Diaphragm

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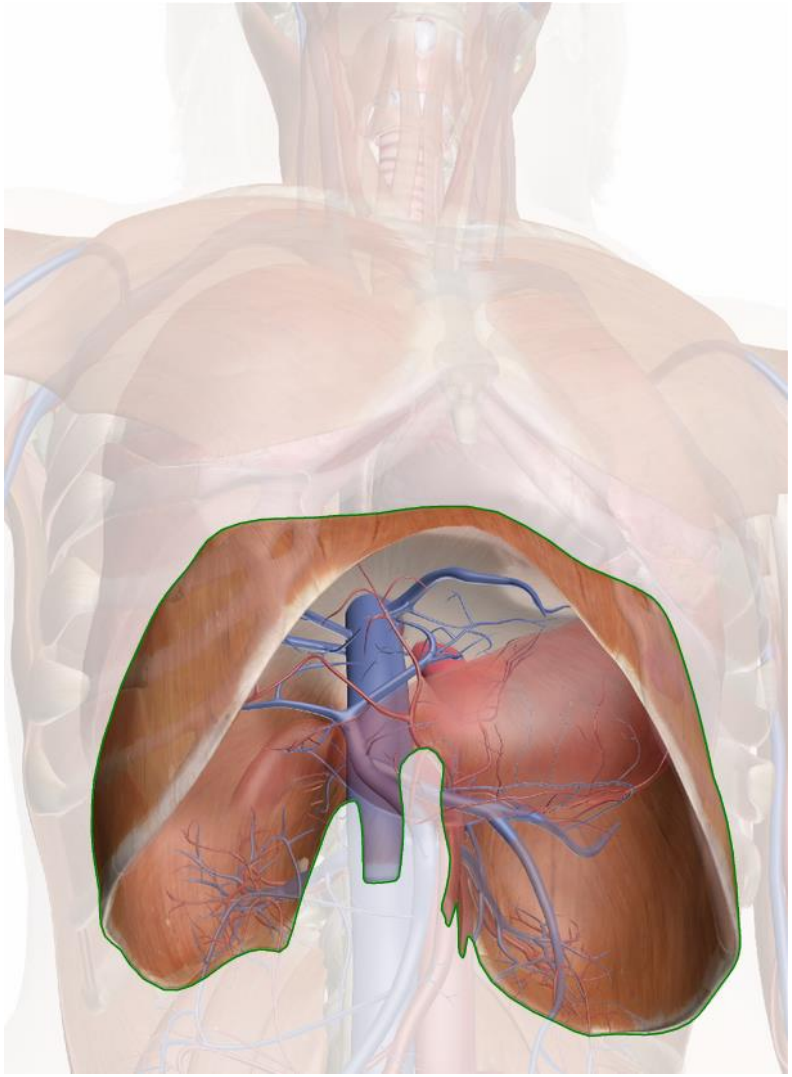
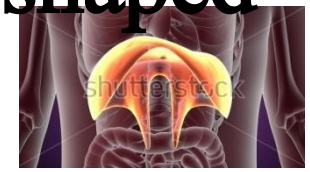


