

# ANATOMY OF THORAX REGION

## PRACTICAL LECTURE - 2 - MUSCLES OF THORACIC REGION

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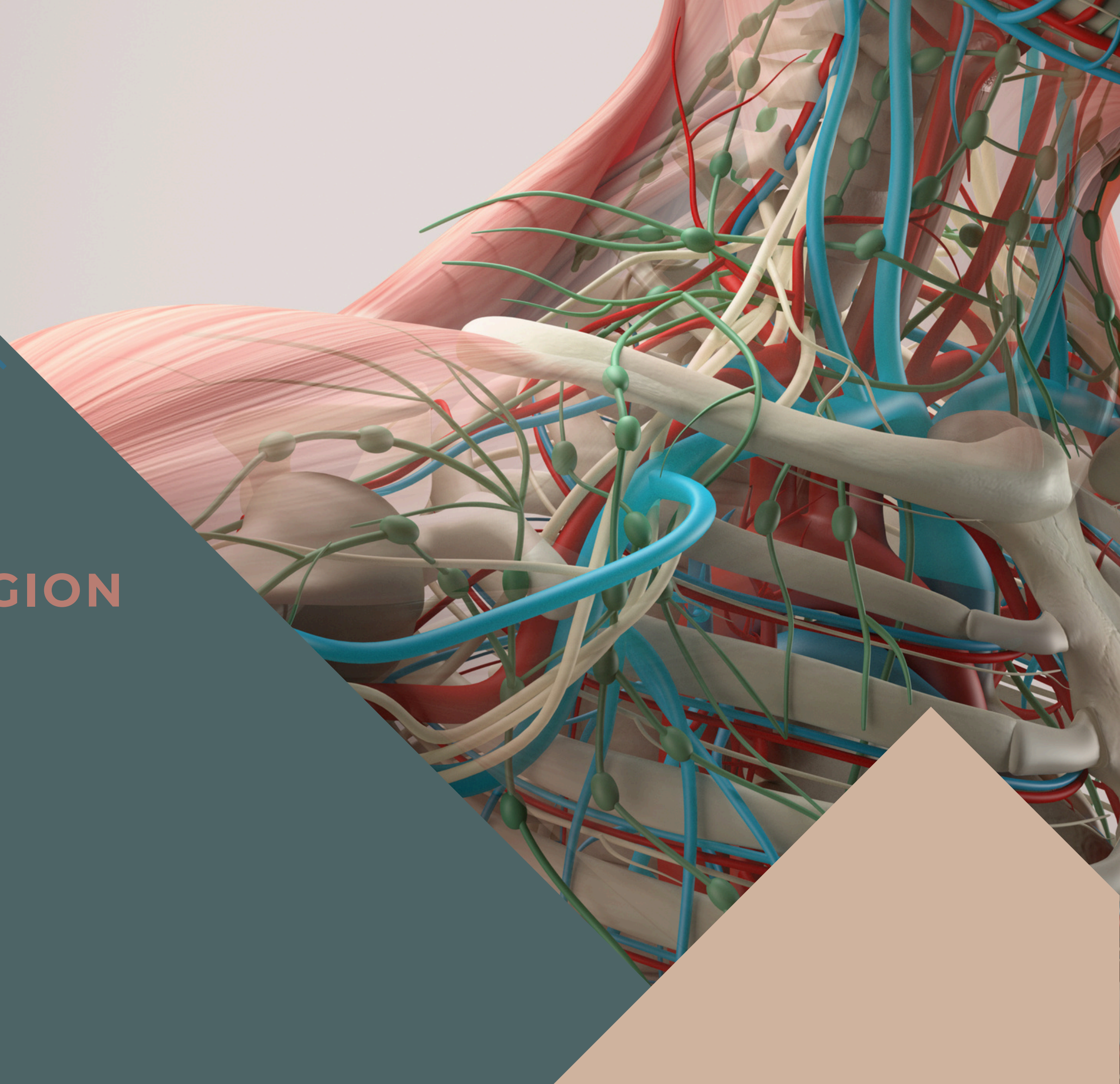
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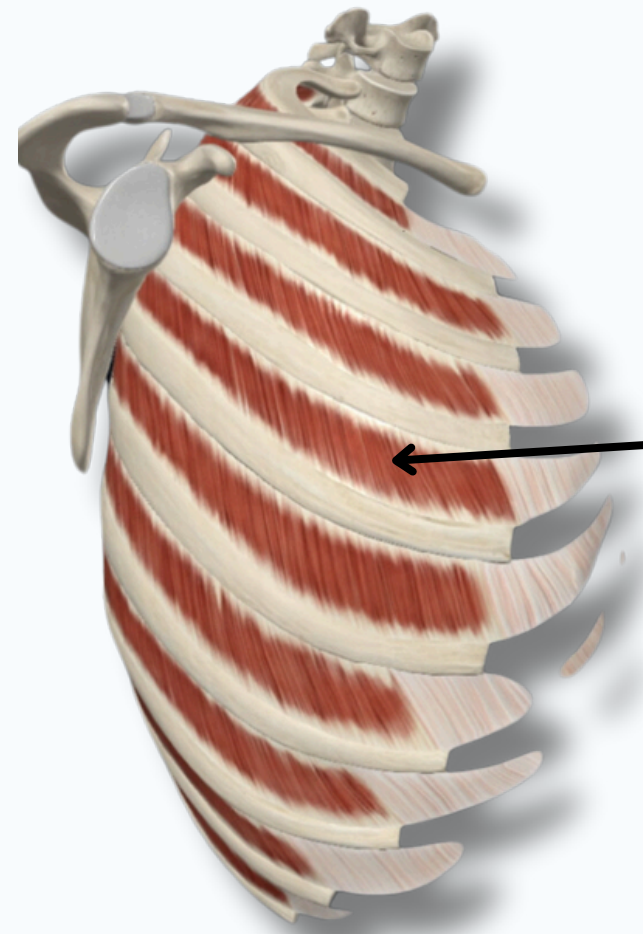


