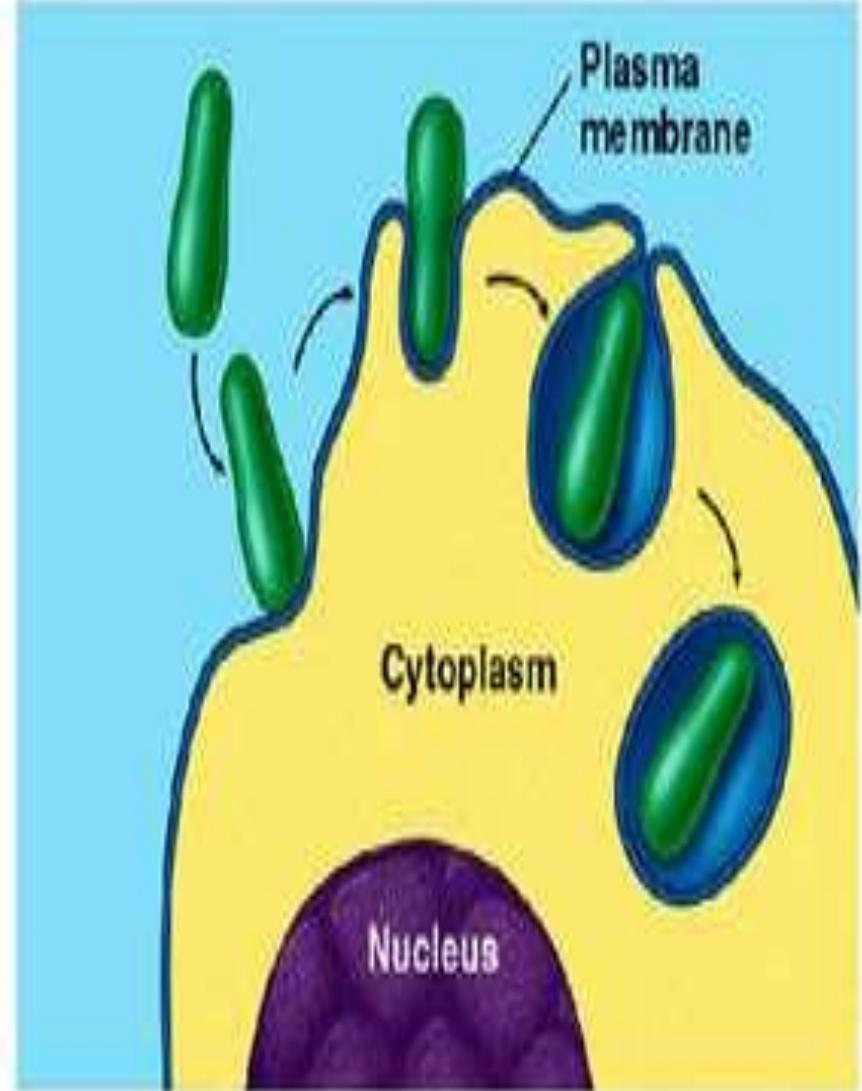
Cyte = cell

(B) Phagocytosis = the movement of solids into the cell.

