

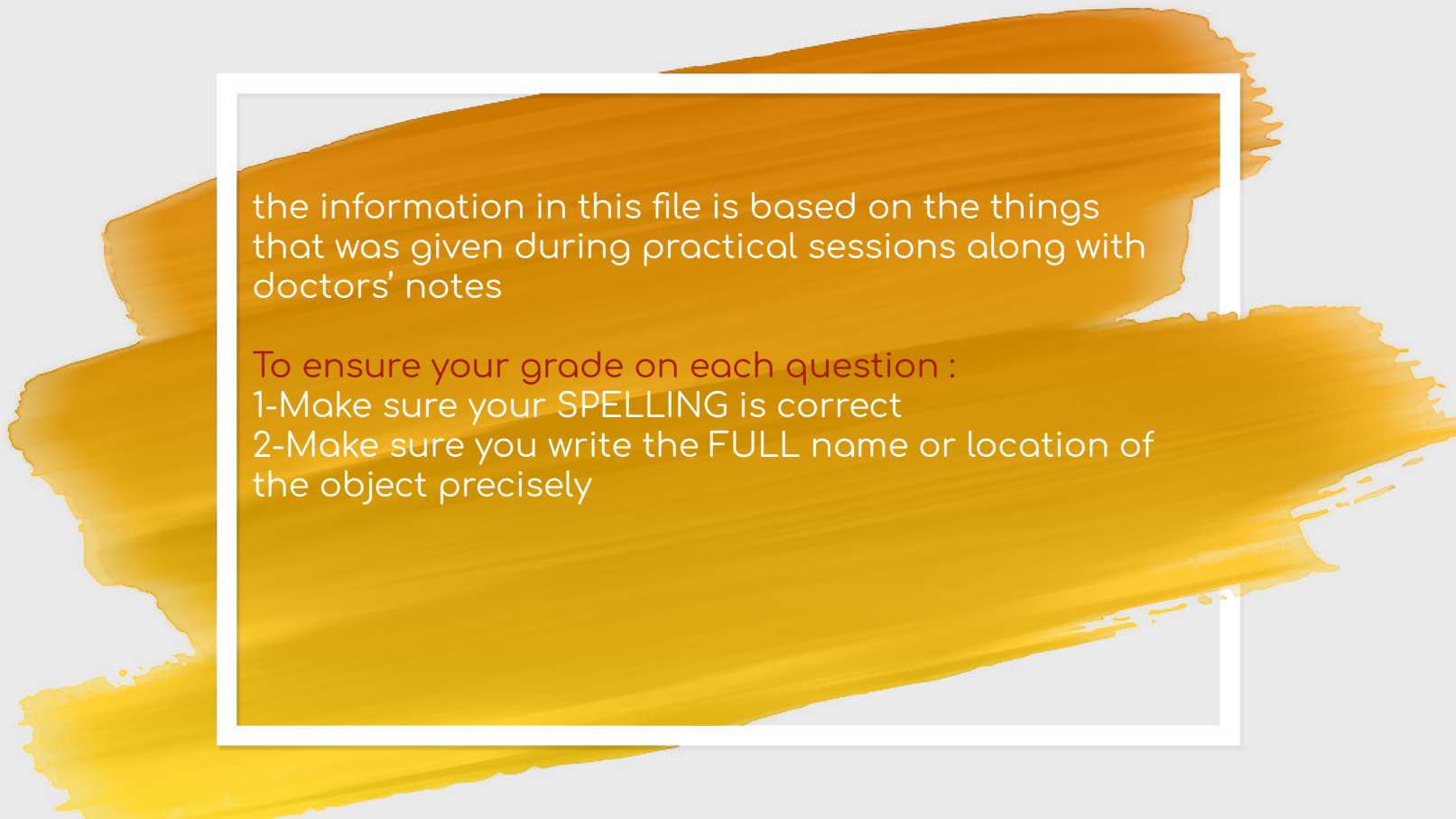


# Ribs & Muscles involved in Normal respiration

Respiratory Block



Anatomy Practical team - Med 439



the information in this file is based on the things that was given during practical sessions along with doctors' notes

To ensure your grade on each question :

1-Make sure your SPELLING is correct

2-Make sure you write the FULL name or location of the object precisely

# THE RIBS

## First rib



- The shortest, Flat, Broad.
- Two surfaces:  
Superior (rough), Inferior (Smooth).
- Two borders:  
Inner (concave), Outer (convex).
- No costal groove, has one facet.

## Second rib



- Has costal facet (Tubercle).
- Has costal groove (short).
- Has two facets.
- The tuberosity is superior.

