

## Osmoregulation in Fishes

Fishes are aquatic vertebrates. They live in freshwater, seawater and in brackishwater. Fishes are *homeosmotic* animals. They maintain a constant concentration of their body fluid.

They are *osmoregulators* because they regulate the concentration of their fluid by the exchange of fluids and salts between the body fluid and external medium.

They are *osmotically stable* because they maintain a stable internal medium.

They are *euryhaline* animals because they can tolerate wide changes in salinity.

They develop different mechanisms to maintain a suitable internal medium.

Osmoregulation in fishes can be discussed under the following headings:

1. Osmoregulation in freshwater teleosts.
2. Osmoregulation in marine teleosts.
3. Osmoregulation in migratory fishes
4. Osmoregulation in marine elasmobranchs.
5. Osmoregulation in freshwater elasmobranchs

### 1. Freshwater Teleosts

The body fluid of freshwater teleost fish is *hypertonic*. The freshwater is *hypotonic*. Hence *endosmosis* occurs. As a result, freshwater enters into the body fluid and the volume of body fluid increases.

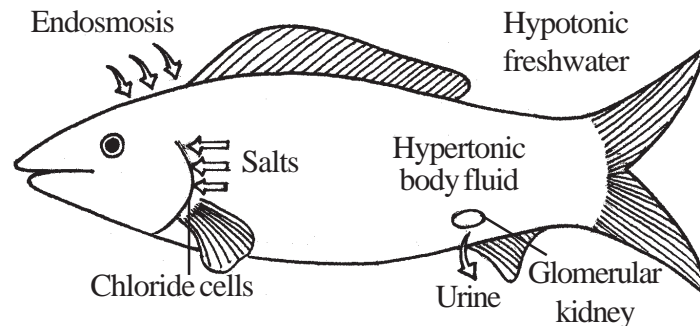


Fig.17.9: Osmoregulation in freshwater teleost.

Excess of water is removed in the form of urine by the *glomerular kidney*.

Along with urine some amount of salt is also lost. Hence the salt content of the body fluid decreases. This salt loss is made good by the absorption of salts from the freshwater by the *chloride cells* of the gill.