# MUSCLES OF THORACIC REGION

## EXTERNAL INTERCOSTAL MUSCLE

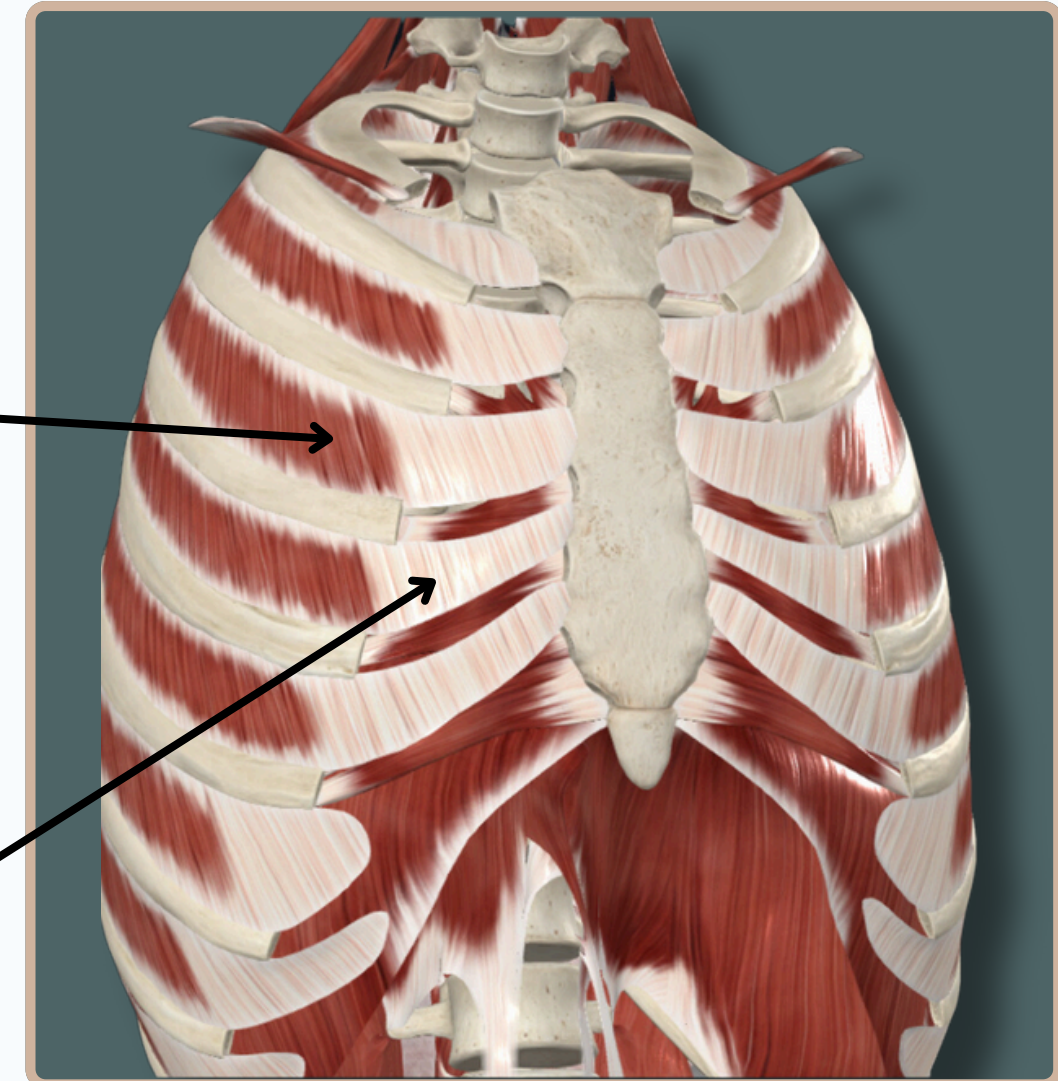


**Origin :** Inferior borders of first to eleventh **ribs**



**External Intercostal Muscle**

**Insertion :** Superior borders of **ribs** immediately below origin site continue as **Anterior Intercostal Membrane**



### **Action :**

- Elevate** ribs at their **costovertebral joints**
- provide structural **support** to intercostal spaces

**Anterior**

### **Nerve Supply :**

**Intercostal Nerves (anterior rami of thoracic nerves)**



# MUSCLES OF THORACIC REGION



## INTERNAL INTERCOSTAL MUSCLE

**Origin :** Inferior borders of first to eleventh ribs and their adjacent costal cartilages.

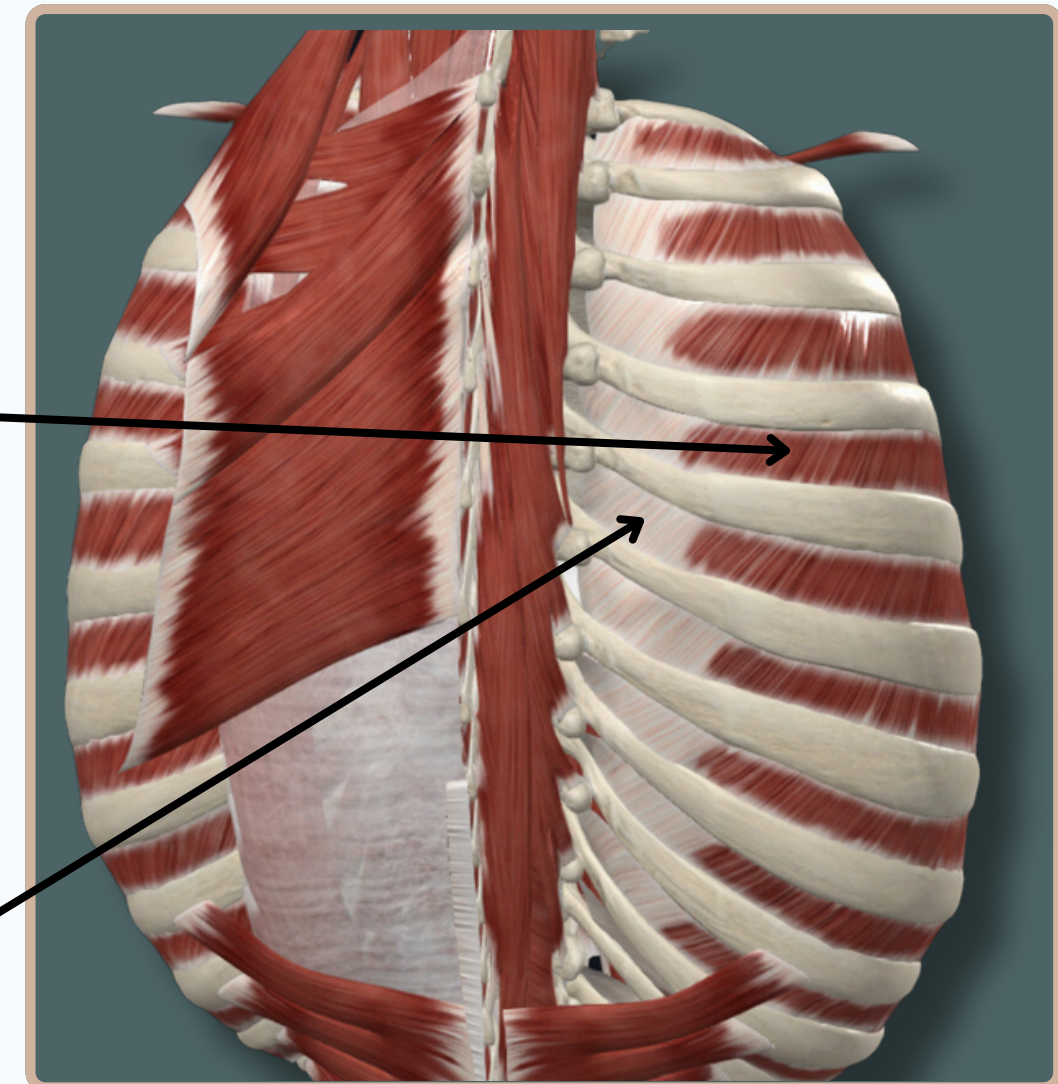
**Internal Intercostal Muscle**

**Insertion :** Superior borders of ribs and costal cartilages immediately below origin sites continue as **Posterior Intercostal Membrane**

