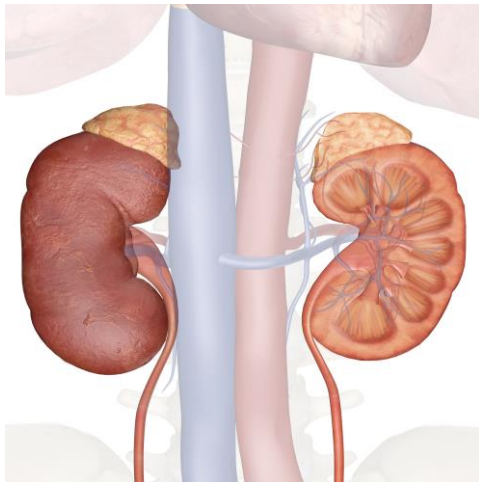


# LIFE PROCESSES

Class 10 Biology

## EXCRETION

PART 3/3



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# ARTIFICIAL KIDNEY(HAEMODIALYSIS)

Kidneys are vital organs for survival.

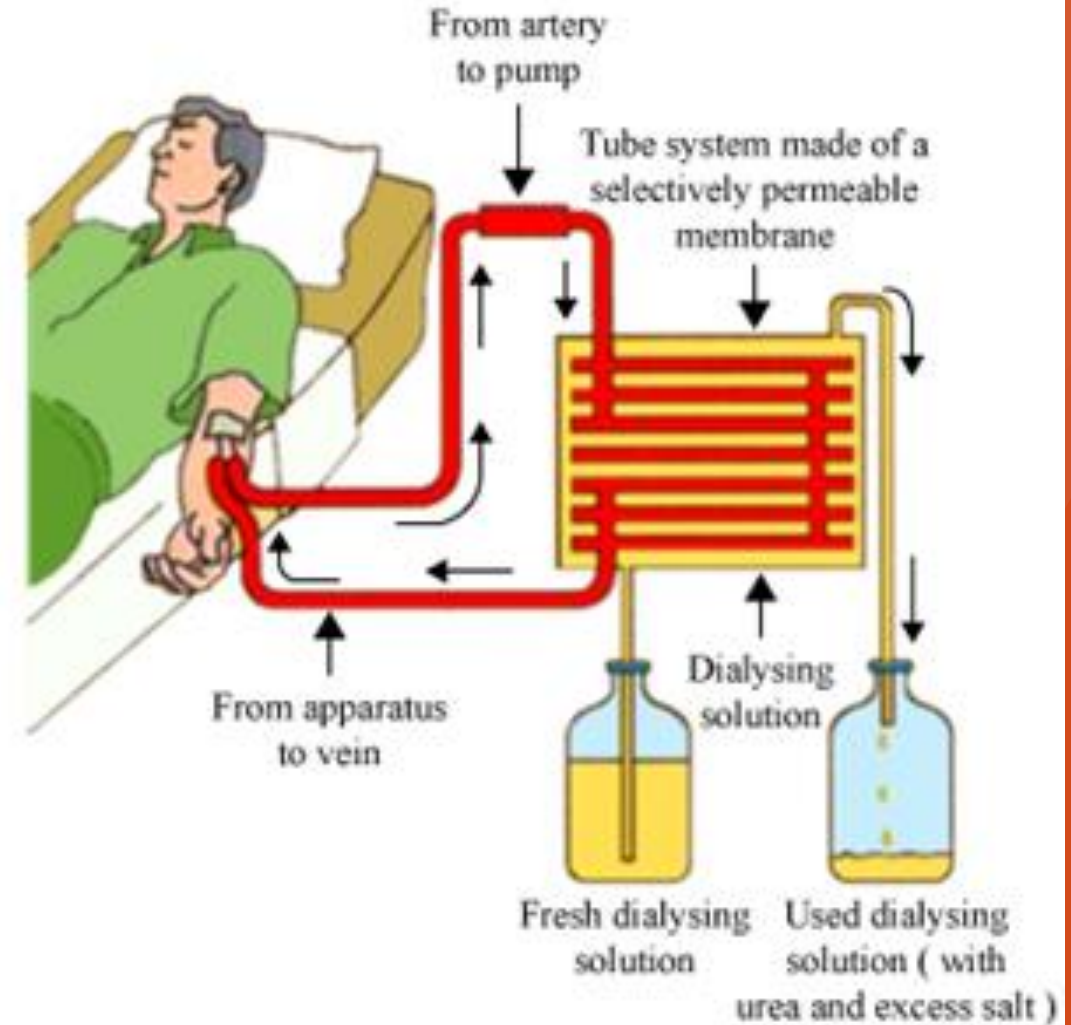
Several factors like infections, injury or restricted blood flow to kidneys reduce the activity of kidneys.