Introduction

Dia = two

Phragm = dome shaped

- Two dome shaped structure



- Divides thoracic cavity from abdomen
- Chief muscle of respiration

Parts of diaphragm

- **Top (Superior surface)**

  Convex and protrudes in thoracic cavity

- **Bottom (Inferior Surface)**

  Concave and faces the abdominal cavity

- **Front**

Sternal part, attaches to the back of xiphoid of the sternum

- **Back**

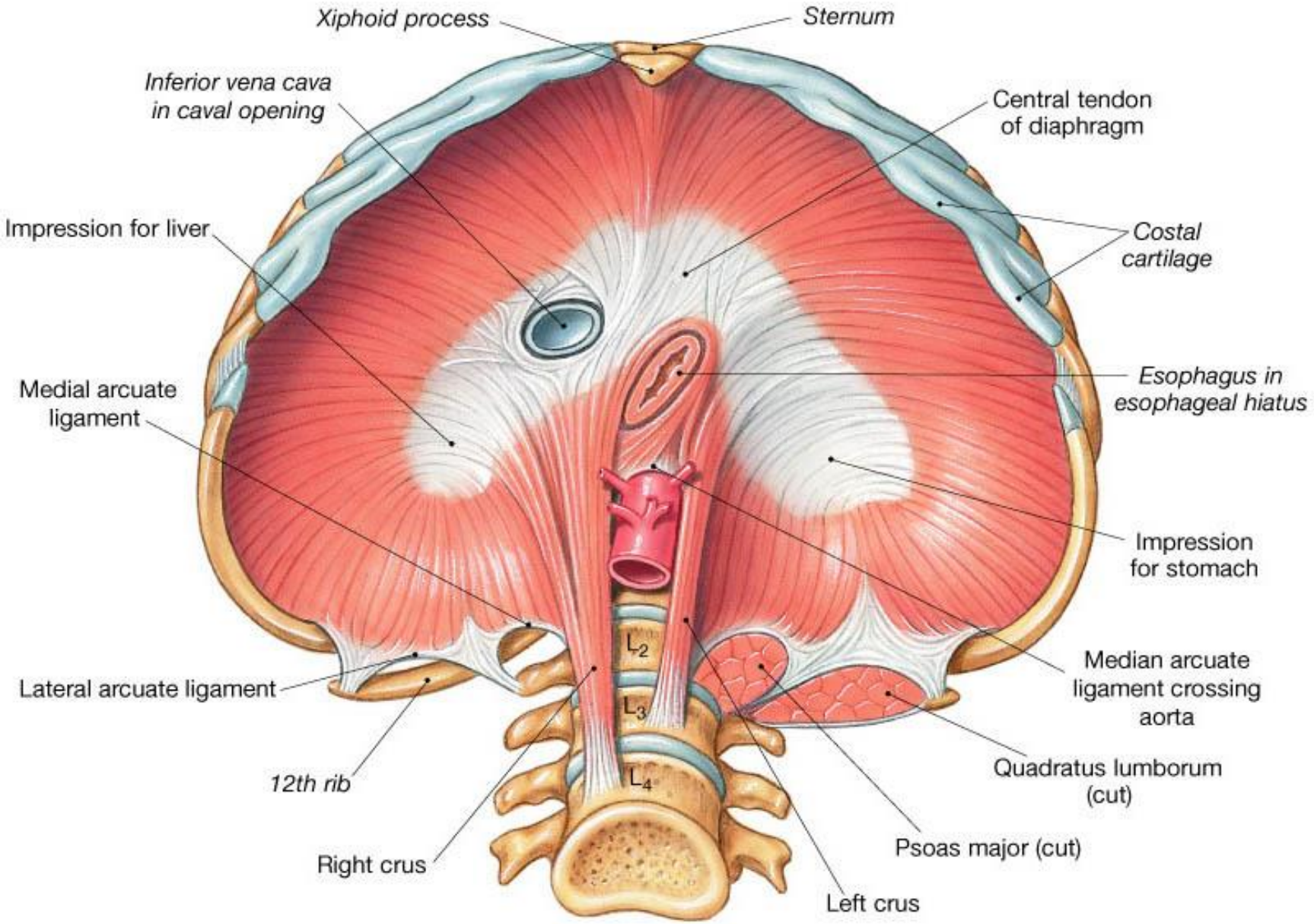
Lumber part, communicates with the first three lumber vertebrae

- **Sides**

Remaining parts which attach to the back of last six ribs and its cartilages

Two bands – Crura

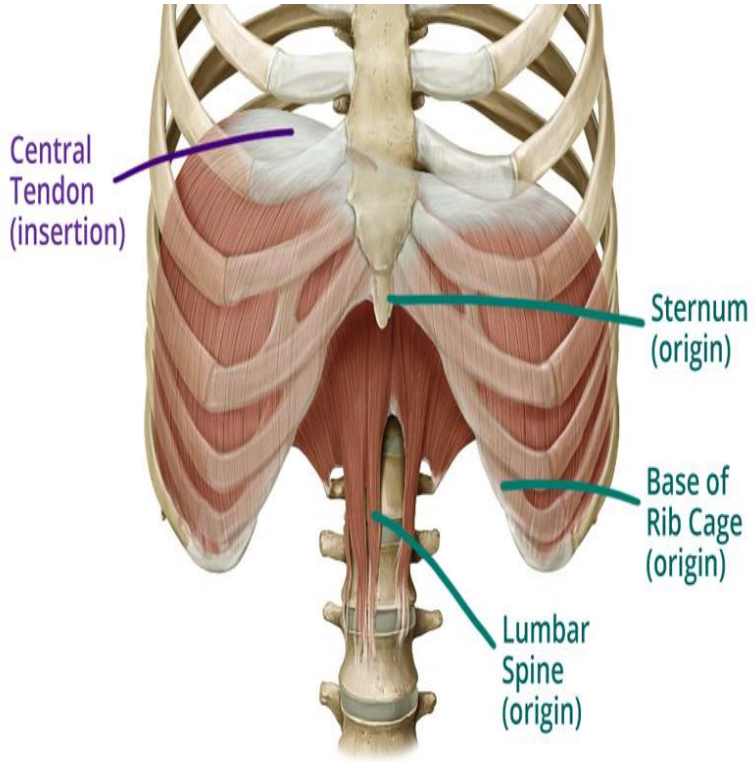
- **Arise from lumber vertebrae**
- **Left crus and right crus**
- **Continue into the central tendon**
- **Right crus thicker than left crus**



