

Sports Medicine 25

1.1 Part I : ANATOMY OF THE SPINE, ABDOMEN AND SHOULDER COMPLEX

Anatomy of the Upper Body

- In this section of the course we focus upon the upper body.
- We look in detail at the bones of the spine, abdomen and shoulder complex and their surrounding muscles and connective tissues.
- This is preparation for our look at upper body injuries, rehabilitation and taping methods.

Anatomy of the Spinal Cord

The vertebral column is composed of **32-35** individual vertebrae, divided structurally and functionally into

7 Cervical Vertebrae

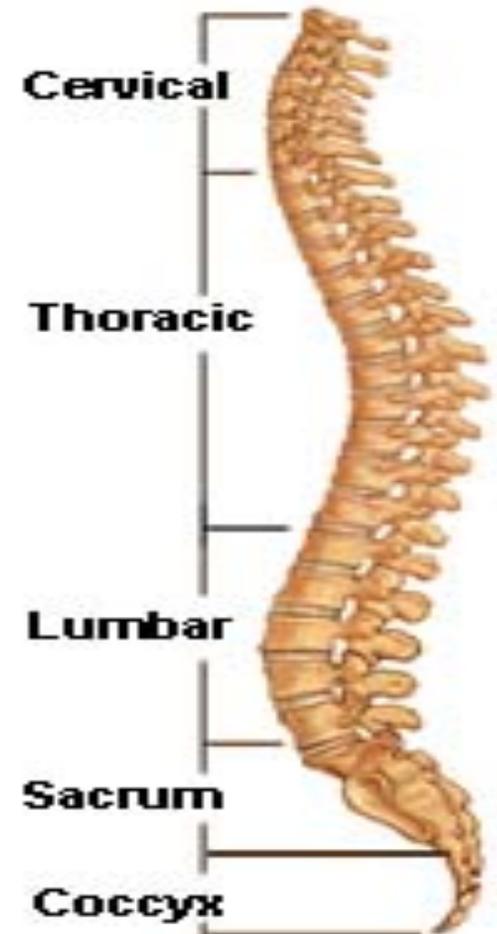
12 Thoracic Vertebrae

5 Lumbar

5 Sacral Vertebrae (fused and commonly called the Sacrum)

3-5 Coccygeal Vertebrae (fused and commonly called the Coccyx)

