

-the respiration is transport of O₂ from atmosphere to the cells (not to the lungs only)

-how the lungs work as a pump?

*when chest work as a pump it takes blood(suction) from the lower limb and abdomen to the heart.

-heat loss : 1- conduction. 2-convection. 3-radiation

-The PH of the blood is 7.4



-if there is more (H) than normal in the body (acidosis) the reverse reaction then (H₂O+CO₂) go out of the body by expiration.

-pulmonary ventilation → breathing (inspiration + expiration)

-the respiratory muscle move the chest cavity.

-nerve centers controlling respiration is in the brain stem.

*the damage of these nerve centers causes stop of respiration(breathing)

-how human release (H)? 1-(H) pump. 2-Na-H counter transport. 3-expiration

-the air passage and lung is divided into:

1-conducting zone (conduction of air)

2-respiratory zone (gas exchange)

1- conduction zone:

*its from nose to respiratory bronchioles

Function: 1-air conducting from atmosphere to the alveoli.

2-air filtration(large particles)

*by the movement of cilia particles go out.

*tissue macrophage develop phagocytic cell that protect alveoli from particles.

3-air conditioning. 4-humidification.

*bronchi is formed of C-shaped cartiliges , and its closed with smooth muscle.

WHY? To be able to tight it or to dilate it

5-protective reflexes:

WHY? For removal foreign bodies from the respiratory passage, its includes:

A-Sneezing reflex. → in the nose → deep inspiration → stop breathing → forced expiration.

B-cough reflex. → Foreign body in bronchi → deep inspiration → forced expiration against closed glottis.

6-smell. 7-phonation (no sound without expiration)

2-respiratory zone:-²

-the alveoli is 100 m² and its folded in the chest.

-if the chest cavity dilate these have dilate too:

1-transverse diameter.

2-longitudinal diameter.

3-antoposterieor.(العمق)

-inspiration:

-muscle controlling the inspiration:

1-**diaphragm** (dome shape). Contraction-flat-longitudinal-diameter increase-
(inspiration)

2- **external inter-costal muscle**

-**eversion** -**elevation**

-expiration:

*in it the pressure of inter thoracic cavity decreases.