This leads to accumulation of poisonous wastes in the body, which can even lead to death.

In case of kidney failure, an artificial kidney can be used.

An artificial kidney is a device to remove nitrogenous waste products from the blood through dialysis.

Artificial kidneys contain a number of tubes with a semi-permeable lining, suspended in a tank filled with dialysing fluid.



**This fluid has the same osmotic pressure as blood, except that it is devoid of nitrogenous wastes.**

The patient's blood is passed through these tubes.

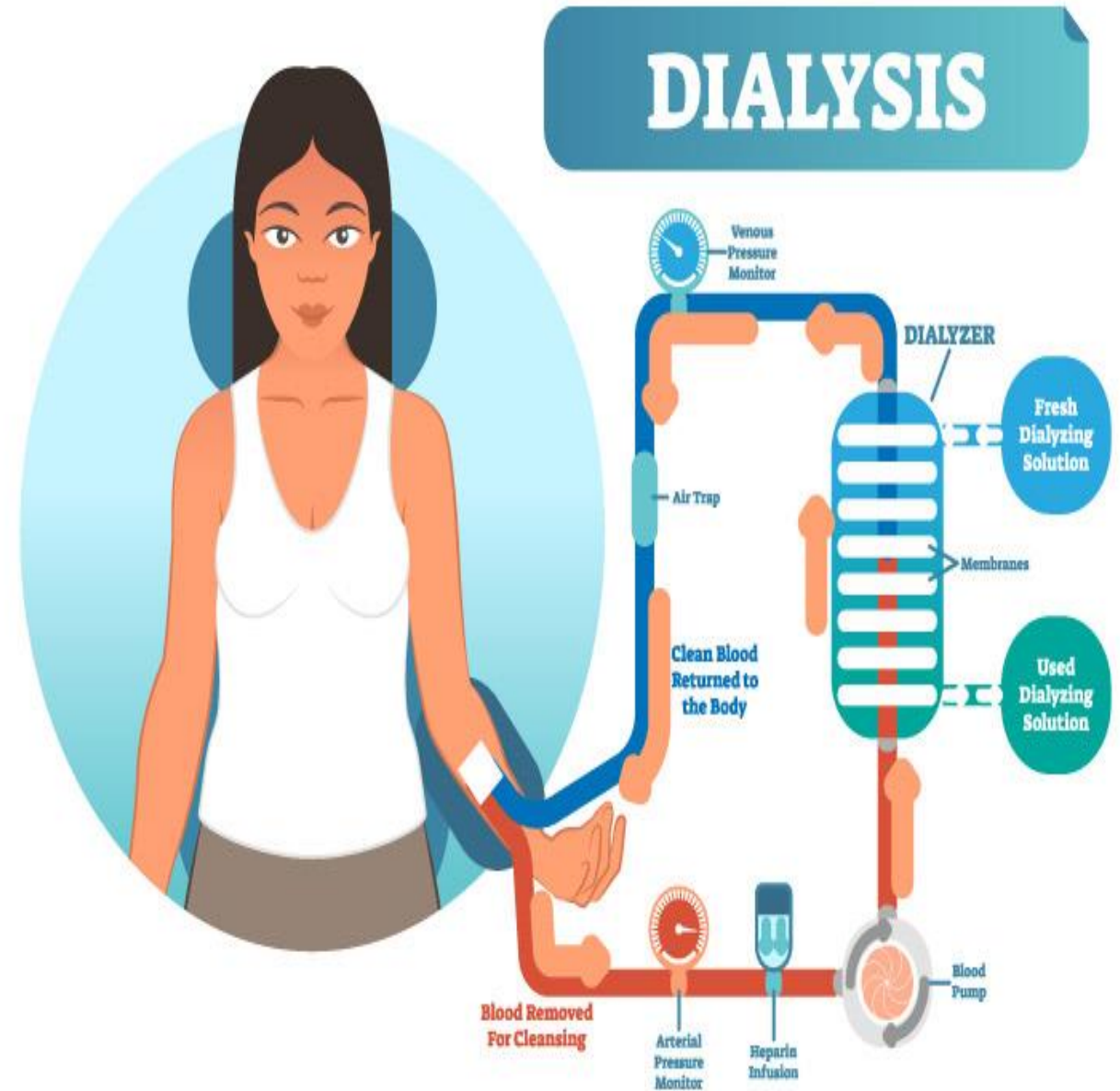
During this passage, the waste products from the blood pass into dialysing fluid by diffusion.

The purified blood is pumped back into the patient.