### **Action :**

-**Depress** ribs at their **costovertebral joints**  
provide structural **support** to intercostal spaces

**Posterolateral**



### **Nerve Supply :**

**Intercostal Nerves (anterior rami of thoracic nerves)**

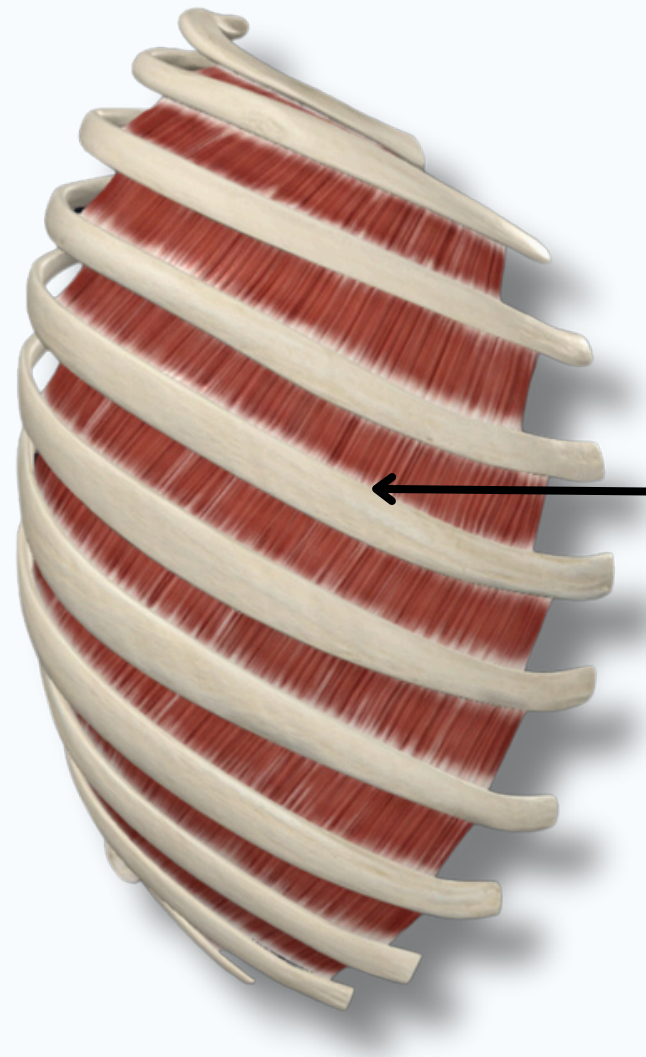


# MUSCLES OF THORACIC REGION



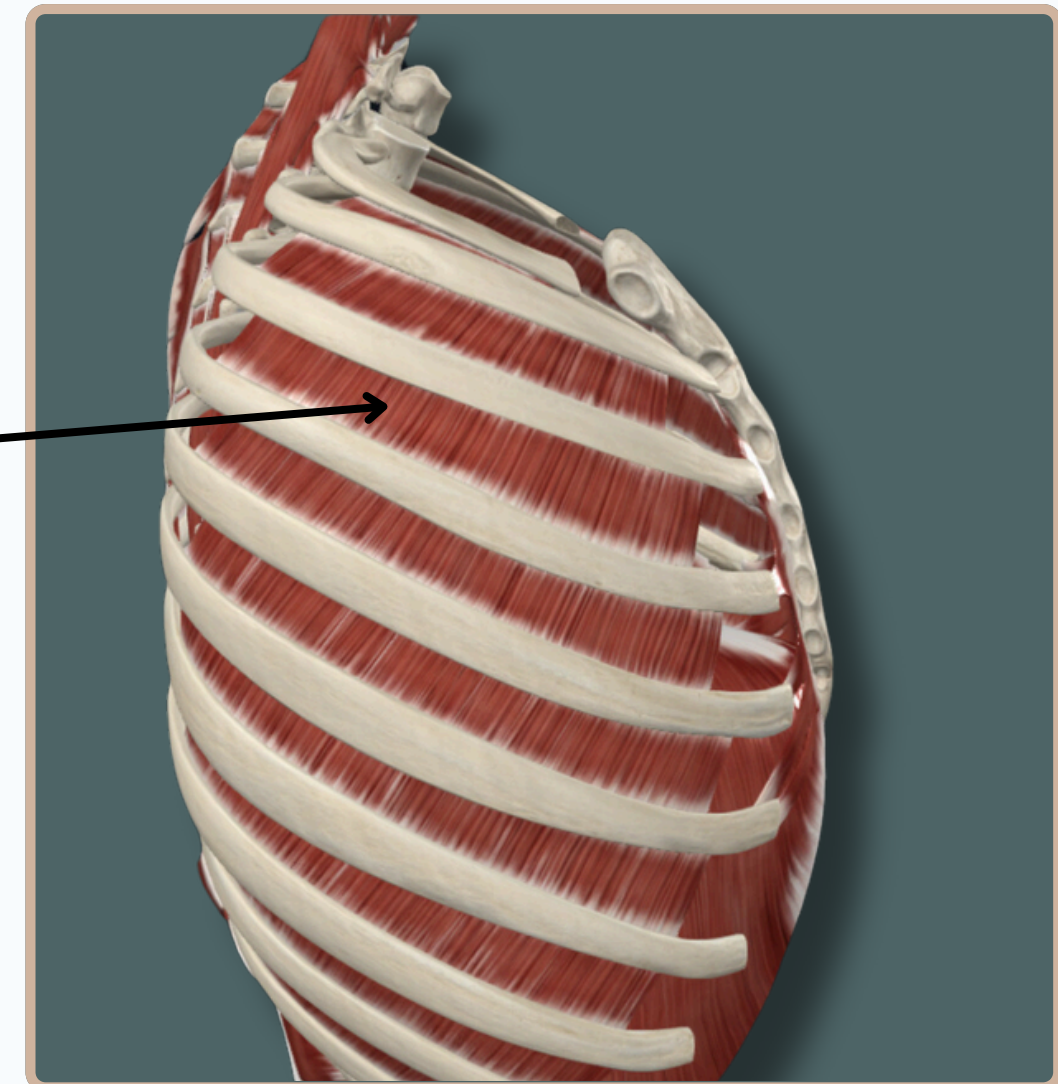
## INNERMOST INTERCOSTAL MUSCLES

**Origin :** Inferior borders and internal surfaces of first to eleventh **ribs**



### Innermost Intercostal Muscles

**Insertion :** Superior borders and internal surfaces of **ribs** immediately below origin sites



#### **Action :**

**-Elevate** ribs at their **costovertebral joints**

**Lateral**

#### **Nerve Supply :**

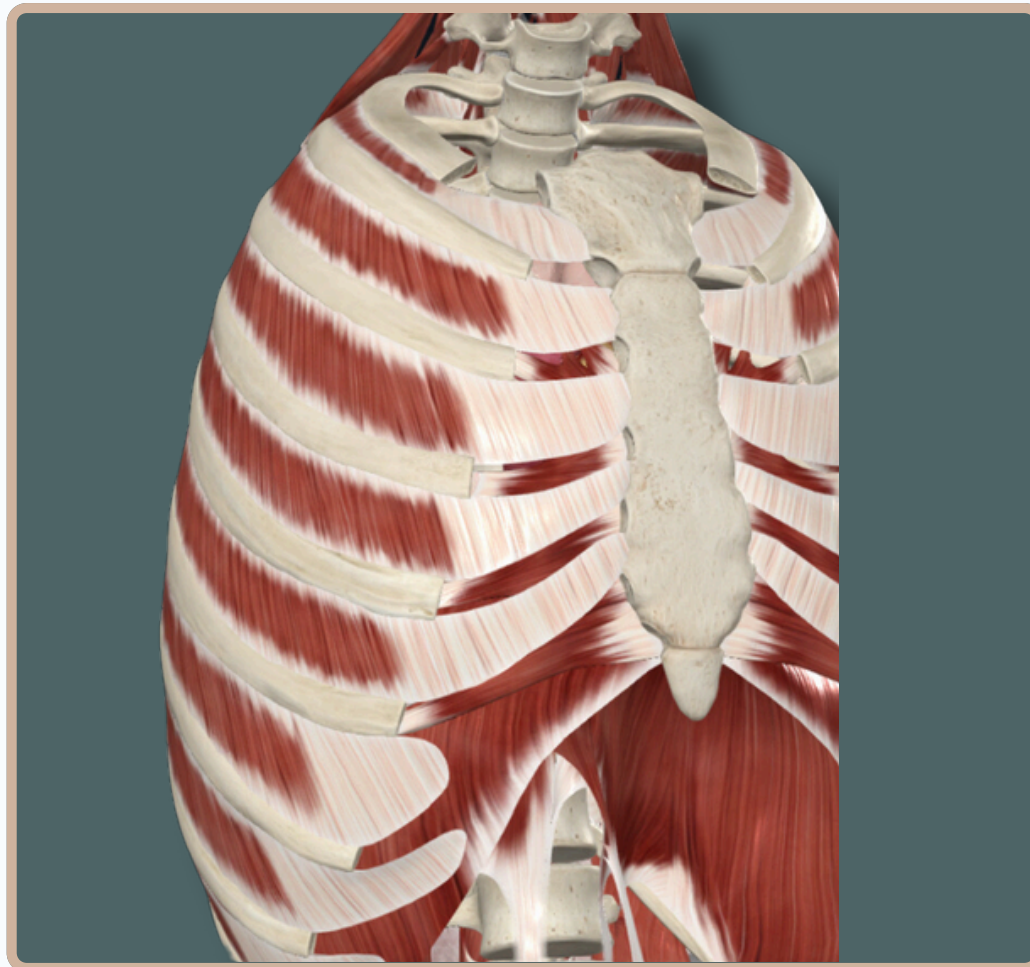
**Intercostal Nerves (anterior rami of thoracic nerves)**