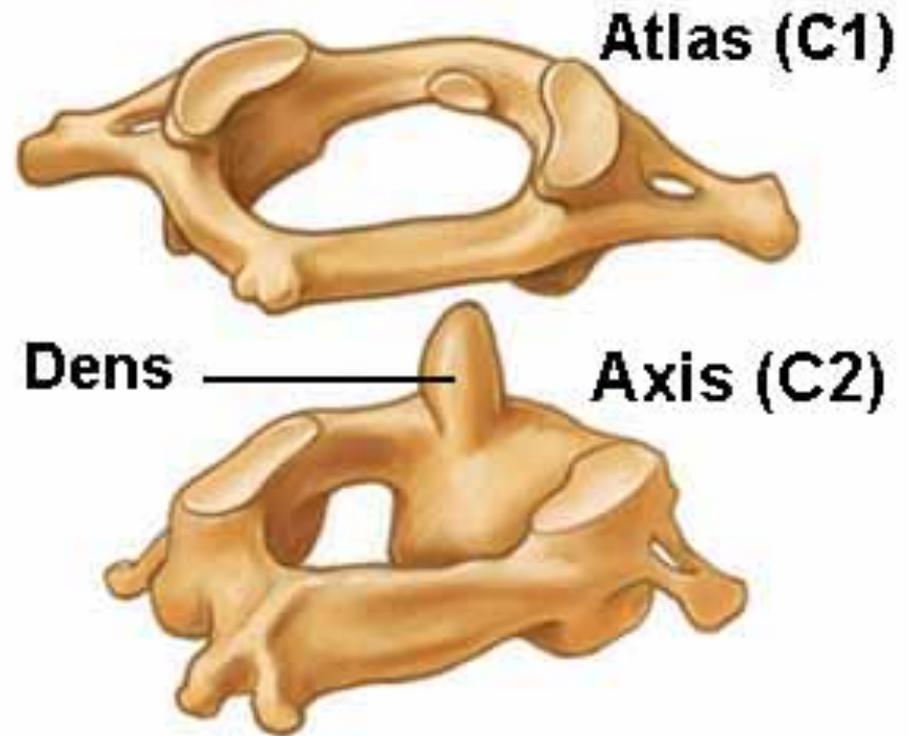
**Lateral (Side)
Spinal Column**



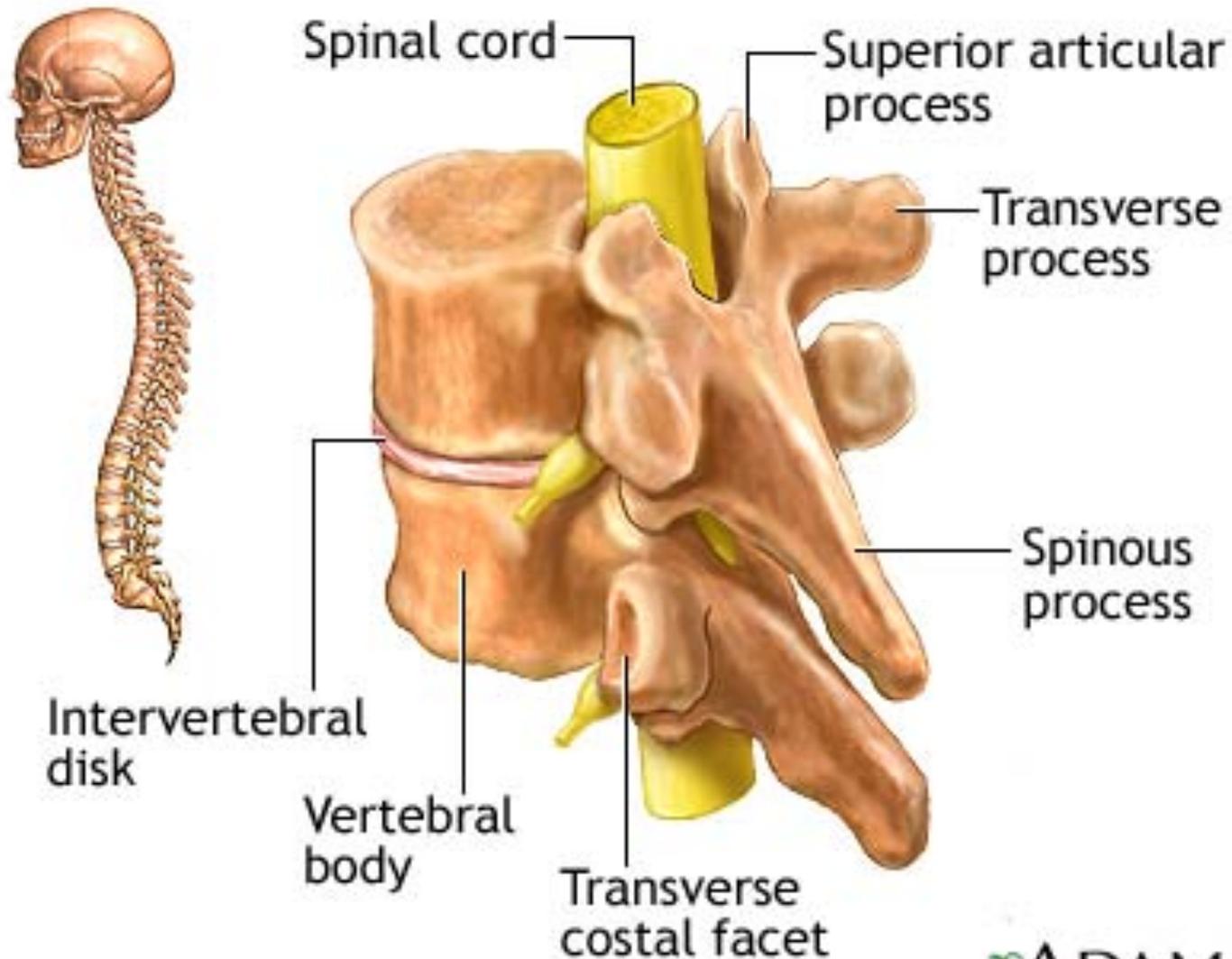
Anatomy of the Spinal Cord

The Atlas and Axis are the very first two cervical vertebrae. What synovial joint is this?

