

# Process of Osmosis

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In the previous segment of the chapter 'Cell - The Fundamental Unit of Life', we got introduced to the process of **Osmosis**. In this segment, let us learn more about the process of Osmosis and understand the transportation of molecules in a cell.

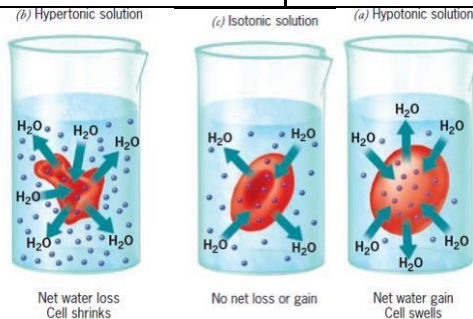
## What are the Three types of osmotic solutions?

Osmosis is the process in which water moves from higher water concentration to lower water concentration through a semi-permeable membrane.

For example, the swelling of raisins when kept in water for some time.

The movement of water is affected by the amount of the substance dissolved in it. Depending on the concentration of the solution, there are three types of osmotic solutions.

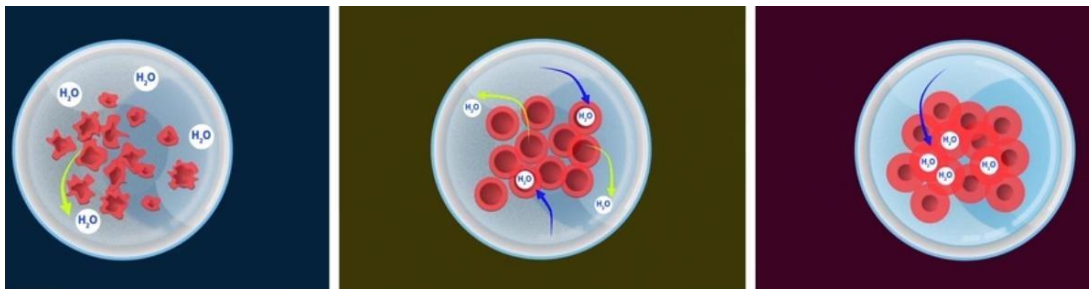
	<b>Hypertonic Solution</b>	<b>Isotonic solution</b>	<b>Hypotonic Solution</b>
<b>Water in the cell</b>	More than in surrounding	Same as in surrounding	Less than in surrounding
<b>Water in the surrounding</b>	Less than in cell	Same as in cell	More than in cell
<b>Cells</b>	Shrink	No change	Swell



## RBCs in different types of salt solutions

Let us understand these different solutions better with the examples of RBCs and salt solutions.

- **Hypertonic Solution** - The water content in the surrounding solution is less as compared to the cells placed in it. So, the salt content of the solution is more making it a concentrated solution. The water molecules start moving from inside the cells to the outside solution as the concentration of water is higher within the cells. The cells shrink in this type of solution.
- **Isotonic Solution** - The level of salt and water is the same on either side of the cell membranes, that is, within and outside the cell. There is a balance in the movement of water as the movement is the same in either direction. As a result, the size of the cell did not change. So, the two solutions are isotonic when the concentration of water is the same on either side of the semi-permeable membrane.
- **Hypotonic Solution** - The cells are surrounded by a dilute solution, that is, by higher water concentration. The salt dissolved is less and the water content is higher. Therefore, water molecules move inside the cells and hence the cells got swollen. Such a solution has a higher water concentration compared to the other.



**Hypertonic Solution, Isotonic solution, Hypotonic Solution**

## Summary

<b>Osmosis</b>	Osmosis is the process in which water moves from higher water concentration to lower water concentration through a semi-permeable membrane.
<b>Types of Solutions</b>	<ul style="list-style-type: none"> <li>● Hypertonic Solution</li> <li>● Isotonic Solution</li> <li>● Hypotonic Solution</li> </ul>

## What's next?

In our next segment of Class 09 Science, we will get introduced to the **Nucleus**.