**SNS COLLEGE OF ALLIED HEALTH SCIENCES**

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai

**DEPARTMENT :** OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY

**COURSE NAME :** ANATOMY

**UNIT :** THORAX

**TOPIC :** DIAPHRAGM

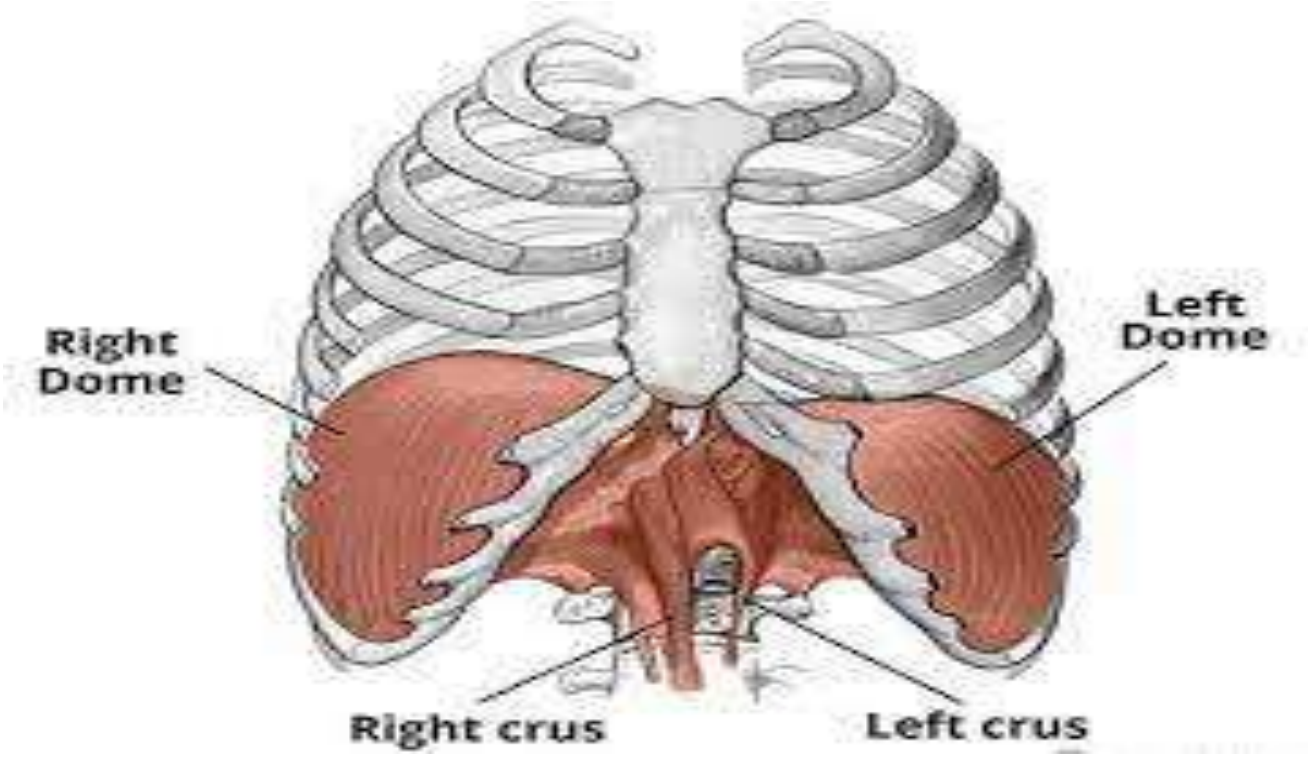
# DIAPHRAGM

- Large, dome shaped, fibromuscular partition separating the thoracic cavity from abdominal cavity
- It is a chief muscle of respiration
- It presents

✓Right dome – lies at higer level because of liver

✓Left dome

✓Central tendon – fibrous central part of diaphragm


Right
Dome
Left
Dome
Right crus
Left crus

**Origin :**

- Sternal origin – from xiphoid process
- Costal orgin – from lower 6 costal cartilage
- Vertebral origin – arises crura & arcuate ligaments