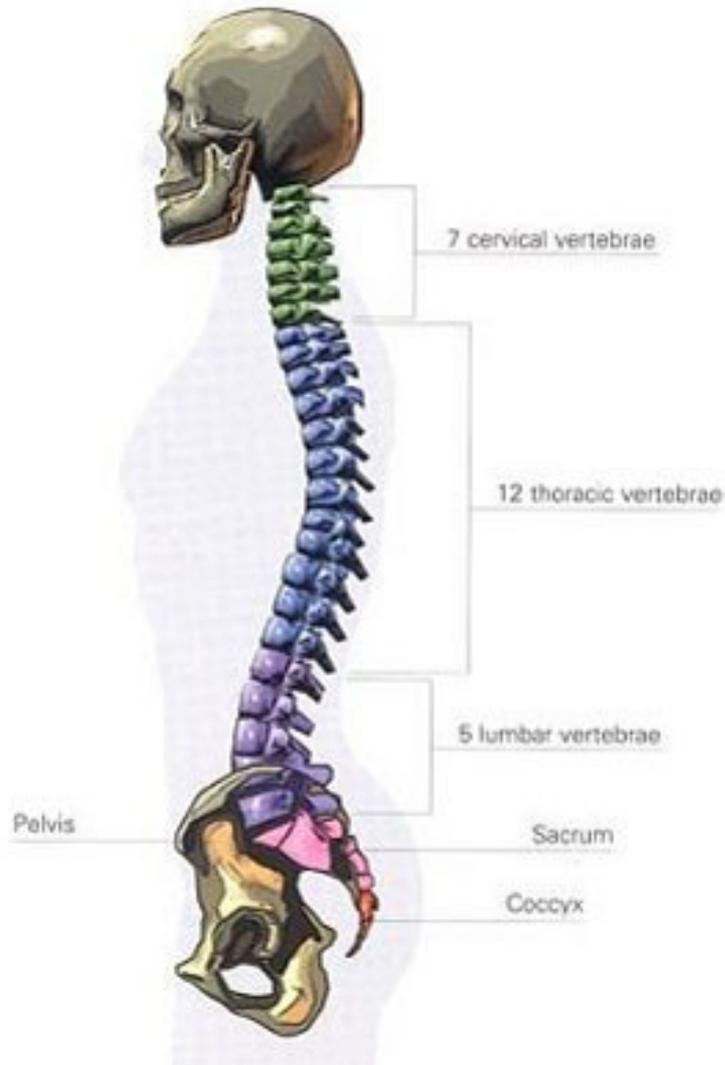
Pivot Joint



Anatomy of the Spinal Cord



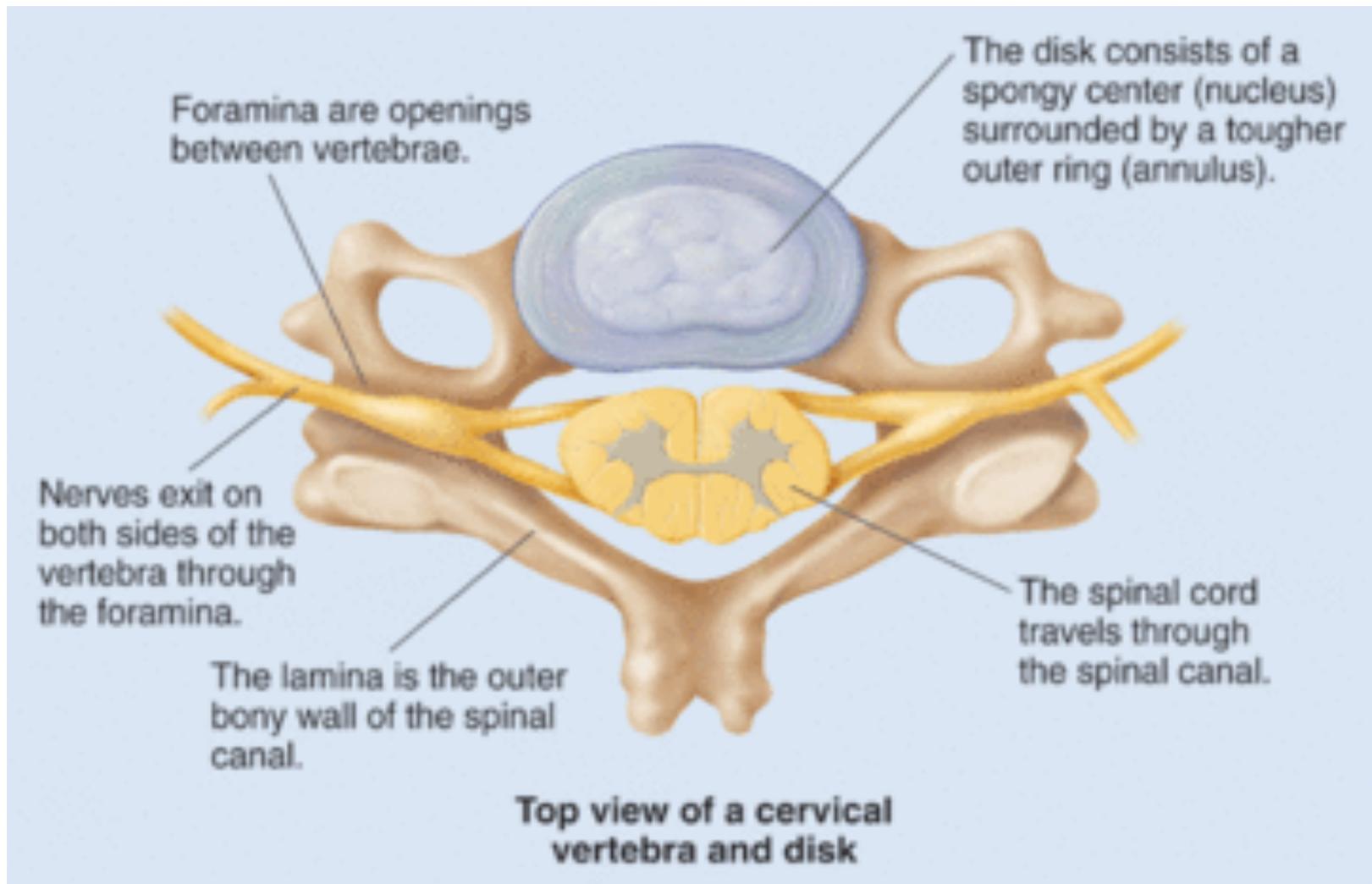
Anatomy of the Spinal Cord



Functionally the Vertebral Column:

- Supports the head, girdles and extremities, while permitting some movement.
- Provides attachment for various muscles, ribs and viscera (internal organs).
- Protects the spinal cord and permits passage of spinal nerves.

