## Life Processes

## **Respiration in Animals**

## **RESPIRATION IN ANIMALS:**

Except endoparasites, such as, Taenia (tape worm), Ascaris, etc. which respire anaerobically, most of the animals respire aerobically.

- **Respiratory organs in animals** :-Various animals possess different organs for the exchange of gases. These respiratory organs found indifferent animals are designed to suit their habitat. The following organs act as respiratory organs in different animals.
- (a) General body surface : In lower organisms, such as, protists, sponges, cnidarians (Protozoa, *Hydra*, Planaria, etc.) exchange of gases occurs through the body surface via the cell membraneby simple diffusion.



Figure : Cell surface exchange of gases in Amoeba

(b) Skin or body surface : The skin or general body surface or epidermis acts as respiratory organ in some animals, such as, annelids and amphibian that live in semiaquatic habitat. This type of respiration in which exchange of gases occurs through the skin is called cutaneous respiration.



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Figure : Cutaneous exchange of gases in Earthworm

(c)Tracheae (air tubes) : Terrestrial arthropods, such as, insects, millipedes and centipedes have thick impermeable integument to minimize loss of water from their body surface by evaporation. They have evolved a complex system of whitish, shining, intercommunicating air tubes called tracheae. The exchange of gases with the help of tracheae is termed tracheal respiration.





**Gills :-** Aquatic animals, such as, prawns, mussels, fishes and tadpoles, breathe water. They draw oxygen dissolved in water and release carbon dioxide into water. The organs used for breathing waterare called **gills**. The exchange of gases in the gills is known as **branchial respiration**.



Figure : Gill respiration in Fish. A. gill chamber with operculum removed.A.gill filaments.C. gill lamellae.

(a) Repiration through gills – Bronchial respiration
(b) Repiration through skin – Cutaneous Respiration
(c) Rrspiration through Lungs – Pulmonary Respiration
Respiratory organs in frogs :(i) Skin (iii) Bucco-pharyngeal cavity (iii) Lungs

Some important characteristics of respiratory organs of animals are:

- They have large surface area to get enough oxygen.
- They have moist thin walls for easy diffusion and exchange of gases.
- They have rich blood supply with respiratory pigments for transport of respiratory gases.