Tonicity

What do you notice about the pictures?

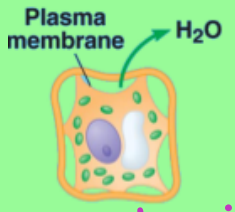
When solutions move across the cell membrane, we can compare how concentrated they are to one another.

In other words, does the inside or outside of cell have a higher concentration of molecules?

Ways to describe Tonicity

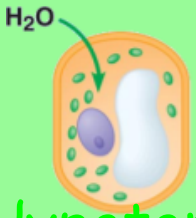
Click on each to learn more

1



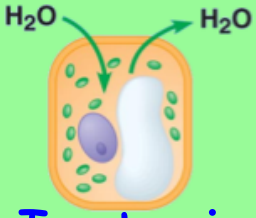
Hypertonic

2



Hypotonic

3

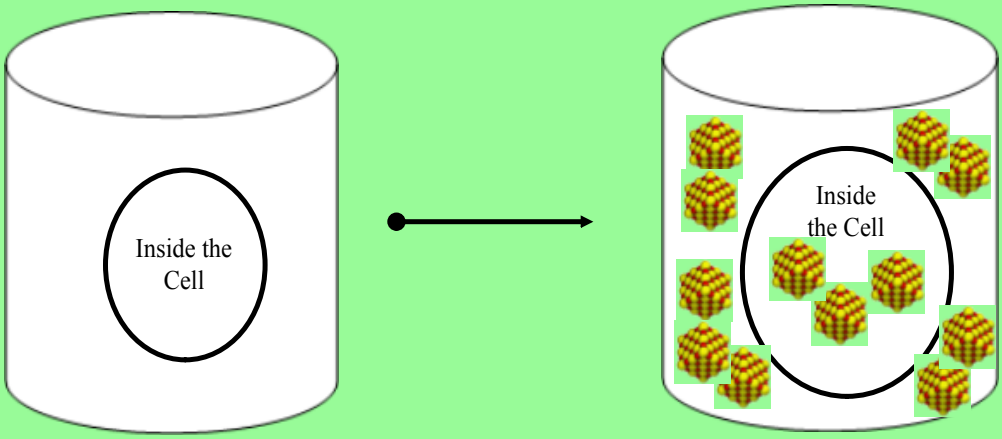


Isotonic

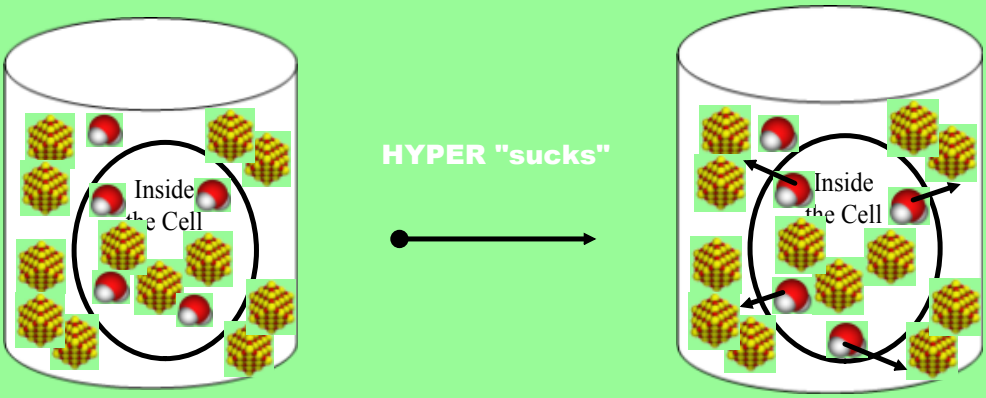
Hypertonic

When the outside of the cell has a higher concentration of molecules than inside the cytoplasm of a cell

Pull



In a Hypertonic solution which way will water move?



Will the cell shrink, expand, or stay the same?

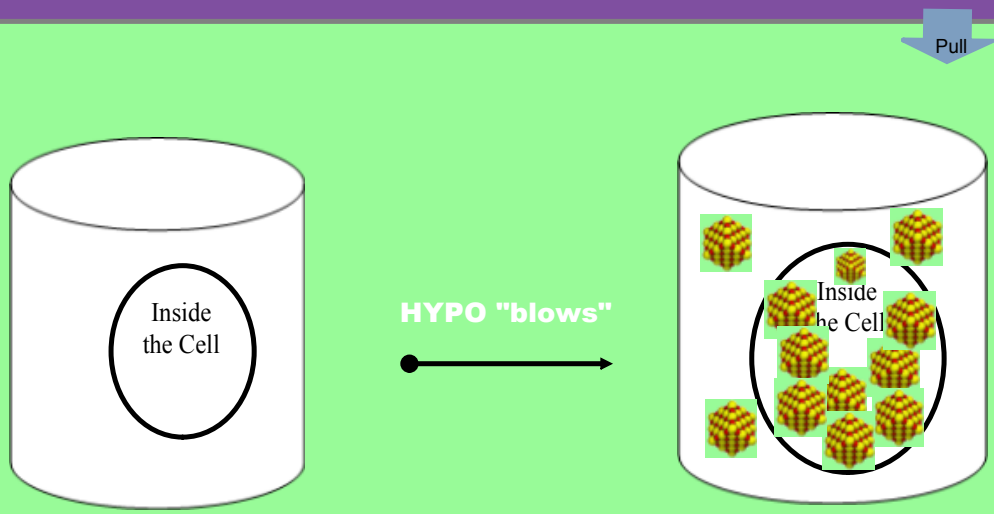
Water moves from high to low, or outside the cell.
Thus, the cell will shrink.