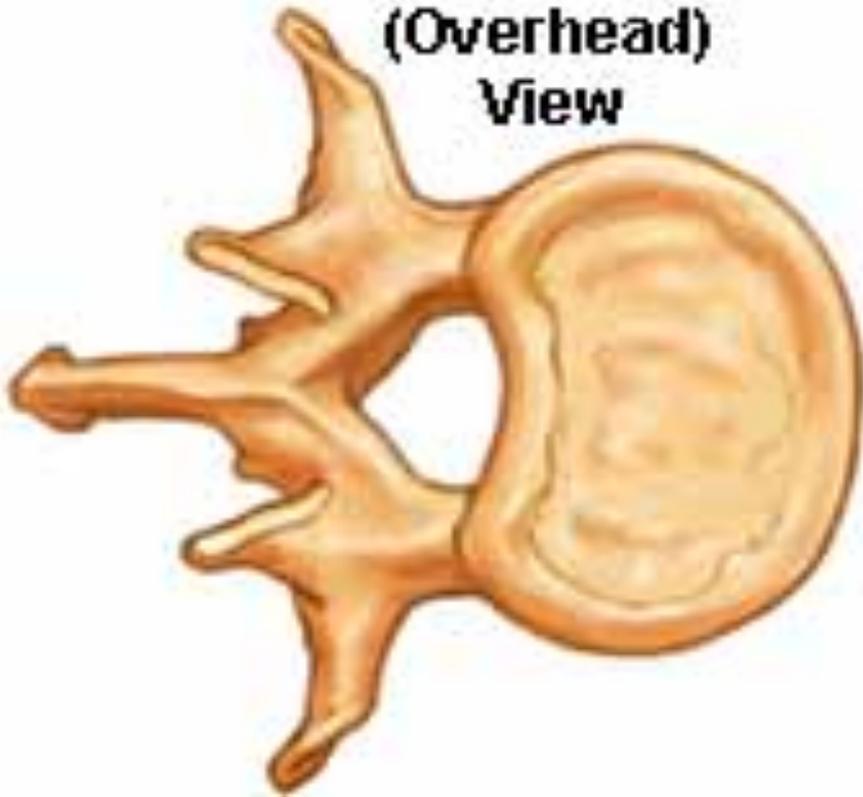
The Cervical Vertebrae



The Lumbar Vertebrae

Lumbar Vertebrae

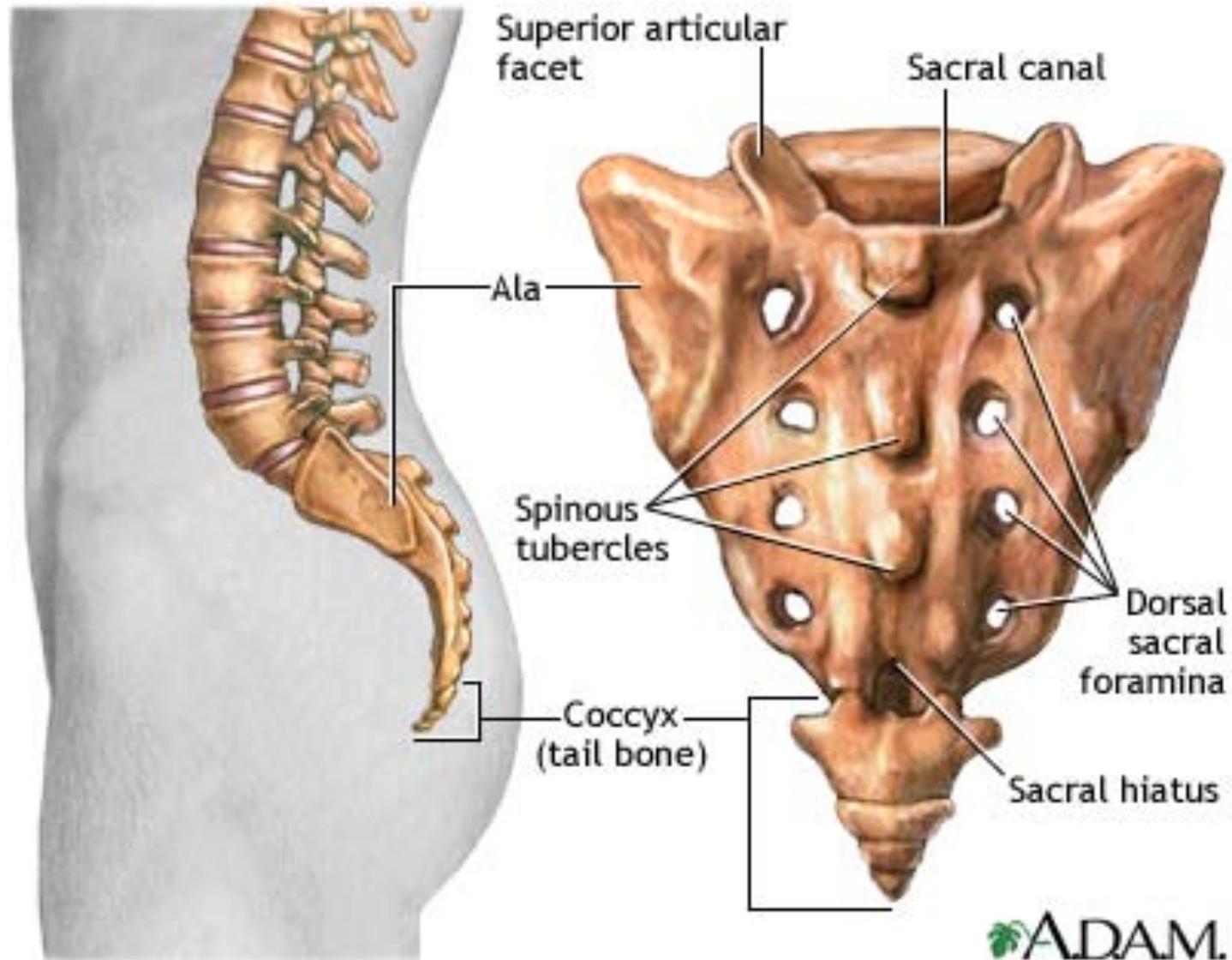
**Axial
(Overhead)
View**



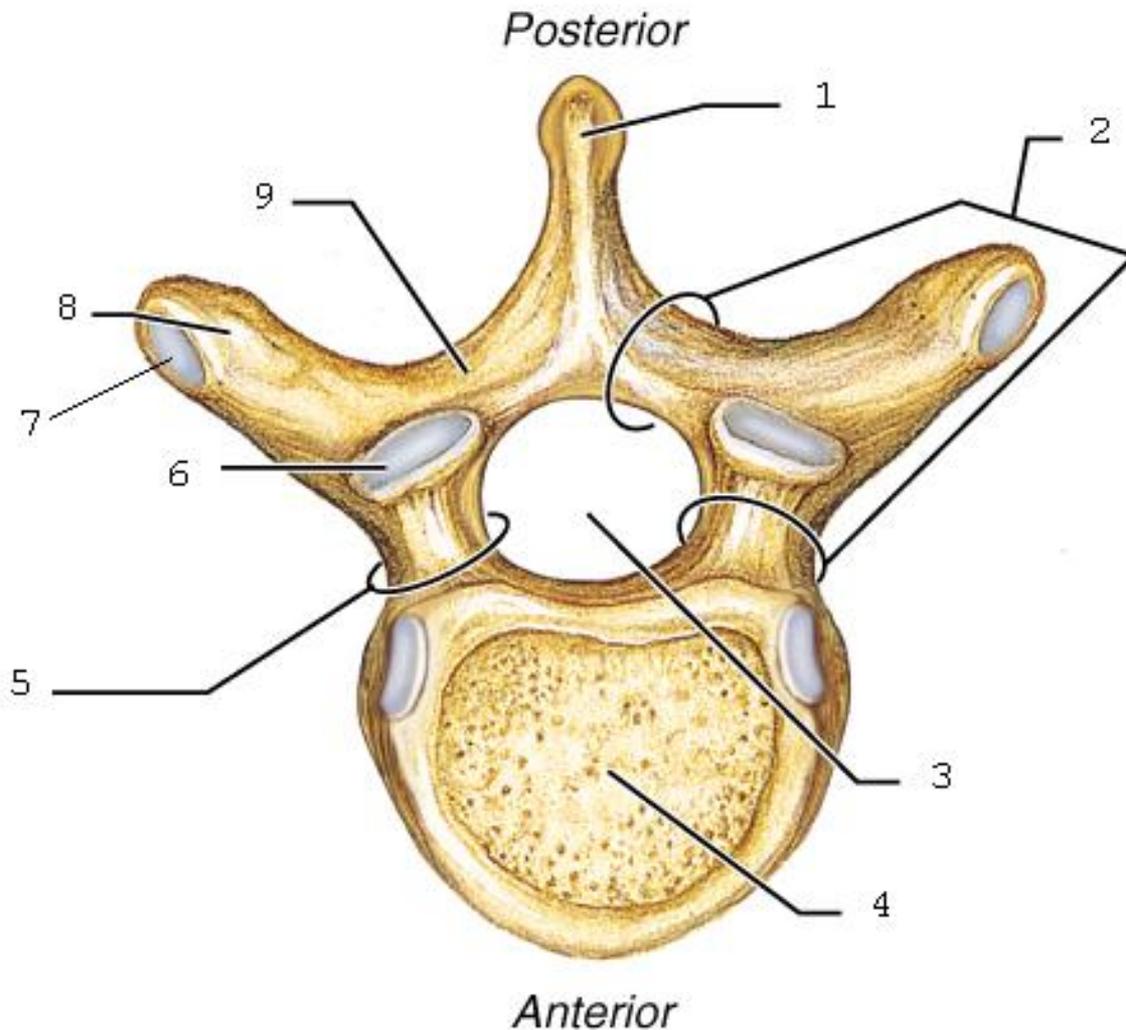
**Lateral
(Side)
