

Lung Volume & Capacities : — There are basically 4 diff. lung volumes & 4 diff. lung capacities as measured by an instrument called spirometer at different point in the lungs.

Lung Volume : —

1) Tidal Volume / Resting tidal Volume : — It is the volume of air taken in & gives out during quiet respⁿ. (about 500 ml). During forced respⁿ, the volume increase to nearly 10 folds. This is the largest possible respiratory volume.

2.) Inspiratory reserve Volume (IRV) : — It is a volume of air taken in by maximum inspiratory effort after a normal inspiration. Thus it is an extra amount of air that is taken in (2000 - 3300 ml.) (av. 2500 ml.).

3.) Expiratory reserve Volume (ERV) : — It is the extra amount of air that is breathed out by forced expiratory effort after normal expiration (1200 ml.).

4.) Residual Volume (RV) : — Even after forced expiration some amount of air remains in the lung i.e. to say lung is never emptied. This much amount is called residual volume of lung (1200 ml.) This is to protect the lungs from collapsing. This ensures gaseous exchange all the time.

Lung Capacities : —

1.) Inspiratory Capacity (IC) : — $IV + IRV = 3300 \text{ ml}$

2.) Functional residual Capacity (FRC) : — It is the volume of air that remains in the lung after quiet expiration, i.e.

$$RV + ERV = 1200 + 1200 = 2400 \text{ ml.}$$

3.) Total Lung Capacity ^(TLC) — It is the volume of air that the lungs can hold after a maximum as possible inspiration.

$$\text{ie. } IC + FRC = 5700 \text{ ml.}$$

$$TV + IRV + ERV + RV = 5700 \text{ ml.}$$

4.) Vital Capacity ^(VC) — It is the largest possible resp. volume that can be breathed out by forced expiration after a forced inspiration, ie.

$$IC + ERV = 4500 \text{ ml.}$$