**This is similar to the function of the kidney, but it is different since there is no re-absorption involved.**

Dialysis helps in the following ways:

1. It removes wastes, salt and excess water from the body, preventing their build-up.
2. It keeps the levels of certain chemicals in safe limits.
3. Dialysis also helps to control blood pressure.



# EXCRETION IN PLANTS

Plants use completely different strategies for excretion than those of animals. Oxygen itself can be thought of as a waste product generated during photosynthesis.

They can get rid of excess water by transpiration.

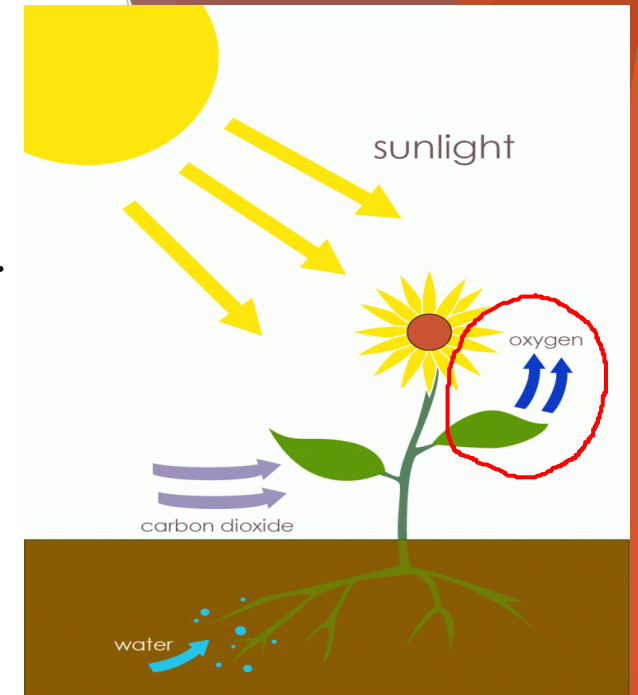
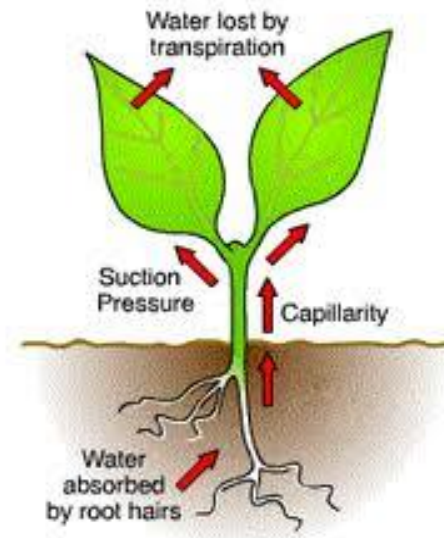
For other wastes, plants use the fact that many of their tissues consist of dead cells, and that they can even lose some parts such as leaves.

Many plant waste products are stored in cellular vacuoles.

Waste products may be stored in leaves that fall off.

Other waste products are stored as resins and gums, especially in old xylem.

Plants also excrete some waste substances into the soil around them.



# EXCRETION IN PLANTS

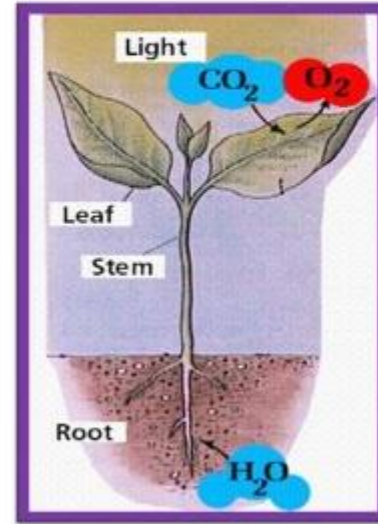


Rubber Tree

Rubber from latex of Rubber Tree



Latex



## Gum oozes out of a branch

Gum



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**Guttation** - The loss of excess water as liquid drops from the margins of leaves of herbaceous plants, occurring when root pressure is high and **transpiration** is low. The water usually contains sugars and/or salts.



SOME species have salt glands in the leaves to **excrete** excess salt

## Points to remember

To get rid of excretory products plants use the following ways:

- 1) In many plants waste products are stored in vacuoles of the cells.
- 2) Some waste products are stored in the leaves. they are removed as the leaf fall off.
- 3) some waste products such as resins, gums are stored especially in non-functional xylem.
- 4) Some waste products such as tanins, resins, gums are stored in the bark and thereby removed by peeling
- 5) Plants also excrete some waste substances through roots into the soil around them
- 6) excess water is get rid by the plants by the process of transpiration.
- 7)  $O_2$  which can be considered as a waste product is moved out by diffusion through the stomata.



Source: NCERT Text book and Google

***THANK YOU***