View**



The Sacral and Coccygeal Vertebrae



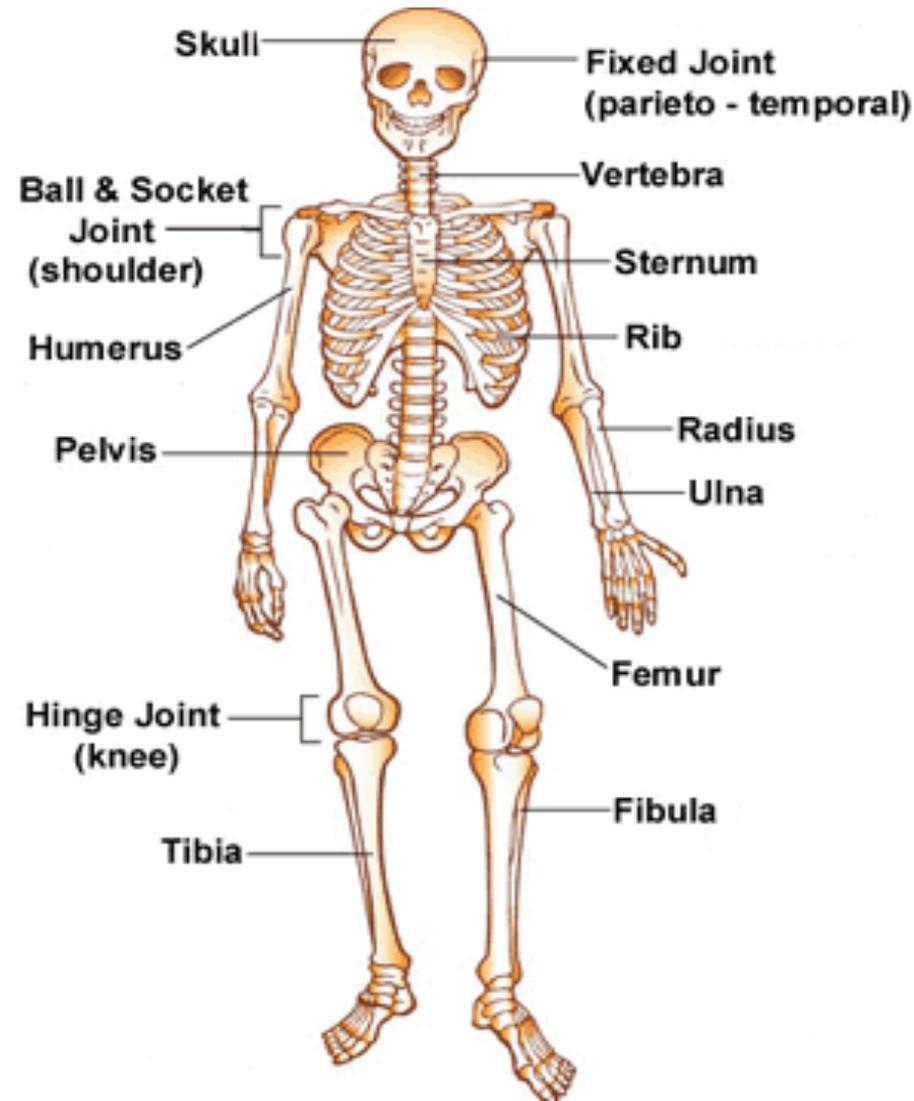
Thoracic Vertebrae



1. Spinous Process
2. Foramen
3. Foramen
4. Vertebral Body
5. Pedicle
6. Superior Articular Facet
7. Facet for Rib Tubercle
8. Transverse Process
9. Lamina

Anatomy of the Upper Limbs

- The **Axial Skeleton** is made up of the Spine, Thoracic cage and Head.
- The **Appendicular Skeleton** is made up of your upper and lower limbs, pelvic girdle and pectoral girdle.