Answer

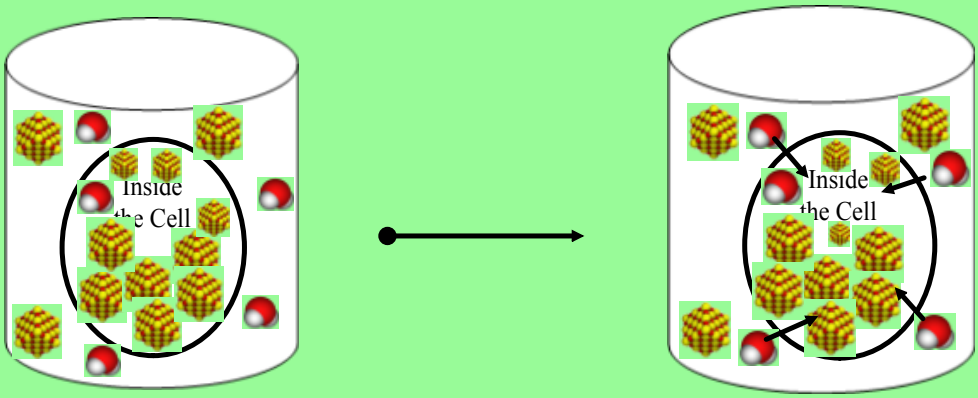
click to return

Hypotonic

When the outside of the cell has a lower concentration of molecules than inside the cytoplasm of a cell



In a Hypotonic solution which way will water move?



Will the cell shrink, expand, or stay the same?

Water will move into the cell where there is a lesser concentration causing the cell to expand.

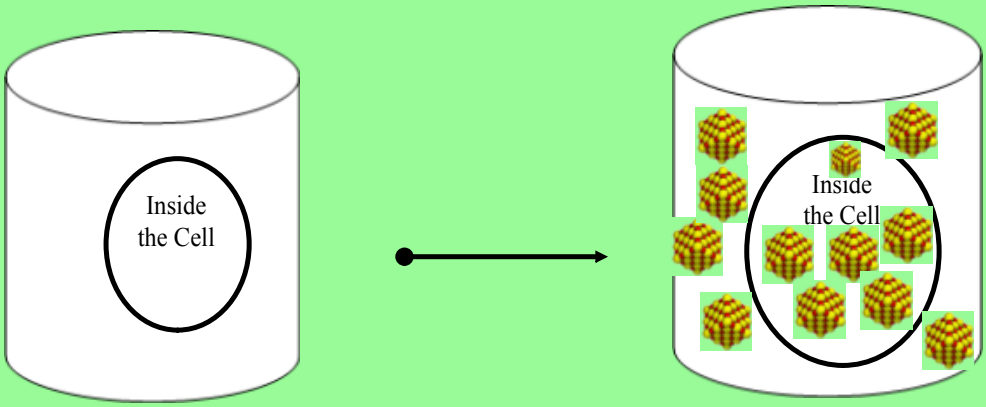
Answer

click to return

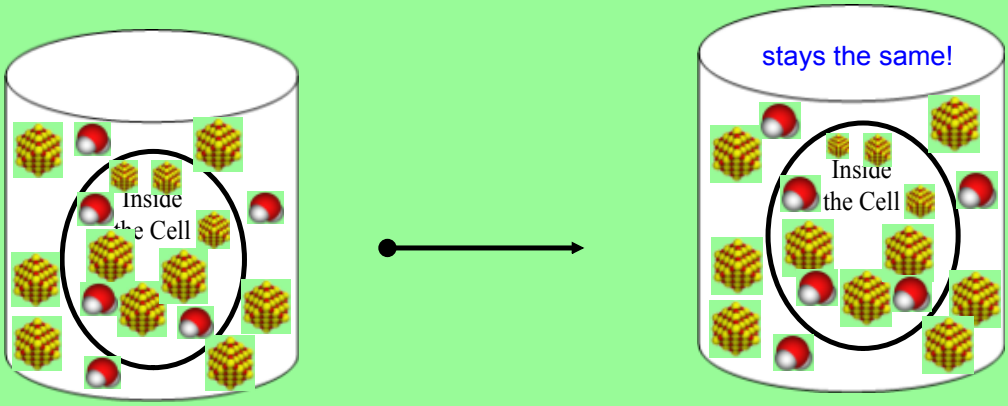
Isotonic

When the outside of the cell has an equal number of molecules as inside the cell.

Pull



In a Isotonic solution which way will water move?