# MUSCLES OF THORACIC REGION

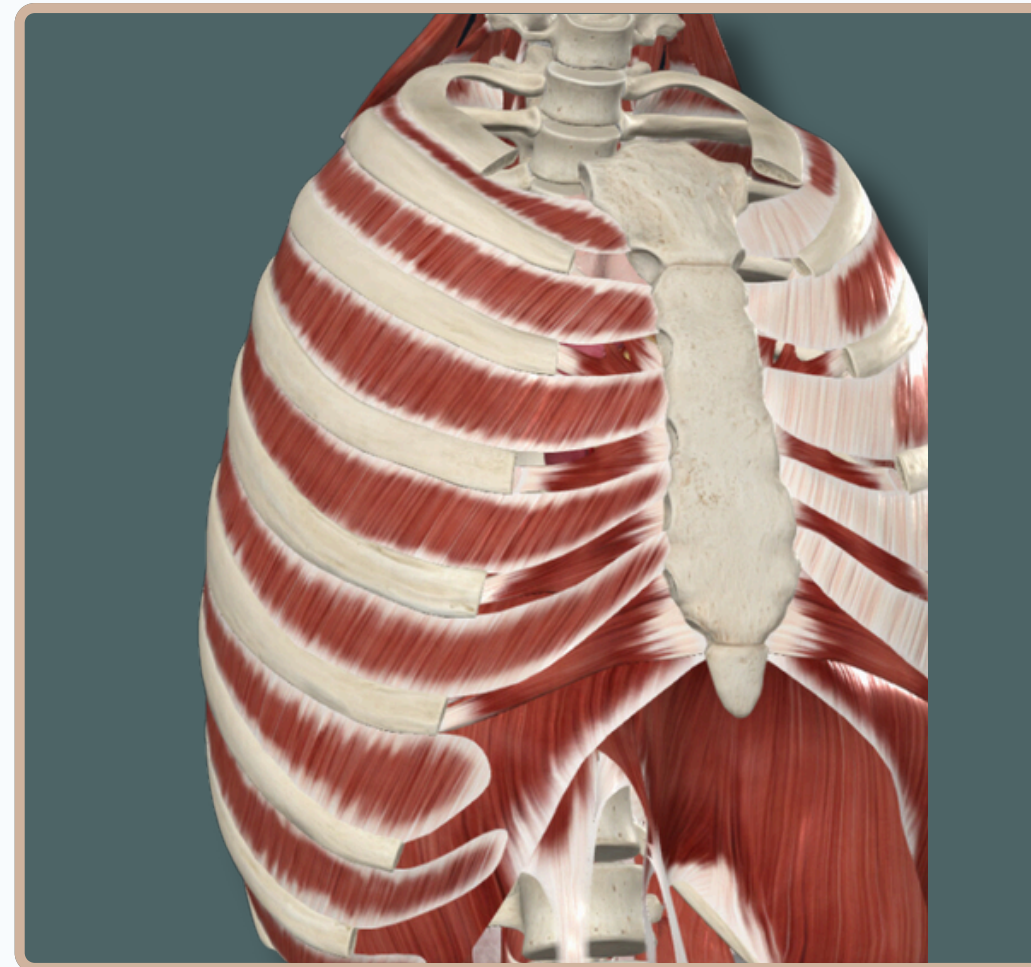


## HOW TO DIFFERENTIATE BETWEEN INTERCOSTAL MUSCLES



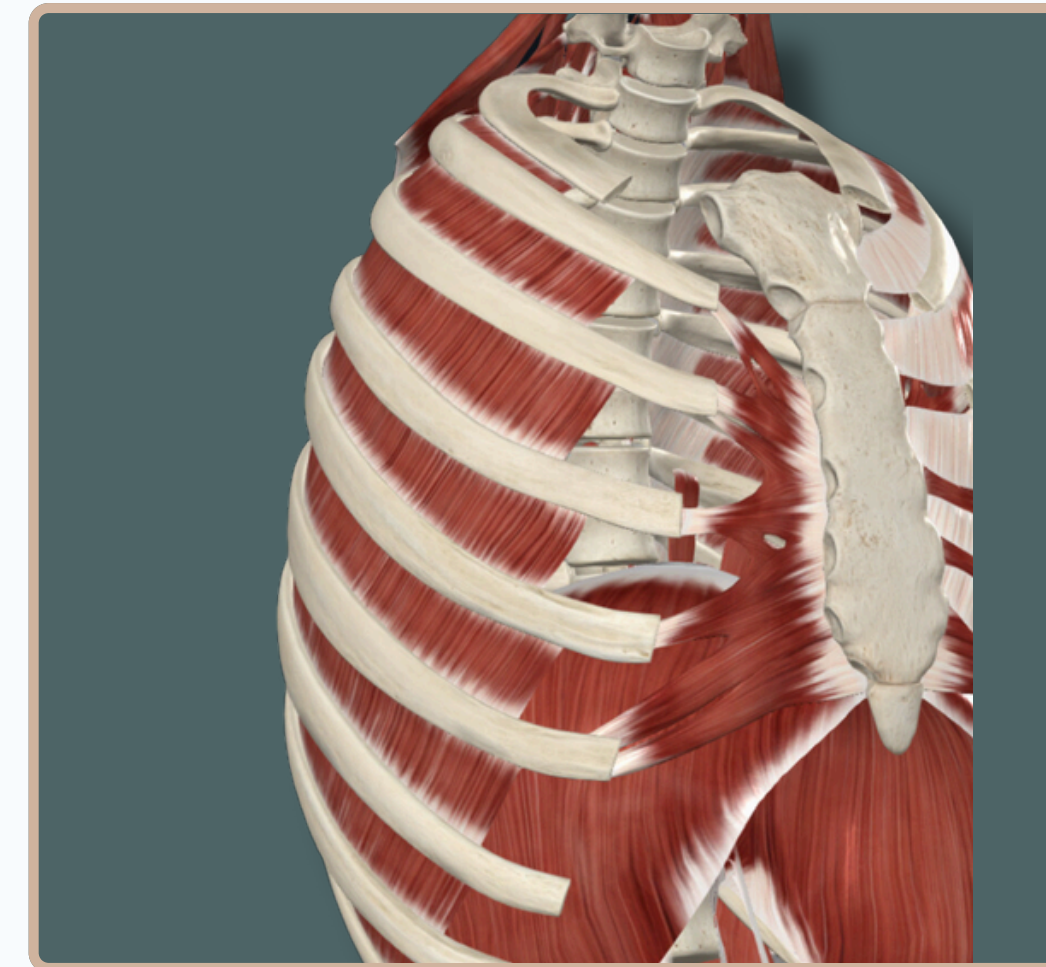
### External Intercostal Muscle

Muscles Fibers Directed **Downward and Anteromedially**



### Internal Intercostal Muscle

Muscles Fibers Directed **Downward Backward and Laterally**