## Typical ribs (3-9)



- Two surfaces: Inner surface (concave) has costal groove (for neurovascular bundle), Outer surface (convex).
- Two End: Posterior (vertebral) has two facet on the head(also there's neck), Anterior (sternal).
- Has costal facet (Tubercle).
- Two borders: Upper (blunt, rounded), Lower (Sharp).

# How can you determine the site ?

---

First step: Posterior and Anterior.

All the ribs have the same ends:

- Head contains facet followed by neck is **POSTERIOR**
- Flat end is **ANTERIOR**

Second step: Superior and Inferior.

1st ribs:

The rough surface is **SUPERIOR** and the smooth surface is **INFERIOR**

2nd ribs:

The costal groove is **INFERIOR**

Typical ribs:

The rounded border is **SUPERIOR** and the sharp border and the costal groove is **INFERIOR**

Then you can know if it's left or right

## How to differentiate between the ribs?

S  
U  
M  
M  
A  
R  
Y



First rib

Second rib

Typical ribs  
(3-9)

When you see a short rib and the surfaces are upper and lower that is the **first rib**  
But when the surfaces are not clear " if it's upper & lower OR inner & outer " and there is costal groove in the inner that is the **second rib**  
Finally, **the typical ribs** are long, the surfaces are Outer & Inner.

Identify? And determine the site.

## Phrenic nerve



**Roots**

C3,4,5

**Muscle supply**

**Diaphragm**

Clearly penetrate the diaphragm

## Diaphragm apertures

**Caval apertures (T8)**

Passage of  
Inferior vena cava

**Esophageal apertures (T10)**

Passage of  
- Esophagus nerves  
- Two vagus nerves (right&left)

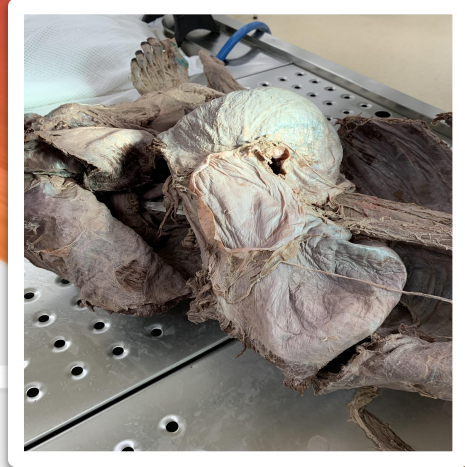
**Aortic apertures (T12)**

Passage of  
- Thoracic Aorta  
- Hemiazygos vein  
- Thoracic duct



# Diaphragm

Origin	Insertion	Nerve supply
<ul style="list-style-type: none"><li>- Sternum (posterior surface of Xiphoid process)</li><li>- Costal (lower 6 ribs and their costal cartilage)</li><li>- Vertebrae (upper 3 lumbar vertebrae)</li></ul>	Central tendon at the level of T9 (xiphisternal joint)	Phrenic nerve



# Intercostal muscles



Internal intercostal



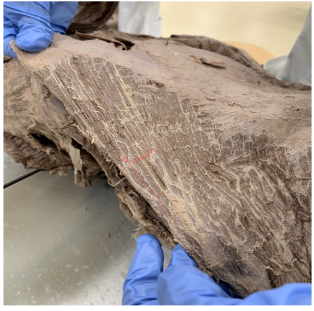
External intercostal



Transversus thoracis



# Abdominal muscles



External  
oblique muscle



Internal oblique  
muscle



Rectus abdominis



Transverse  
abdominis

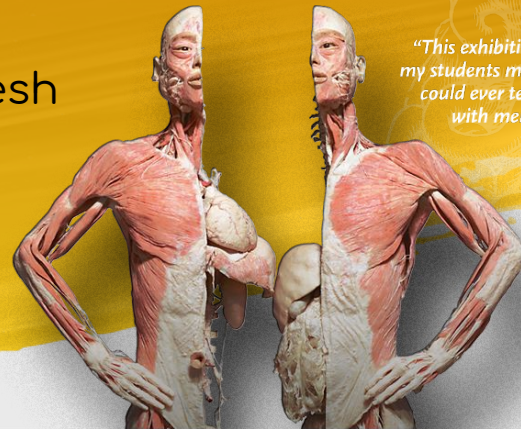
# Don't stop until you are proud.

## Team Members:

- Rania Almutiri
- Duaa Alhumoudi
- Nourah Alklaib
- Arwa Alqahtani
- Norah Alasheikh
- Najd Alzahrani
- Fatimah Alhelal
- Samar Almohammedi
- Khalid Alosaimii
- Hadi Alhemsii
- Abdulrahman Addweesh
- Abdulmalik Mokhtar

## Team Leaders:

- Renad Alhomaidi
- Bassam Alasmari



*"This exhibition taught my students more than I could ever teach them with mere words."*