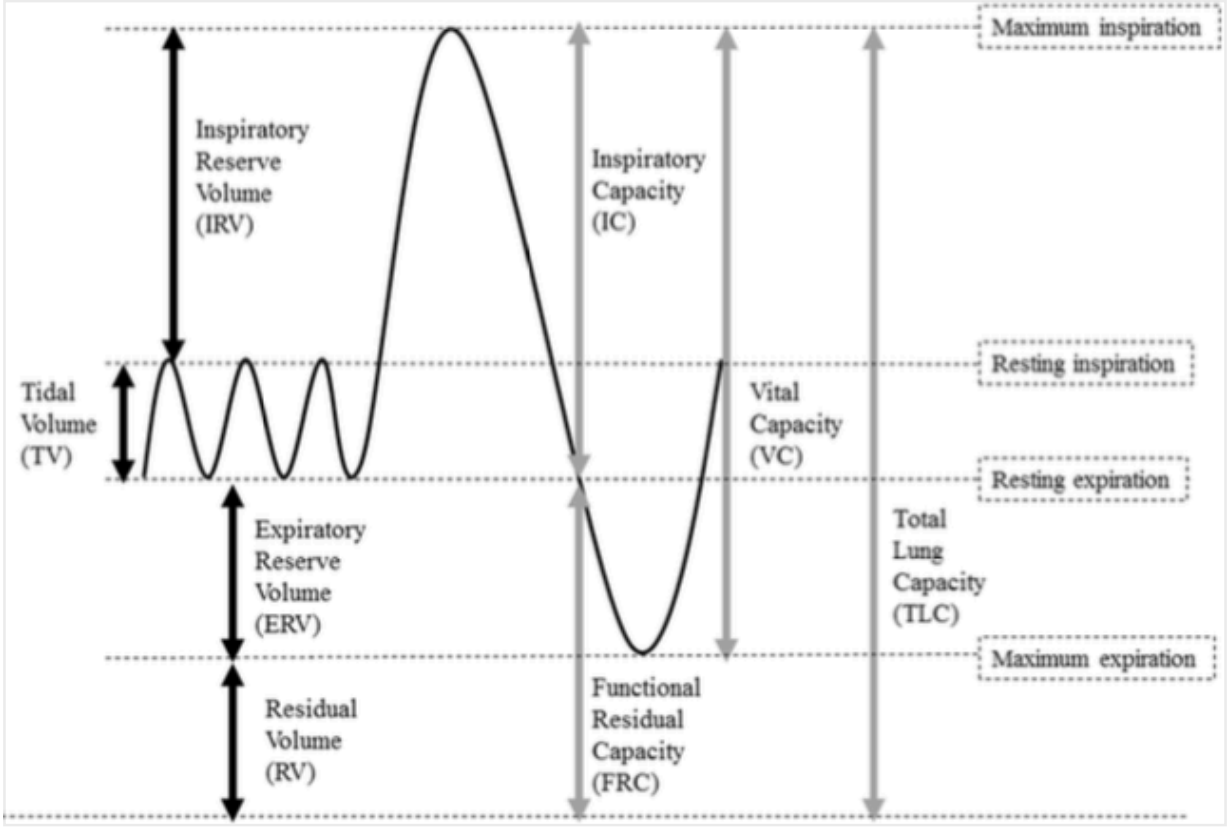
Lung Volume

(Lutfi 2017)
Four standard lung volumes

- tidal (TV),
- inspiratory reserve (IRV),
- expiratory reserve (ERV),
- residual volumes (RV).

The standard lung capacities are

- inspiratory (IC),
- functional residual (FRC),
- vital (VC) and
- total lung capacities (TLC).



Body plethysmography and dilutional techniques may under-and overestimate lung volumes and capacities, respectively.

In comparison, chest wall tends to recoil outward as far as the lung is filled with 80% of TLC or less. At lung volumes more than 80% of TLC, the chest wall recoils inward.

https://www.vedantu.com/question-answer/the-resting-tidal-volume-to-vital-capacity-ratio-class-10-biology-cbse-5f5b0e236e663a29cc16f1d7
The resting tidal volume to vital capacity ratio should be 1:10.

https://www.ncbi.nlm.nih.gov/books/NBK482502/
Tidal volume is the amount of air that moves in or out of the lungs with each respiratory cycle. It measures around 500 mL in an average healthy adult male and approximately 400 mL in a healthy female.

Due to continuing research in lung-protective mechanical ventilation, using tidal volumes of **6 mL/kg** of predicted body weight is the common practice nowadays.

(Bellemare 2003)
The volume of adult female lungs is typically 10–12% smaller than that of males who have the same height and age.

The sum of the individual maximal excursions, equals 124% VC in the standing posture and 127% VC in the supine posture.

(Konno 1966)
(V: change in volume; M: change in motion)
For rib cage: V = 0.7 M.
For abdomen: V = 0.28M.