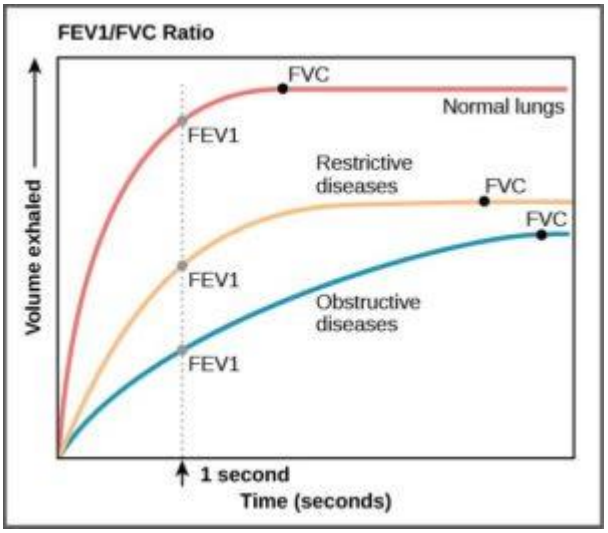
For ospes

- Hayem's fluid used for RBC counting
- Turk's solution used for WBC counting
- The stem in RBC pipette has markings 0.5, 1 and 101
- The stem in WBC pipette have markings 0.5, 1 and 11
- A patient presents in OPD with DLC values; N60, L25, E10, M5, B0. His TLC is 7000 per mm^3.
  Calculate the absolute count
  ANSWER
  <u>To find absolute count of neutrophils</u>
  In 100 cells we have 60 neutrophils
  So in 7000 cells we'll have x neutrophils
  100 → 60
  7000 → x
  To find x we use cross multiplication
  X = $\frac{7000\ x\ 60}{100}$ = 4200 neutrophils

- Calculation of WBC count = 50x
- Calculation of RBC count = 10,000x
- Dilution factor of WBC = 20
- Dilution factor of RBC = 200
- 

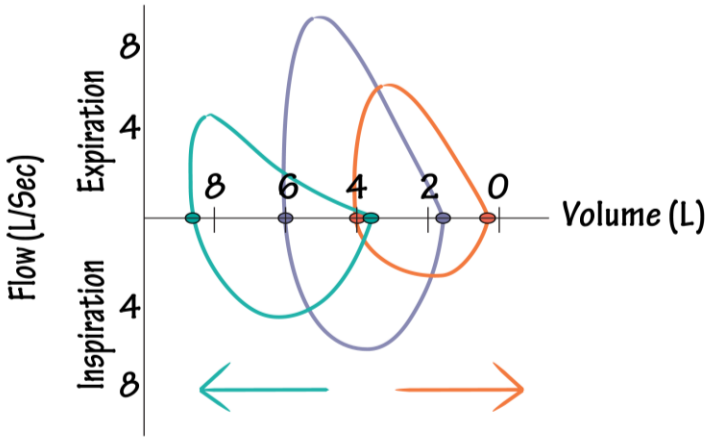
- In restrictive lung disease
  - FEV1 and FVC decrease
  - FVC decrease markedly
  - FEV1/FVC ratio remains normal or is higher
- In obstructive lung disease
  - FEV1/FVC ratio always decrease

- The FEV1/FVC ratio is the ratio of the forced expiratory volume in the first one second to the forced vital capacity of the lungs.
  The normal value for this ratio is above 0.75-85, though this is age dependent.
  Values less than 0.70 are suggestive of airflow limitation with an obstructive pattern
  Restrictive lung diseases often produce a FEV1/FVC ratio which is either normal or high

- Restrictive Respiratory Diseases
  - Paralysis of diaphragm
  - Pleural effusion
  - Flail chest (broken ribs)
  - Polio myeilitis
  - Myasthenia gravis

- Obstructive respiratory diseases
  - Asthma
  - Chronic bronchitis
  - Emphysema
  - Cystic fibrosis

- **DYNAMIC FLOW VOLUME LOOPS**



Obstructive: Loop shifts Left,
Volumes are > than normal;
FEV1 decreases more than FVC
(lower FEV1/FVC).

Restrictive: Loop shifts Right;
Volumes are < than normal.
FEV1 and FVC decrease in proportion
(normal or even elevated FEV1/FVC)

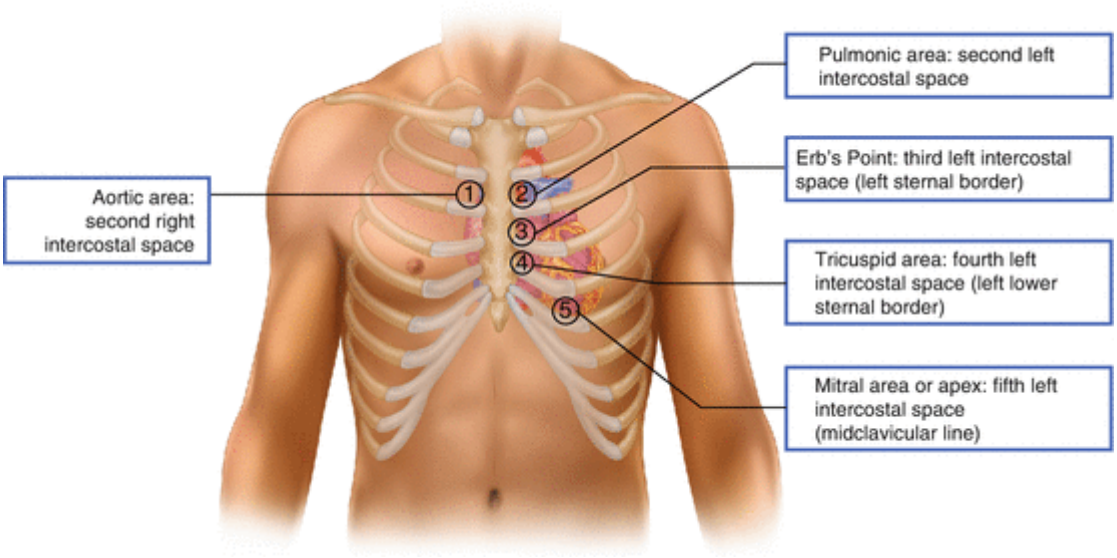
- Dilution factor of WBC = $\frac{0.5\ L\ (blood)}{101-1} = \frac{0.5}{100} = \frac{1}{200}$

- Dilution factor of RBC = $\frac{0.5\ L\ (blood)}{11-1} = \frac{0.5}{100} = \frac{1}{20}$

- Buffy coat have platelets and WBCs

- Heart rate = $\frac{300}{number\ of\ large\ squares\ between\ two\ R\ waves}$
- Heart rate = $\frac{1500}{number\ of\ small\ squares\ between\ two\ R\ waves}$

- Wintrobe's tube white marking is used for PCV while its red marking is used for ESR
- In Hb tube, yellow marking is for gram percent (11 to 14g normal)
- Auscultation areas



- ECG Waves