Endocytosis – Pinocytosis



Endocytosis – Phagocytosis



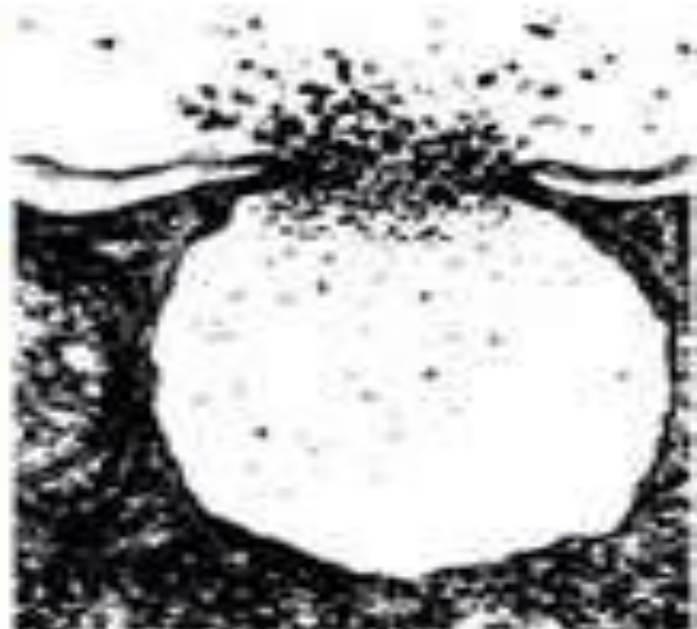
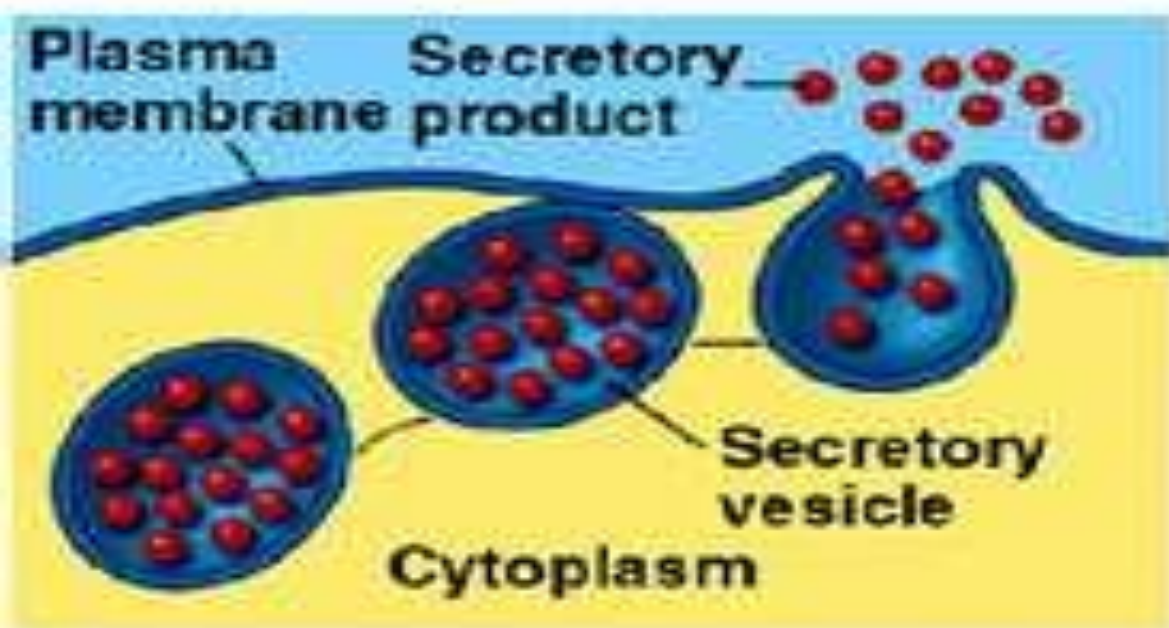
Active Transport #2

Exocytosis

Exo = outside Cyte = cell

Exocytosis is the movement of particles out of the cell.

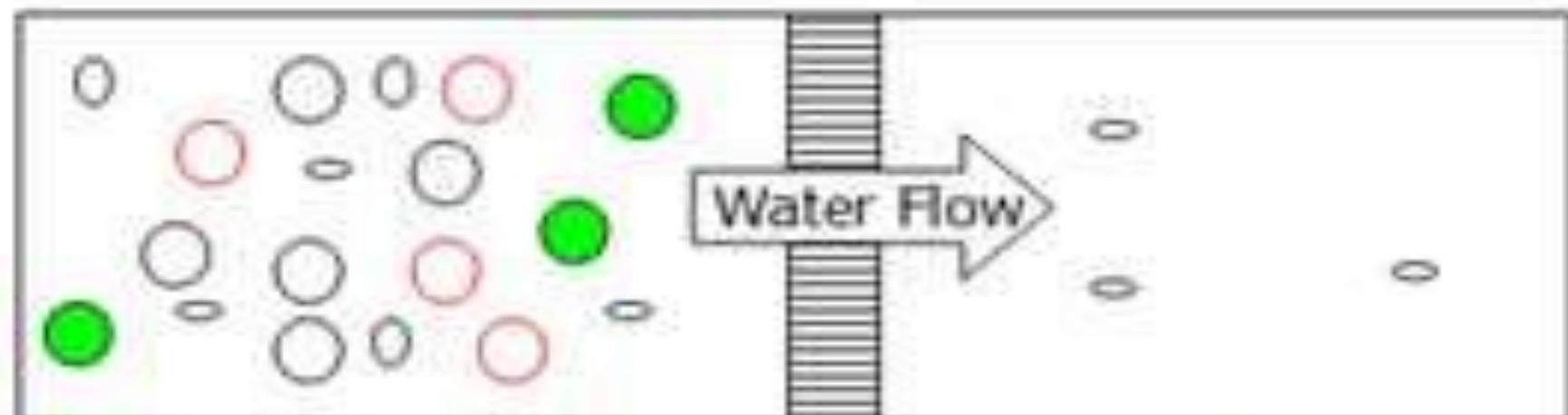
Exocytosis



Reverse Osmosis Technology

Contaminated Water

Almost Pure Water



Higher Water Pressure

Lower Water Pressure

Reverse Osmosis Membrane
0.0005 to 0.0000002 microns (μm)

Which way will the water / particles move to balance out the concentration?