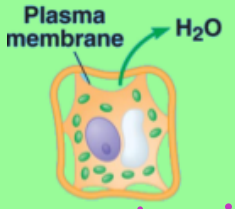
Will the cell shrink, expand, or stay the same?

Because concentrations of solutes and water are equal, water will stay in place and no change will occur.

Answer

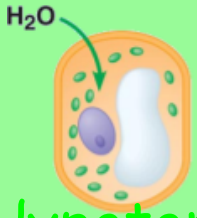
click to return

Hyertonic v. Hypotonic Animation!



Hypertonic

click to see video

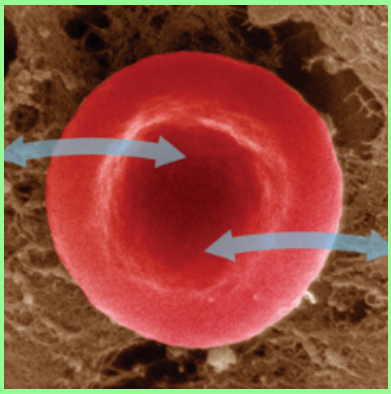


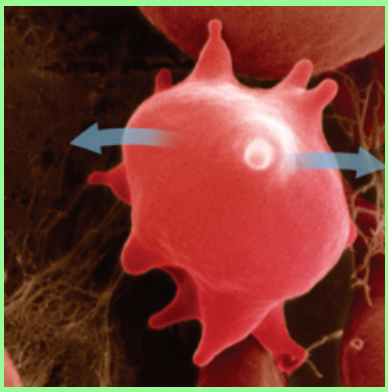
Hypotonic

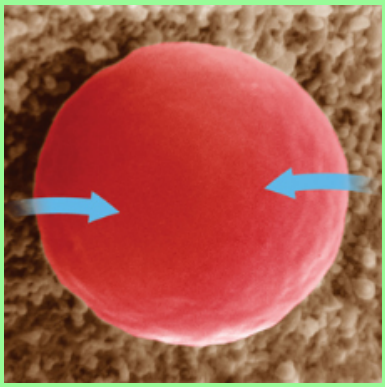
Mix and Match!

Match the solution to the cell...

Hypertonic | Hypotonic | Isotonic





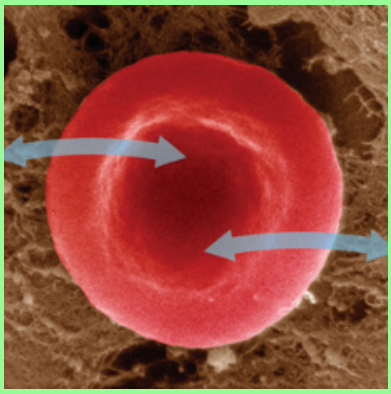


Click here to watch!

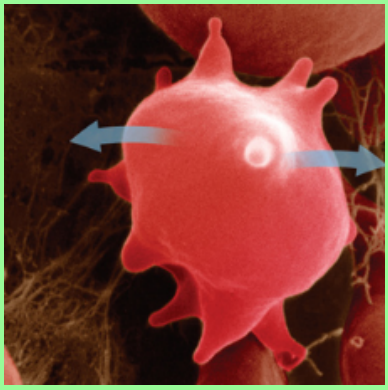
Mix and Match!

Match the solution to the cell...

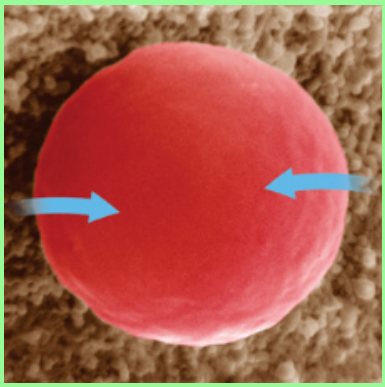
Isotonic



Hypotonic



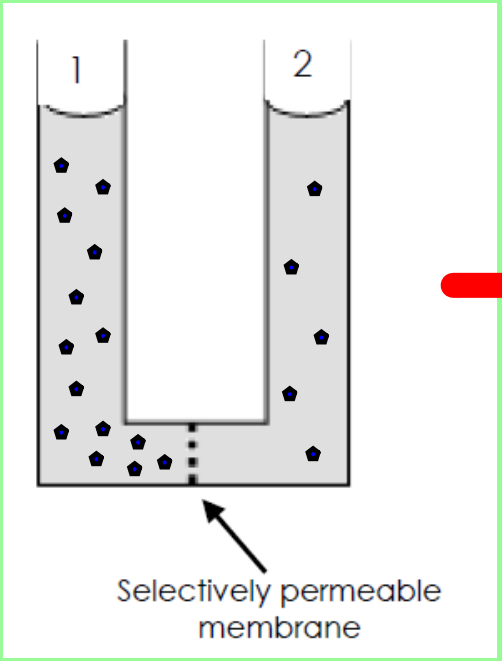
Hypertonic



Click here to watch!

Look at the U-tube below...

=Salt Molecule



What will the U-tube look like after salt moves through the membrane?

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