### Innermost Intercostal Muscle

Muscles Fibers Directed **Downward Backward and Laterally**

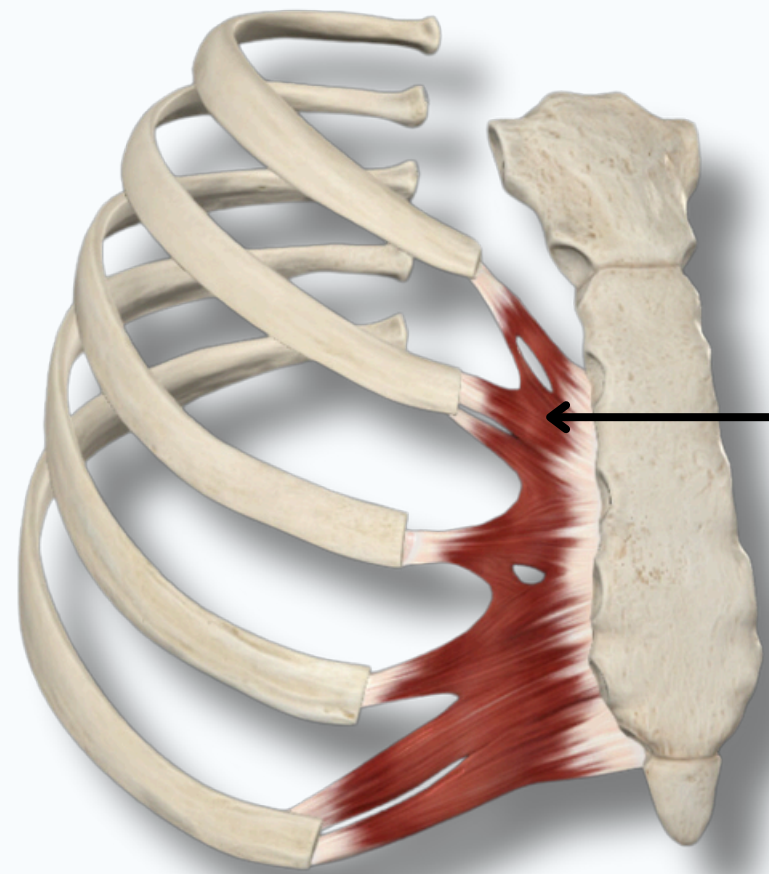


# MUSCLES OF THORACIC REGION



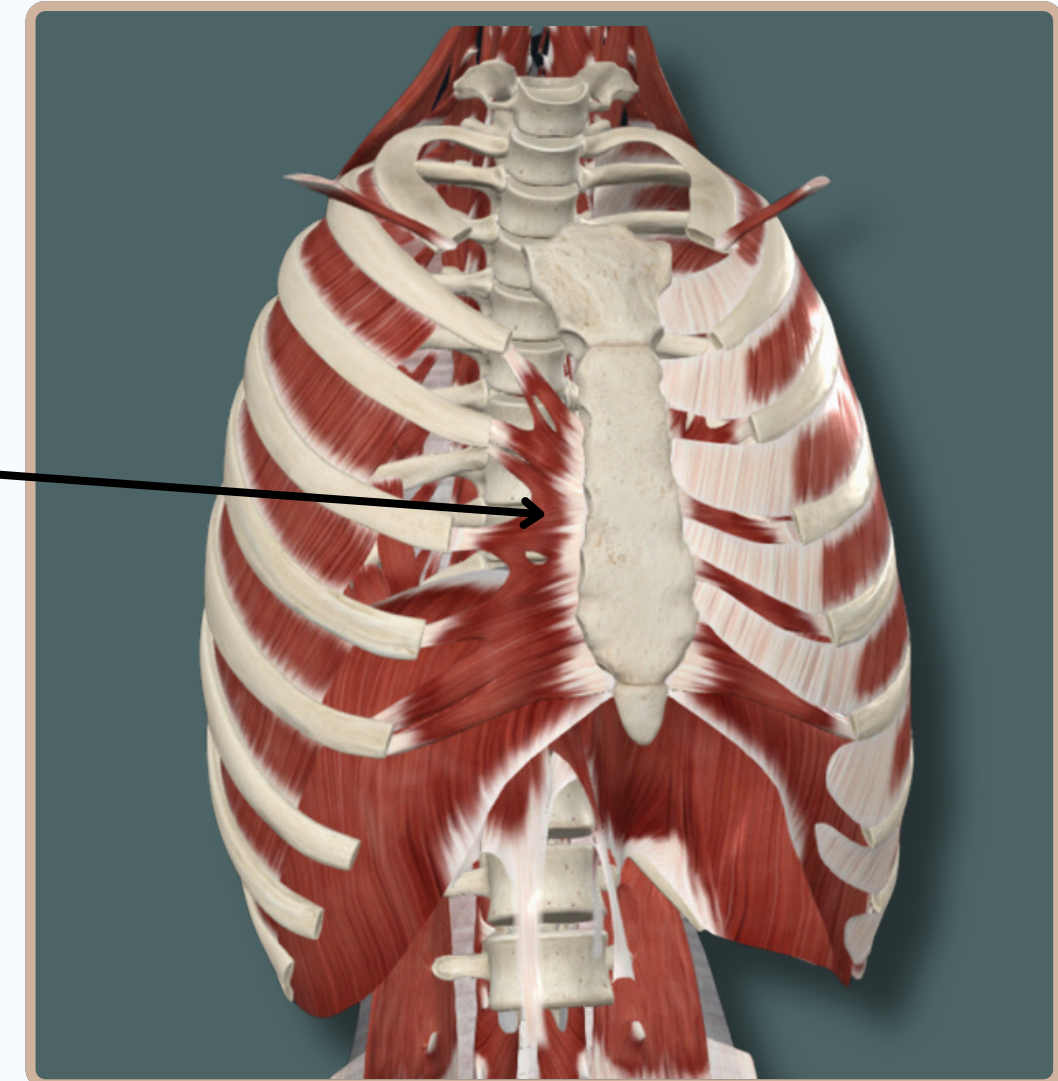
## TRANSVERSUS THORACIS MUSCLE

**Origin :** Posterolateral aspects of body and xiphoid process of **sternum**



### Transversus Thoracis Muscle

**Insertion :** Internal surfaces of second