Lungs

• Organs of respiration
• Two, lie on either side of mediastinum surrounded by the right & left pleural cavities
• Right lung is larger
Topography of Lungs
Anterior View
• Each lung is cone shaped, with a
  • Base
  • Apex
  • Two surface-
    • costal
    • mediastinal
  • Three borders-
    • Inferior
    • Anterior
    • Posterior
- **Fissures & lobes of lungs**
- **Oblique fissure**: cuts into whole thickness of lung
  
  Passes obliquely downward & forward, crossing the posterior border about 2.5 inches above the apex & the inferior border about 2 inches from the median plane.
- Present in both the lungs.
- **Transverse fissure**: Runs horizontally at the level of fourth costal cartilage & meets the oblique fissure in the midaxillary present in right lung.
- **Lobes**: 3 lobes in the right lung.
- 2 lobes in the left lung.
• **Root** - Short tubular collection of the structures that attach the lung to structures in the mediastinum

• Covered by a sleeve of mediastinal pleura that reflects onto the surface as visceral pleura

• **Hilum** - Region outlined by the pleural reflection on the medial surface of lung where structure enter & leave

• **Pulmonary ligament** - Blade like fold of pleura project inferiorly from the root of the lung & extends from hilum to the mediastinum
• Each root contains-
• A pulmonary artery
• Two pulmonary veins
• A main bronchus
• Bronchial vessels
• Nerves
• Lymphatics
Right lung
Left lung

Left Lung
Medial View
- **Bronchial tree**
  - Trachea (C6 TO t4)
  - Main bronchus (Rt & Lt)
  - Lobar bronchus
  - Segmental bronchus
  - Terminal bronchioles
  - Respiratory bronchioles
  - Pulmonary unit (Alveolar duct, Atria, Air saccules & Pulmonary alveoli)
Bronchopulmonary segment

- Well defined sector of lung aerated by a tertiary or segmental bronchus
- Pyramidal in shape, apex directed towards root of lung
- Each segment has its own branch of pulmonary artery (dorsolateral to bronchus)
- Vein run in intersegmental plane
- So a bronchopulmonary segment is the smallest, functionally independent region of a lung that can be isolated & removed without affecting adjacent regions
• 10 bronchopulmonary segments in each segment
• **Rt lung**
  • Upper lobe
    • Apical
    • Anterior
    • Posterior
  • Middle lobe
    • Lateral
    • Medial
  • Lower lobe
    • Superior
    • medial basal
    • Anterior basal
    • lateral basal
    • Posterior basal

• **Lt lung**
  • Upper lobe
    • Apicoposterior
    • Anterior
  • Lower lobe
    • Superior lingular
    • Inferior lingular
    • Lower lobe
    • Superior
    • Medial basal
    • Anterior basal
    • Lateral basal
    • Posterior basal
Bronchopulmonary Segments
Posterior View

Left lung
Right lung
Bronchopulmonary Segments

Medial Views

Right lung

Left lung
Vascular supply of lungs

- **Pulmonary artery** (PA) supply deoxygenated blood to lungs
  - Rt PA is longer
  - Enters the root of the lung & branches in to arteries for superior middle & inferior lobe
  - Lt PA is shorter
- 2 **Pulmonary vein** (superior & inferior) on each side
  - PV drain in to left atria
• Bronchial arteries & veins constitute the nutritive vascular system of pulmonary tissue

**Rt bronchial artery** - one
• Arises From Third Posterior intercostal artery or from left upper bronchial artery

**Lt bronchial artery** - two
• arise from thoracic aorta
• superior arise at T5 level
• Inferior arise inferior to left bronchus
• Bronchial vein drain into pulmonary vein or left atrium and into
• Azygos vein on right
• Superior intercostal vein or hemiazygos vein on left
Nerve supply

- Anterior & posterior pulmonary plexus
- These interconnected plexus is situates ant & posterior to tracheal bifurcation & main bronchus
- Parasympathetic Fibers Are Derived From Vagus these are motor to, secretomotor & sensory
- Sympathetic fibers are derived from T2 to T5 and are inhibitory to muscle & glands
Lymphatic drainage

- Superficial, subpleural & deep lymphatic drain into tracheobronchial lymph nodes
- Efferents from these drain into Rt & Lt bronchomediastinal trunks
- These trunks drain into deep veins of neck or Rt lymphatic trunk & thoracic duct