

The Respiratory System :

This system is composed of :

- 1.nose
- 2.pharynx
3. larynx
4. trachea
5. bronchi
6. bronchioles
7. alveoli of the lungs.

The functions of the nose :

1. Filtration of the inspired air due to presence of the hairs at the entrance of the nostrils.
2. Warming of inspired air
3. humidification of inspired air due to presence of mucus.

The pharynx: is common passage way for respiratory & digestive systems.

The larynx: is amusculo- cartilaginous system . It is principle organ of the phonation by its contents of vocal cords.

The trachea : Is kept open by presence of incomplete rings of cartilages in its wall. The mucous membrane is contain several mucous glands & cilia ,there for the secretion of glands & motion of cilia help to clean the trachea from dusts & foreign materials by stimulation of coughing reflex.

The bronchi : Like trachea in structure & function.

The bronchioles: are branched & re branched in lung tissues & finally end with alveoli .

The alveoli :

Are surrounded by capillaries of the lung & lined with two types of the cells :

1. Type I epithelial cells : flat cells
2. Type II epithelial cells : granular pneumocytes which are responsible for synthesis of surfactant.

The surfactant :

Is the chemical substance composed of phospholipids , protein & calcium ions . The main function of it is decrease the surface tension of fluid that lining the alveoli during expiration & maintain the stability of alveoli in different sizes & prevent the collapse of the lung.

The respiration is consist of two mechanisms :

1. Inspiration → active process
2. Expiration → passive process

There are two types of respiration :

1. External respiration :

Means absorption of oxygen & removal of Co₂ from the body as a whole by lungs. The O₂ flow from alveoli into capillaries & CO₂ moves from capillaries to alveoli across the respiratory membrane by passive diffusion along the gradient of partial pressure of gases .

2. Internal respiration :

Is the gaseous exchange between the tissues & their fluid medium . In tissues the O₂ flows from blood within capillaries into tissues & CO₂ moves from tissues to capillaries along this gradient also .