to sixth costal **cartilages** and costal ends of adjacent **ribs**



### **Action :**

-**Depresses** ribs and their costal cartilages

### **Anterior**

### **Nerve Supply :**

**Intercostal Nerves (anterior rami of thoracic nerves)**

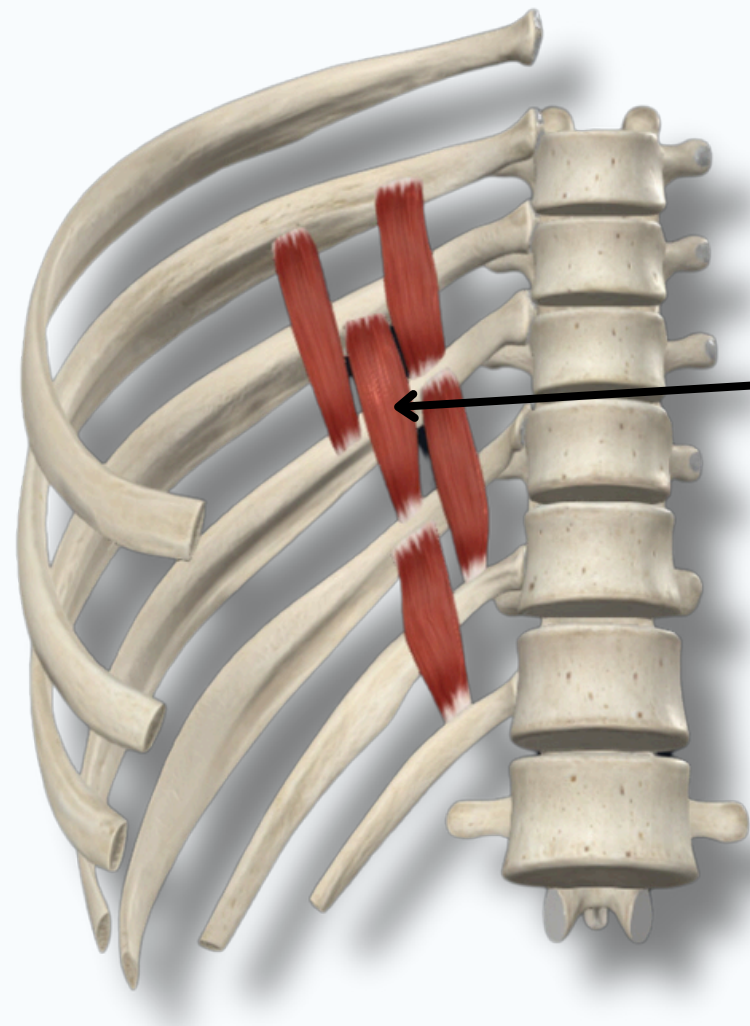


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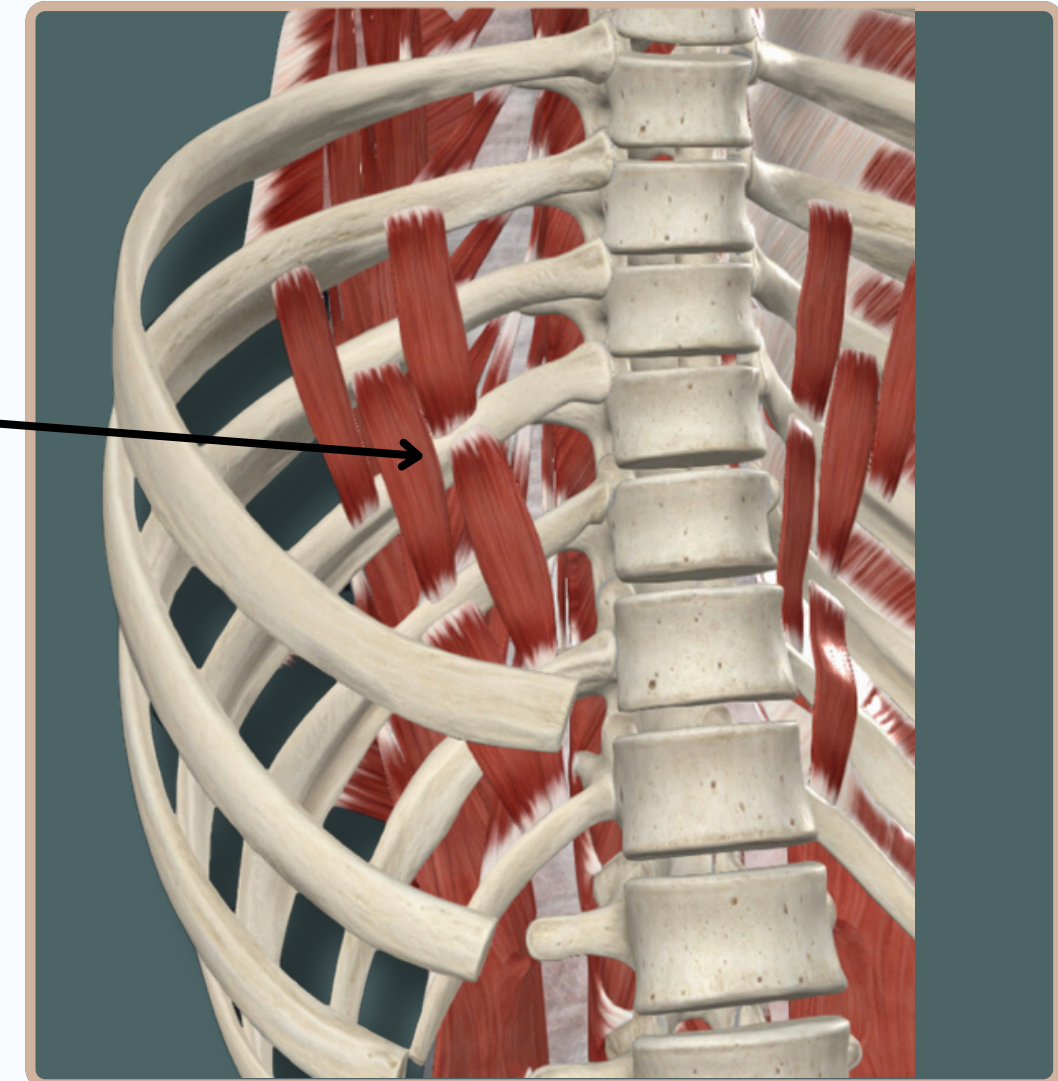


