

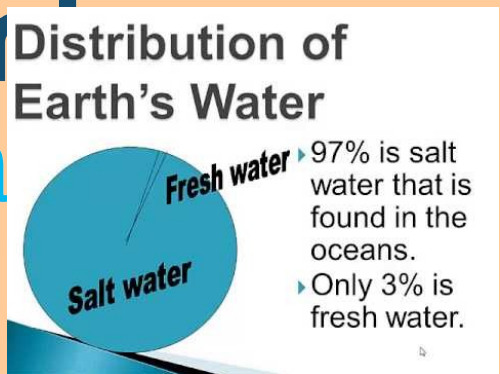
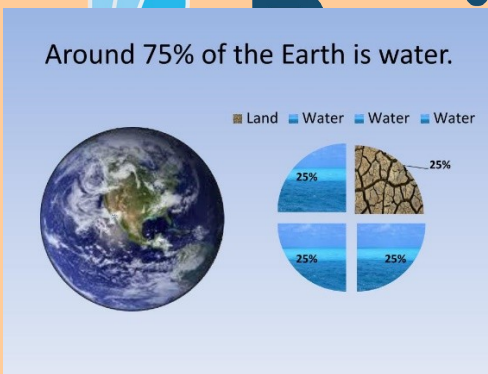
Chapter 04

Transportation Through Plasma Membrane

Importance of osmosis and diffusion:

Let us understand the Importance of osmosis to living organisms.

- Three fourth of the earth is covered with oceans.
- Though plenty of water is there, we cannot use it, since it is salty.

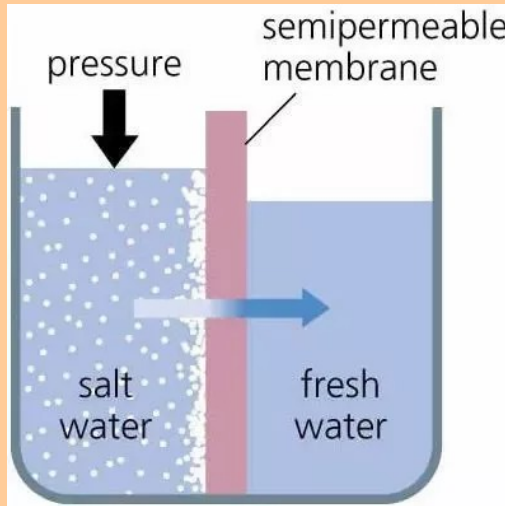


- If we remove salts somehow, we will be able to use it, right?

We can remove salt from seawater by using a semi permeable membrane by a process called desalination.

We have salt solution on one side of the membrane and fresh water on the other side of semi permeable membrane.

When heavy pressure is applied on salt solution, the water moves from salt solution into fresh water leaving the salt behind.



- This process is known as reverse osmosis and its principle is osmosis.

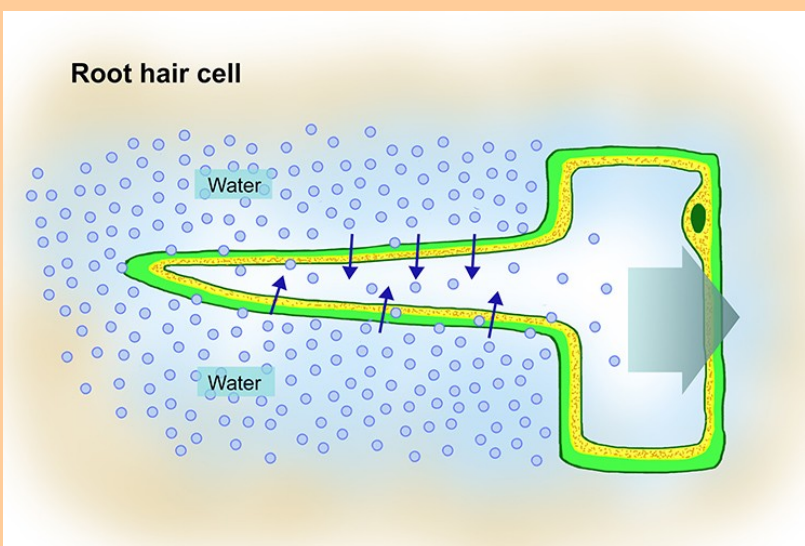
Nowadays domestically used reverse osmosis machines are available in the market, which filters salt water through three membranes.



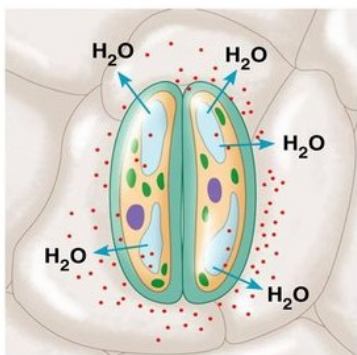
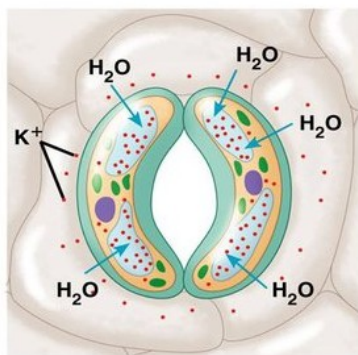
Uses of Osmosis:

Osmosis is helpful to us in many different ways.

- Water enters the roots through osmosis.

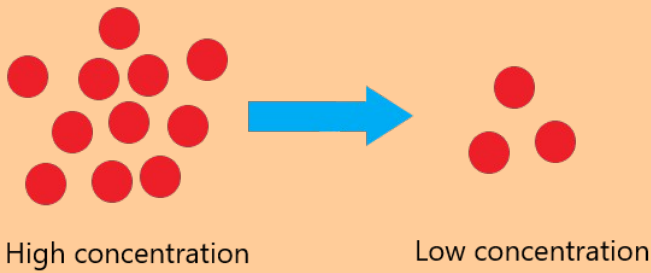


- Water moves between the cells through osmosis.

Cells Turgid/Stoma Open**Cells Flaccid/Stoma Closed**

- Osmosis helps in opening and closing of stomata.
- Osmosis brings about movement of water and minerals in certain plants.
- Our body waste materials are filtered from the blood with the help of osmosis.
- In our body, useful materials are absorbed along with water through osmosis.
- Apart from osmosis, there are other ways in, which materials move in a medium.
- If a bottle of scent is opened in one corner of a room, the smell spreads in the entire room.
- The smell is not spreading uniformly in the entire room. The smell is more when you are near to the bottle, and is less when you move far away from it. This is due to a process called diffusion.

Diffusion



- Diffusion is the net movement of molecules from a region of higher concentration to a region of lower concentration through a medium.
- The medium can be air, liquid etc.
- Air fresheners, agarbatti, mosquito repellents works on the principle of diffusion.