Thoracic Vertebrae

Transverse Process

Tubercle of Rib

Neck of Rib

Head of the Rib

Centrum

Shaft

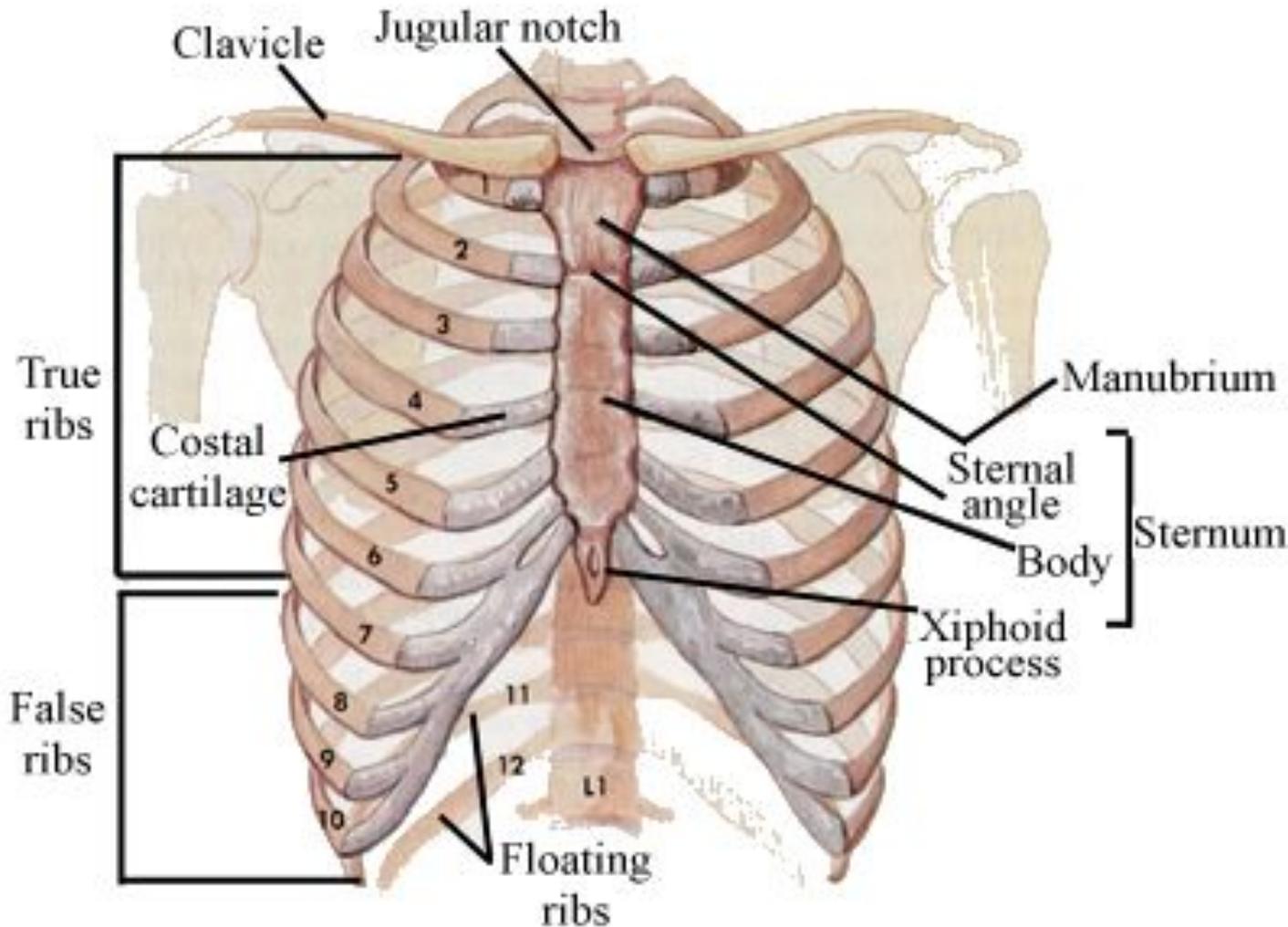
Sternum

Cartilage

Anatomy of the Thoracic Cage

The **thoracic cage** is a bony and cartilaginous structure which surrounds the thoracic cavity and supports the pectoral girdle (shoulder).

