

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

{DEPTH OF BIOLOGY}

Transport of Respiratory Gases.

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Transport of O_2 during Respiration.

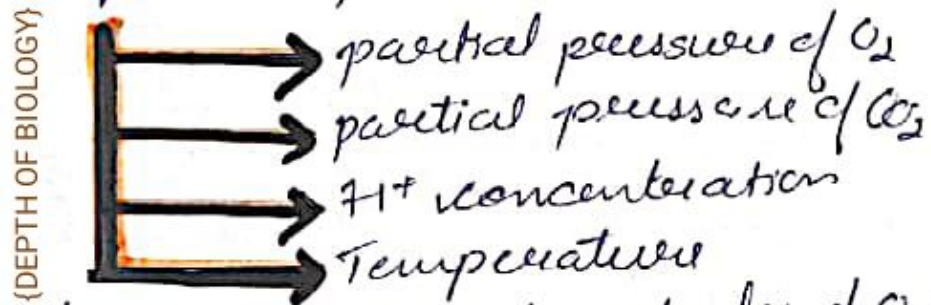
• 97% of O_2 \longrightarrow transported by RBCs.

• 3% gets dissolved in \longrightarrow plasma

• Hb pigment present in RBCs gives Red colour to blood.

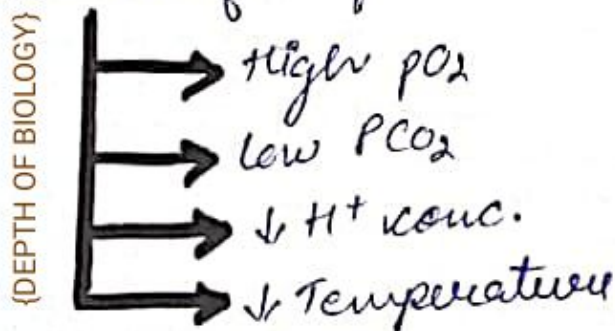
* O_2 binds with Hb \longrightarrow oxyhaemoglobin

This binding depends upon



1 Hb molecule can carry 4 molecules of O_2 (oxygen)

Ideal conditions for formation of oxyhaemoglobin



These are met in alveoli

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

* Every 100ml of blood \longrightarrow gets deoxygenated in lungs

can deliver 5ml of O_2 to tissues

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Transport of CO_2 during Respiration.

- Around **20-25%** of CO_2 \longrightarrow 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 carbino-haemoglobin are PO_2 , H^+ conc., Temperature. {DEPTH OF BIOLOGY}

- 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

\downarrow
can deliver **4 ml** of CO_2 to alveoli {DEPTH OF BIOLOGY}