**Crura** – thick fleshy bundles attached on each sides of aorta as right & left crus

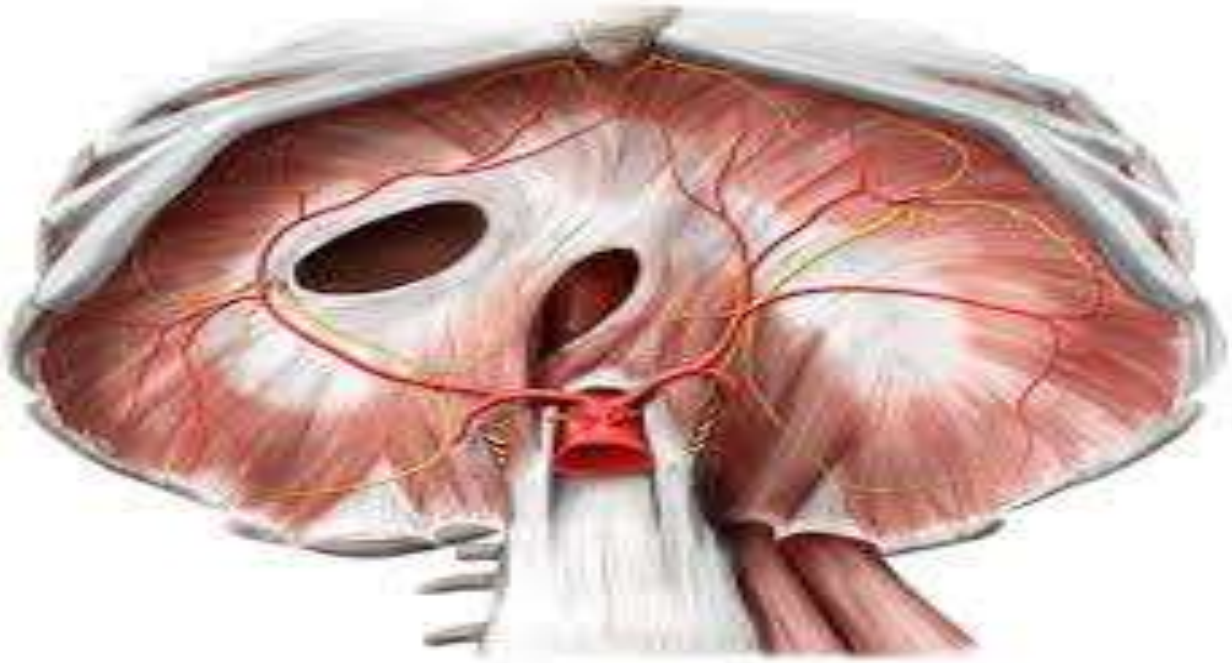
- Right crus – attached on right side of aorta & to anterior surface of upper 3 lumbar vertebral bodies
- Left crus – attached on left side of aorta & to anterior surface of upper 2 lumbar vertebral bodies

**Insertion** :

- All muscle fibers converge on strong central tendon

**Relations :**

- Superiorly – lungs & pleura,heart & pericardium
- Inferiorly – liver ,fundus of stomach & spleen



# Foramina in diaphragm

**Major foramina** – 3 ( Voice OF America)

1. Opening for IVC (inferior vena cava) – T8 level
2. Opening for oesophagus – T10 level
3. Opening for aorta which transmit aorta & thoracic duct– T12 level

**Minor foramina**:

- Phrenic nerves
- Superior epigastric vessels
- Lower 5 intercostal nerves
- Splanchnic nerves
- Sympathetic trunks
- Minute veins

# ACTION

- ✓Contraction of diaphragm – facilitates inspiration
- ✓Relaxation of diaphragm – facilitates expiration

# BLOOD SUPPLY

The blood supply to the diaphragm is from the superior phrenic, musculophrenic, inferior phrenic, pericardiacophrenic, and lower internal intercostal arteries.

# LYMPHATIC DRAINAGE

Lymphatics in the diaphragm form a specialised system draining fluid from the peritoneal cavity and returning it to the vascular system.

# NERVE SUPPLY

- ✓Motor supply - by phrenic nerve (C3,C4,C5)
- ✓Sensory supply – intercostal nerves

# APPLIED ANATOMY

- **Paralysis of diaphragm** – damage to phrenic nerve leads to paralysis of diaphragm on that side
- **Diaphragmatic hernia** – sometimes abdominal contents can herniate through diaphragmatic openings
- **Referred pain** – because of common root value for phrenic & supraclavicular nerve , the diaphragmatic pain is referred to shoulder on affected side.

# ASSESSMENT

- What is the Stucture of Diaphragm ?
- What is the Crura of Diaphragm ?