(a) Inferior view

Origin And Insertion

- **Origin**
  - Sternal part – Xiphoid pro
  - Costal part – lower 6th rib
  - Lumber part – L1 , L2 , L
- **Insertion**
  - Central Tendon



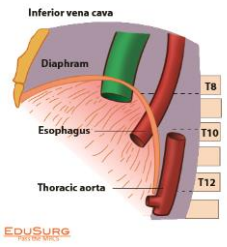
The Diaphragm — Origin & Insertion

Openings of diaphragm

Major openings

Vena caval opening - at the level **T8** it transmites with **inferior vena cava, branches of phrenic nerve**

Oesophageal openings - at the level of **T10** it transmites with - **oesophages, gastric or vagus nerves, oesophagial branches of the left gastric artery with some oesophagial vein**



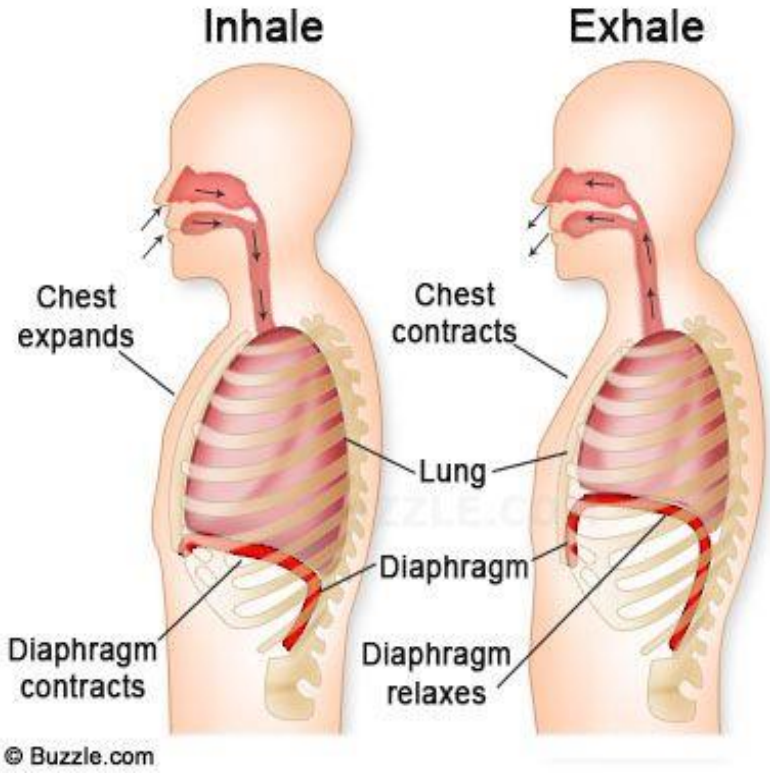
Aortic opening - at the level of **T12** it transmites with **aorta, azygous vein, thoracic duct**

Miner Openings

- Greater splanchnic nerve and lesser splanchnic nerve- each crus of diaphragm
- The sympathetic chain- passes from thorax to the abdomen behind the medial arcuate ligament
- Subcostal nerve and vein- behind the lateral arcuate ligament
- Superior epigastric vessels and some lymphatics - xyphoid process
- Musculophrenic vessels- T9

Actions of diaphragm

- **Principal muscle of inspiration**
- **Expulsive acts – sneezing, coughing, vomiting, micturition, parturition**
- **The sphincteric action in lower end of oesophagus**