## SUBCOSTAL MUSCLES

**Origin :** Internal surfaces of seventh to tenth **ribs**



**Subcostal Muscles**



**Insertion :** Internal surfaces of ninth to twelfth **ribs**

**Action :**

-**Depresses** ribs and their costal cartilages

**Anterior**

**Nerve Supply :**

**Intercostal Nerves (anterior rami of thoracic nerves)**

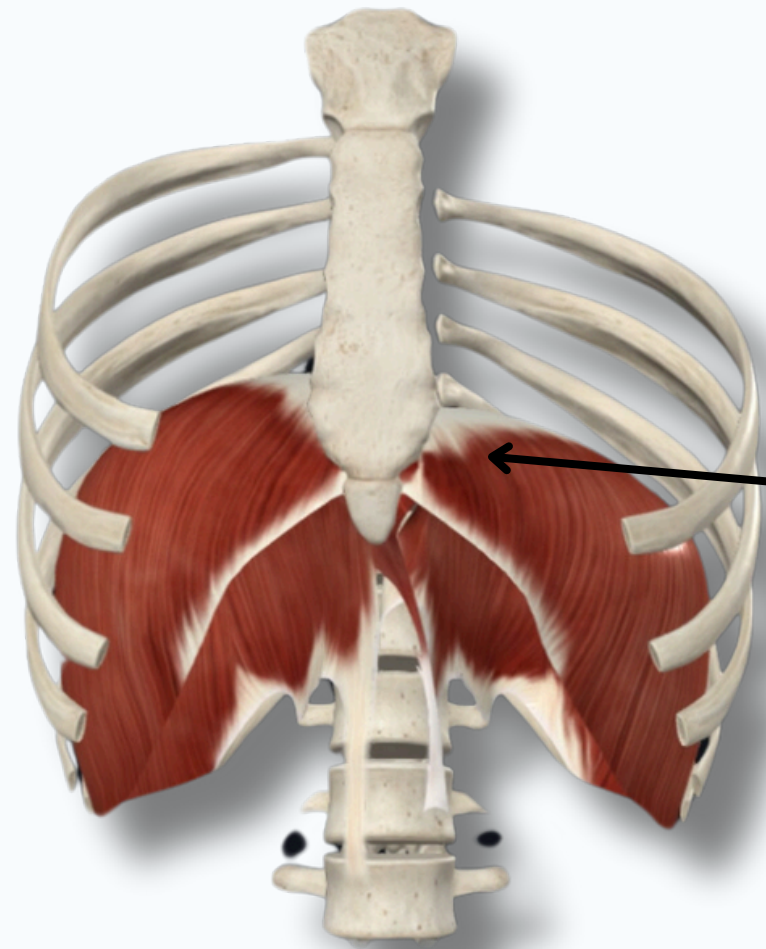


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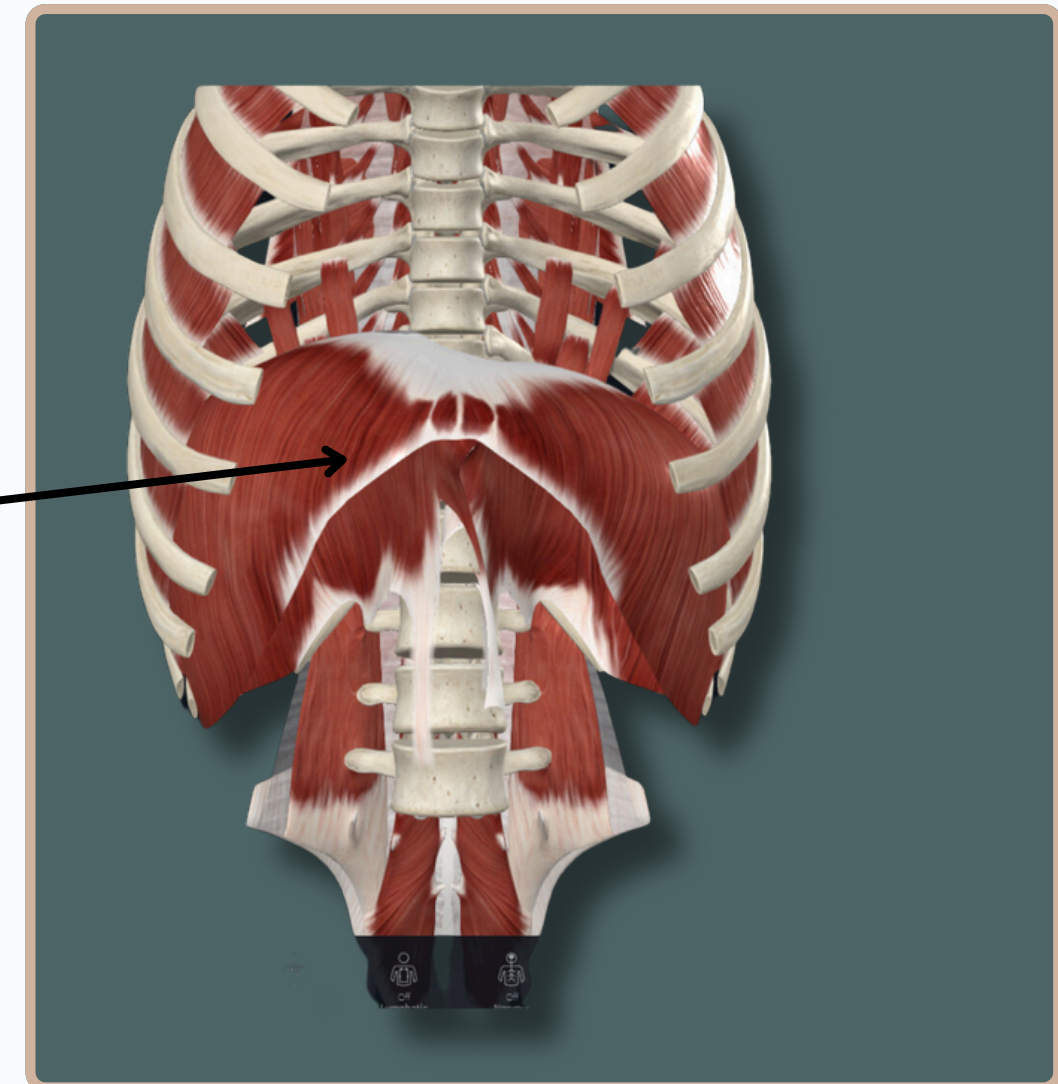


## DIAPHRAGM

**Origin :** -**Xiphoid** process  
-internal surfaces of seventh to twelfth costal cartilages and adjacent **ribs**  
-medial and lateral **arcuate** ligaments L1-L3 vertebrae



