S.No.	Respiratory volumes and capacities	Value
1	Tidal volume (TV)	500 ml
2	Inspiratory reserve volume (IRV)	2500-3000 ml
3	Expiratory reserve volume (ERV)	1000-1100 ml
4	Residual volume (RV)	1100-1200 ml
5	Inspiratory capacity (TV + IRV)	3500 ml
6	Expiratory capacity (TV + ERV)	1600 ml
7	Functional residual capacity (ERV + RV)	2300 ml
8	Vital capacity (TV + IRV + ERV)	4600 ml
9	Total lung capacity (TV + IRV + ERV + RV)	5800 ml

Transport of Respiratory Gases.

Transport of O_2 during Respiration.

- 97% of O_2 → transported by RBCs.
- 3% gets dissolved in → plasma
- Hb pigment present in RBCs gives Red colour to blood.
  - * O_2 binds with Hb → oxyhemoglobin

This binding depends upon

- partial pressure of O_2
- partial pressure of CO_2
- H^+ concentration
- Temperature

1 Hb molecule can carry 4 molecules of O_2 (oxyg

Ideal conditions for formation of oxyhemoglobin

- High pO_2
- low PCO_2
- ↓ H^+ conc.
- ↓ Temperature

These are met in alveoli

But in tissues opposite conditions exist. So, O_2 gets dissociated from the oxyhaemoglobin

* Every 100mL of blood → gets deoxygenated in lungs

↓

can deliver 5 mL of O_2 to tissues

Transport of CO_2 during Respiration.

- Around 20-25% of CO_2 ⟶ carried by Hb as carbino-haemoglobin
- 7% is carried in dissolved state in Plasma
- Remaining is carried as bicarbonate

Ideal condition for formation of carbino-haemoglobin are {DEPTH OF BIOLOGY}

High PCO_2

other factors affecting carbinohemoglobin are PO_2, H^+ conc., Temperature.

- PCO_2 is high in tissues, so, carbino-haemoglobin is formed.
- But in alveoli PO_2 is high so, CO_2 gets dissociated from carbino-haemoglobin. {DEPTH OF BIOLOGY}

Carbonic Anhydrase — Enzyme

- present in high conc. in RBCs.
- in small quantities in plasma.

*This facilitates the reaction (reversible) in both directions.

Hence, the bicarbonate formed releases CO_2 to alveoli formed in tissues.

Every 100 ml of deoxygenated blood

↓ {DEPTH OF BIOLOGY}

can deliver 4 ml of CO_2 to alveoli