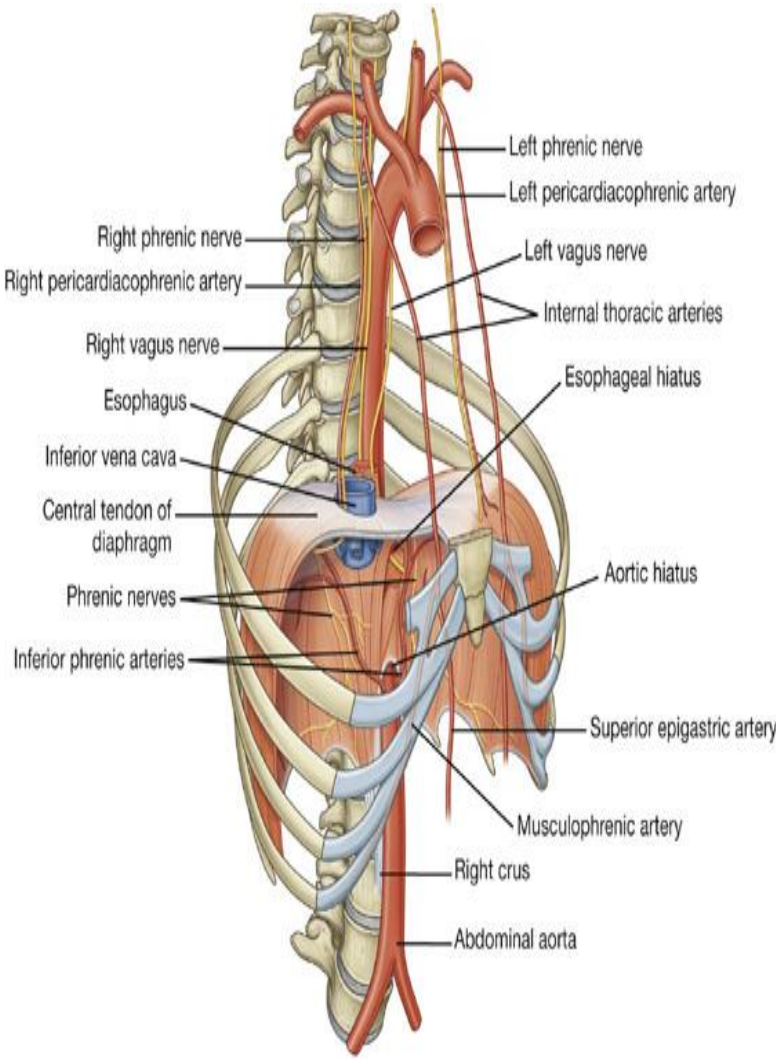
Nerve supply of diaphragm

Motor nerve supply : The right and left phrenic nerve

(C3, C4, C5)

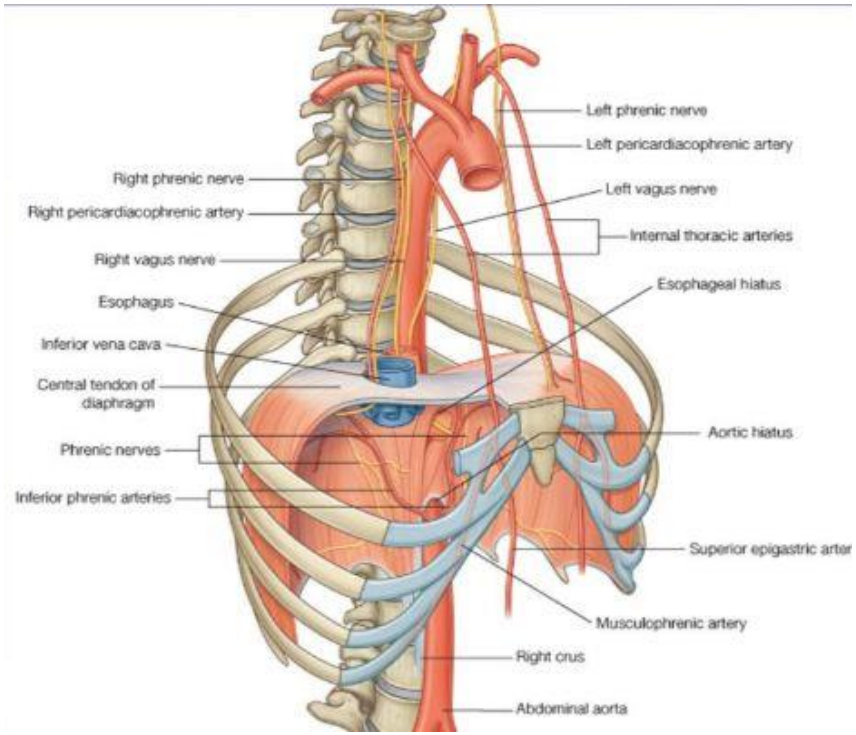
Sensory nerve supply –

- ❑ The central part of diaphragm supplied by phrenic nerve
- The periphery of diaphragm is supplied by the lower six intercostals nerves



Blood supply of diaphragm

- Arterial Supply :
  - Musculophrenic artery
  - Superior phrenic arteries
  - Lower 5 intercostal arteries + subcostal artery
  - Inferior phrenic artery
- Veins :
  - Accompany the arteries




Thank you!