**Diaphragm**



**Insertion :** Central tendon

### **Action :**

-Primary muscle of **inspiration**

### **Nerve Supply :**

**Phrenic Nerves (C3-C5)**

**Anterior**





# MUSCLES OF THORACIC REGION



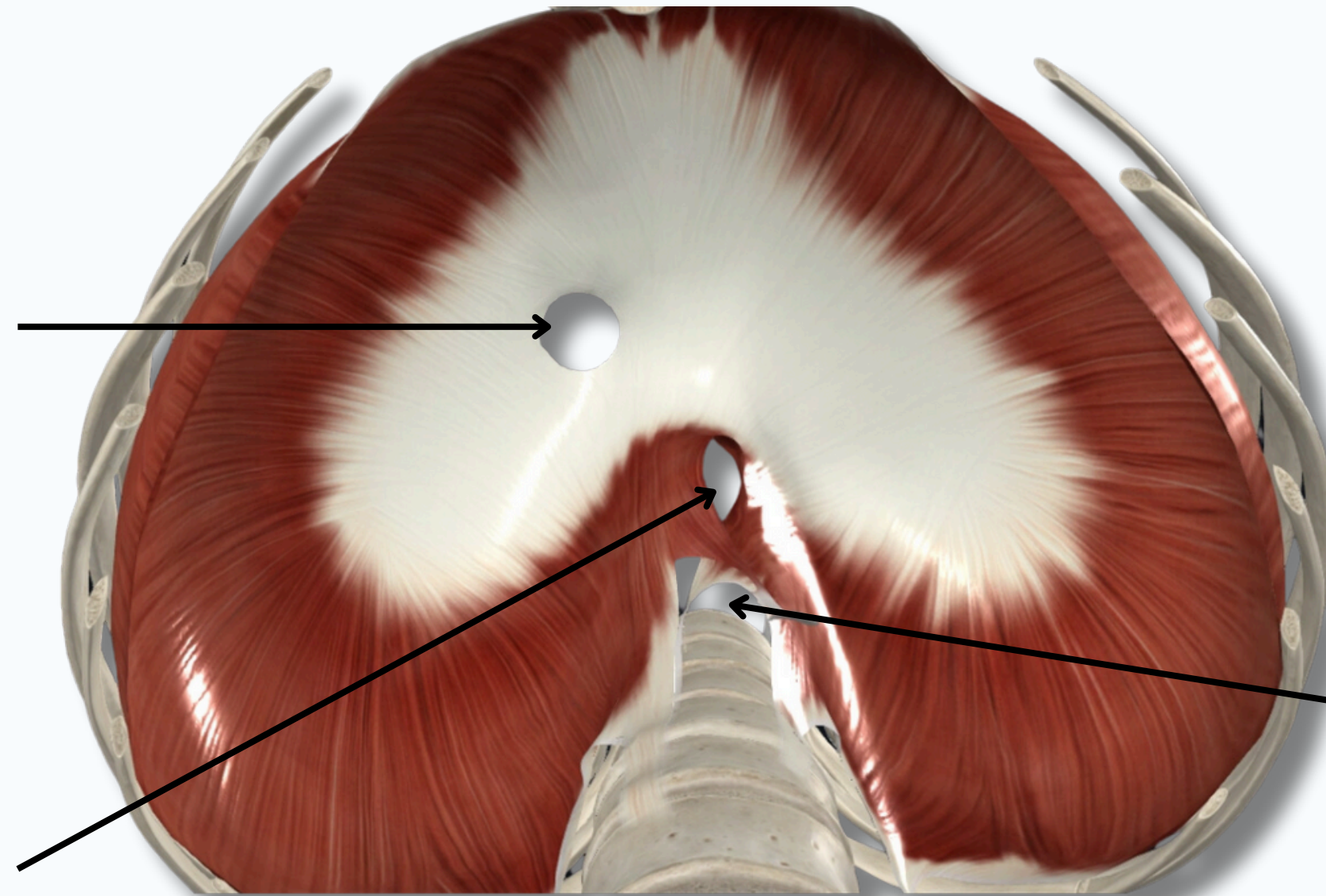
## DIAPHRAGM

### Venacaval Hiatus

It Transmits **Inferior Vena Cava** and Right **Phrenic** Nerve, Located at The Level of **T8**

### Esophageal Hiatus

It Transmits **Esophagus** With Right & Left **Vagus** Nerves, Located at The Level of **T10**



### Aortic Hiatus

It Transmits **Abdominal Aorta** **Thoracic Duct** and **Azygos Vein** Located at The Level of **T12**

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