

**Unit 26:**

**Thorax**

**Chapter 1 (Thorax): (p. 86-127 and 160-180)**

GENERAL OBJECTIVES:

- general considerations of the organization of thoracic walls and cavity
- division of thoracic cavity: pleural spaces and mediastinum

SPECIFIC OBJECTIVES:

**1. Muscles of thoracic walls**

Connecting Adjoining Ribs:

Intercostals (External, Internal & Innermost)

Spanning Several Ribs:

Subcostals

Connecting Ribs to Sternum:

Transversus Thoracis

Connecting Ribs to Vertebrae:

**The Diaphragm**

*Form & Position, Parts & Attachments*

*Major Openings*

*Minor Openings*

*Vessels*

*Nerves (Motor, Sensory)*

*Actions*

Movements of Respiration (Quiet, Deep and Forced)

Inspiration/Expiration

Skin & Subcutaneous Tissue

**Breast**

*Parts, Axillary Tail, Suspensory Ligaments*

*Nerve Supply*

*Arterial Supply & Venous Drainage*

*Lymph Drainage*

Intercostal Spaces

*Layers of Thoracic Wall (Skin --> Parietal Pleura)*

1 ~ 130 ~ 1#

Intercostal Nerves:     *Typical*  
                                  *Atypical*

**Vessels**

Intercostal Vessels (Posterior & Anterior)

Internal Thoracic Vessels

Parasternal Lymph Nodes

## 2. Thoracic cavity

### Arrangement of Thoracic Viscera

<p style="text-align: center;"><b>Cardiovascular System</b> Heart</p> <p style="text-align: center;"><b>Respiratory System</b> Trachea Bronchi Lungs</p> <p style="text-align: center;"><b>Alimentary Tract</b> Oesophagus</p> <p style="text-align: center;"><b>Lymphoid System</b> (Thymus)</p>
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### Pleural Sacs

#### Pleura

*Parietal - Costal, Diaphragmatic, Mediastinal, Cupola(Cervical)*

*Lines of Pleural Reflection (from Costal Pleura)*

*Connecting Root (-> Pulmonary Ligament)*

*Visceral*

*Vessels of Pleurae*

*Nerves of Pleurae*

### Pleural Cavities

*Recesses (Costodiaphragmatic & Costomediastinal)*

### Lungs

*Position (Paired Viscera)*

*Lobes & Fissures*

*Apex, Base, Borders & Surfaces (Costal, Medial)*

*Grooves on Mediastinal part of Medial Surface*

*Root (Hilus)*

*Contents (Bronchi, Vessels, Lymph Nodes & Nerves)*

*Bronchial Tree: Primary, Secondary & Tertiary Bronchi*

*Bronchopulmonary segments*

*Arteries & Veins: Pulmonary*

*Bronchial*

*Lymphatics & Lymph Nodes*

*Nerves: Motor (Sympathetic, Parasympathetic), Sensory*

### 3. Mediastinum

#### Anterior Mediastinum

Thymus (in early life)

#### Middle Mediastinum

##### **Pericardial Sac**

##### **Structures Entering Roots of Lungs**

*Principal Bronchus (right, left)*

*Pulmonary Artery (right, left)*

*Pulmonary Veins (right, left)*

#### Posterior Mediastinum

*Descending (Thoracic) Aorta*

*Thoracic Duct*

*Azygous Vein*

*Oesophagus*

#### Superior Mediastinum

Thymus

Arteries

*Arch of Aorta*

*Ligamentum Arteriosum*

*Branches of Arch:*

*Brachiocephalic Trunk*

*Left Common Carotid Artery*

*Left Subclavian Artery*

Veins

*Brachiocephalic Veins (right & left)*

*Superior Vena Cava*

*Azygous Vein (termination)*

*Thoracic Duct*

Nerves

*Vagus nerves (right & left)*

*Left Recurrent Laryngeal Nerve*

*Phrenic Nerves (right & left)*

Trachea

*Beginning (in Neck), Course, End (Bifurcation)*

*Key Relations of Thoracic Part*

*Structure: Cartilage “Rings”, Carina*

Esophagus

*Beginning (in Neck), Course, End (In Abdomen)*

*Key Relations of Thoracic Part*

*Sphincters & “Constrictions”*

#### **4. Thorax - Vessels & Nerves**

##### Pulmonary Circulation

*Pulmonary Trunk, Right & Left Pulmonary Arteries*  
Pulmonary Veins

##### Systemic Circulation

##### **Arteries: Aorta (Ascending, Arch, Thoracic)**

*Course/Beginning & End, Key Relations, Distribution*

“Special” Branches:

Ascending -> *Right & Left Coronary Arteries*

Arch -> *Brachiocephalic Trunk, L. Common Carotid, L. Subclavian*

Thoracic -> *Parietal Branches: Post. Intercostal Arteries*

-> *Visceral Branches: (Bronchial, Esophageal, Pericardial)*

Variations of: (Coronary Arteries, Branches of Arch)

##### **Veins:**

of Heart:

Coronary Sinus

Tributaries & Other Veins

of Thorax:

(-> to Superior Vena Cava)

*Brachiocephalic (Right & Left), Superior Vena Cava,*

*Azygos*

*Course/Beginning & End, Key Relations, Field of Drainage*

“Special” Tributaries:

Brachiocephalic - Internal Thoracic Veins

(Left) Inferior Thyroid

(Left) Left Superior Intercostal

Azygos - Hemiazygos & Accessory Hemiazygos Veins

Communications (of Vertebral Venous system with Azygos System)

##### **Nerves of Thorax (& distribution, sensory/motor)**

Thoracic Nerves (Ventral Rami -> Typical & Atypical Intercostal Nerves)

*Phrenic Nerves (Right & Left)*

*Vagus Nerves (Right & Left)*

*Left Recurrent Laryngeal Nerve*

Sympathetic Trunks & Ganglia

Splanchnic Nerves (Greater, Lesser & Lowest)

Autonomic Plexuses: (Cardiac, Pulmonary, Esophageal)