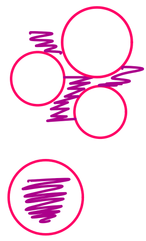
Mechanism of breathing

Wednesday, 29 May 2024 2:44 AM

1) Difference B/w Inter & Intra



Inter = In B/w (Ex- Intercellular = In B/w cells)

Intra = Inside (Ex- Intracellular = Inside cells)

2) Intra pulmonary pressure

↳ Pressure inside the lungs

We cannot directly Regulate Pressure inside our lungs.

∴ Acc. to Boyle's law

$$\text{Volume} \propto \frac{1}{\text{Pressure}}$$

we can alter volume of our thoracic chamber

Hence Creating a pressure difference

As for the Movement of Air a Pressure Difference is must.

Air flows from High conc. to low conc.

3) Inspiration :- Inhalation of Air.

4) Expiration :- Exhalation of Air

5) Change in Volume :-

In Anteroposterior Axis - Via- Diaphragm

In Dorsoventral Axis - Via- External Intercoastal Muscles

6) Process of Inspiration

Requires - ve Pressure gradient

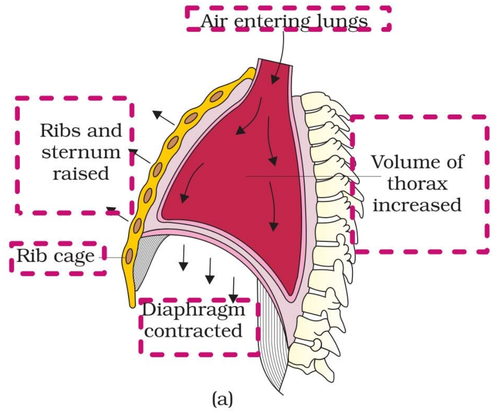
↳ Developed when there is

- Contraction of Diaphragm = Diaphragm flattens
- Contraction of External Intercoastal Muscle = Ribs Moves forward

Due to their contraction there is ↑ in volume & ↓ in Intra pulmonary pressure

∴ There is development of pressure gradient in b/w Atmospheric pressure & pulmonary pressure

Air Moves inside.



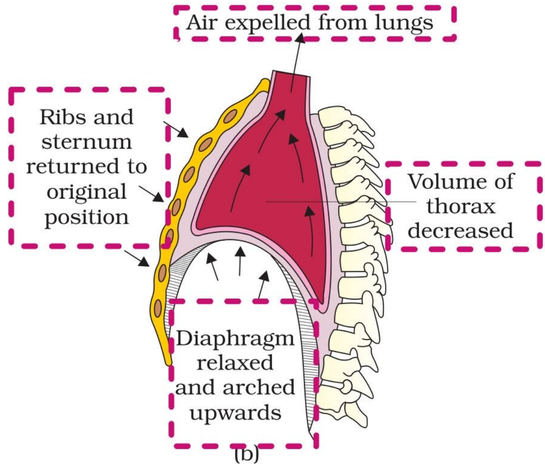
7) Process of Expiration

- Relaxation of Diaphragm = Diaphragm
- Relaxation of External Intercoastal Muscle = Ribs Moves

Due to their contraction there is ↓ in volume & ↑ in Intra pulmonary pressure

∴ There is development of pressure gradient in b/w Atmospheric pressure & pulmonary pressure

Air Moves outside



8) Forced Inspiration & Expiration

Use of Internal Intercoastal Muscles & Abdominal Muscles