Anatomy of the Thoracic Cage



**There are 7
pairs of
True Ribs.**

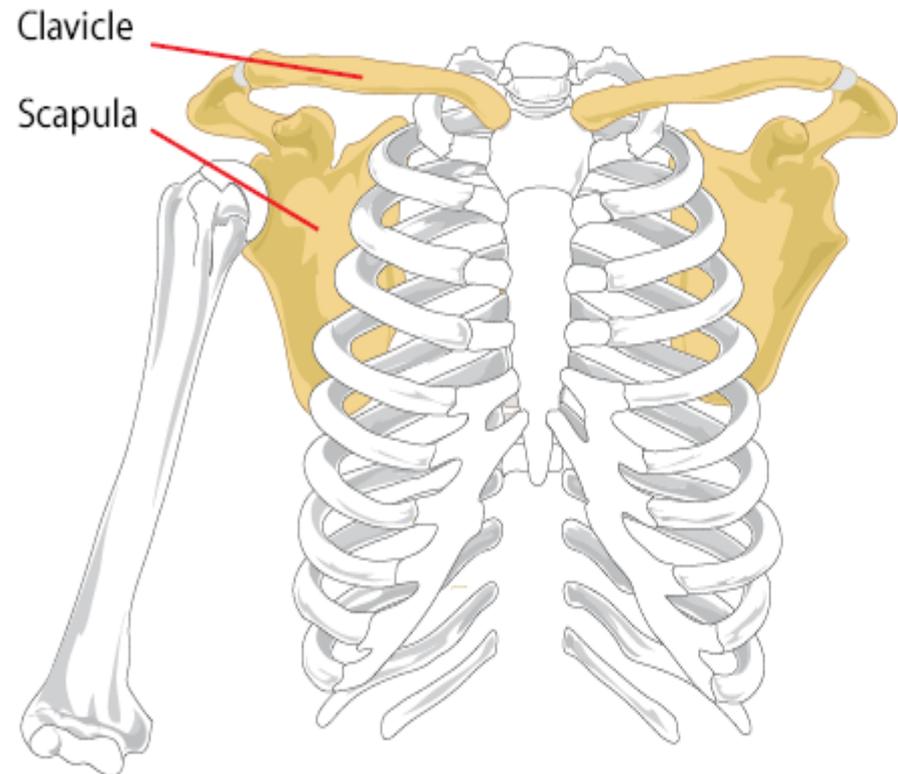
**There are 3
pairs of
False Ribs.**

**There are 2
pairs of
Floating Ribs**

Pectoral Girdle and Upper Extremities

The Pectoral Girdle (Shoulder) is made up of:

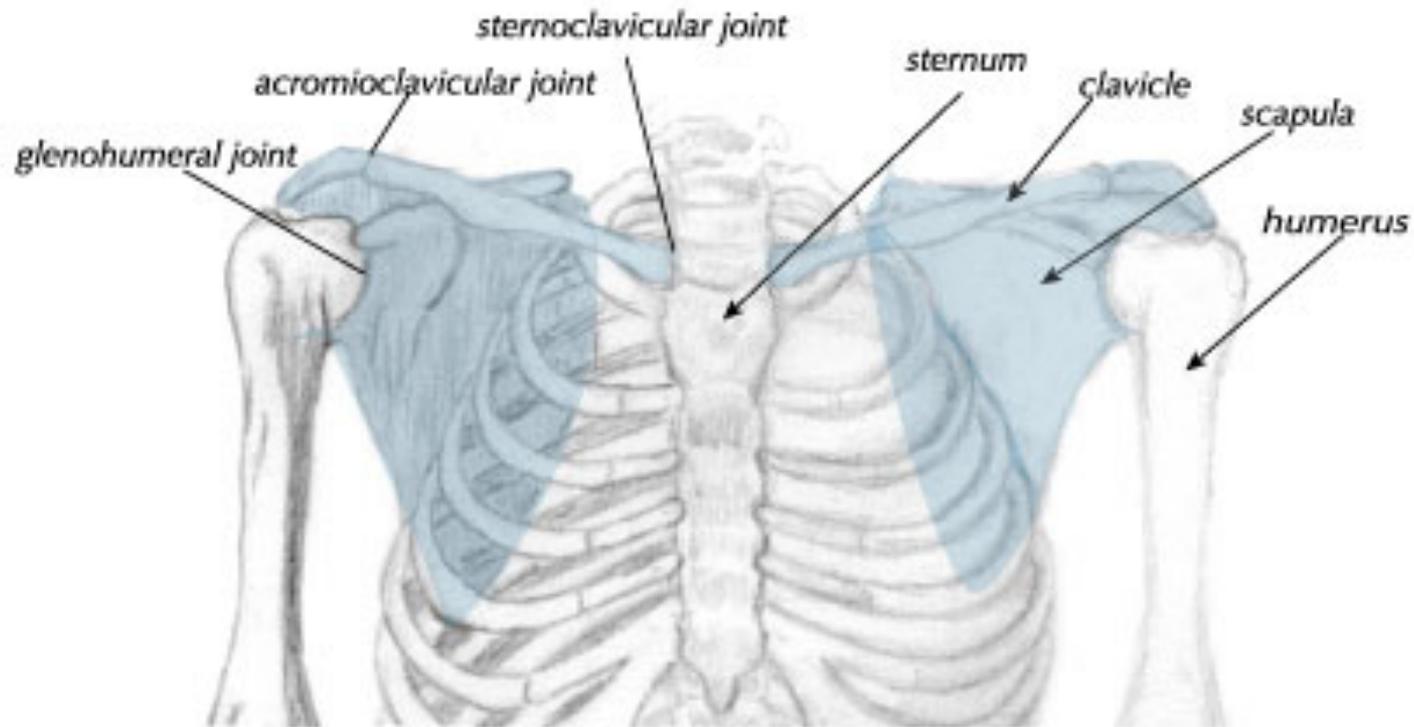
- a. Clavicle
- b. Scapulae



Front view

Pectoral Girdle and Upper Extremities

The Primary function of the pectoral girdle is for the attachment of the muscles that move the upper extremities.

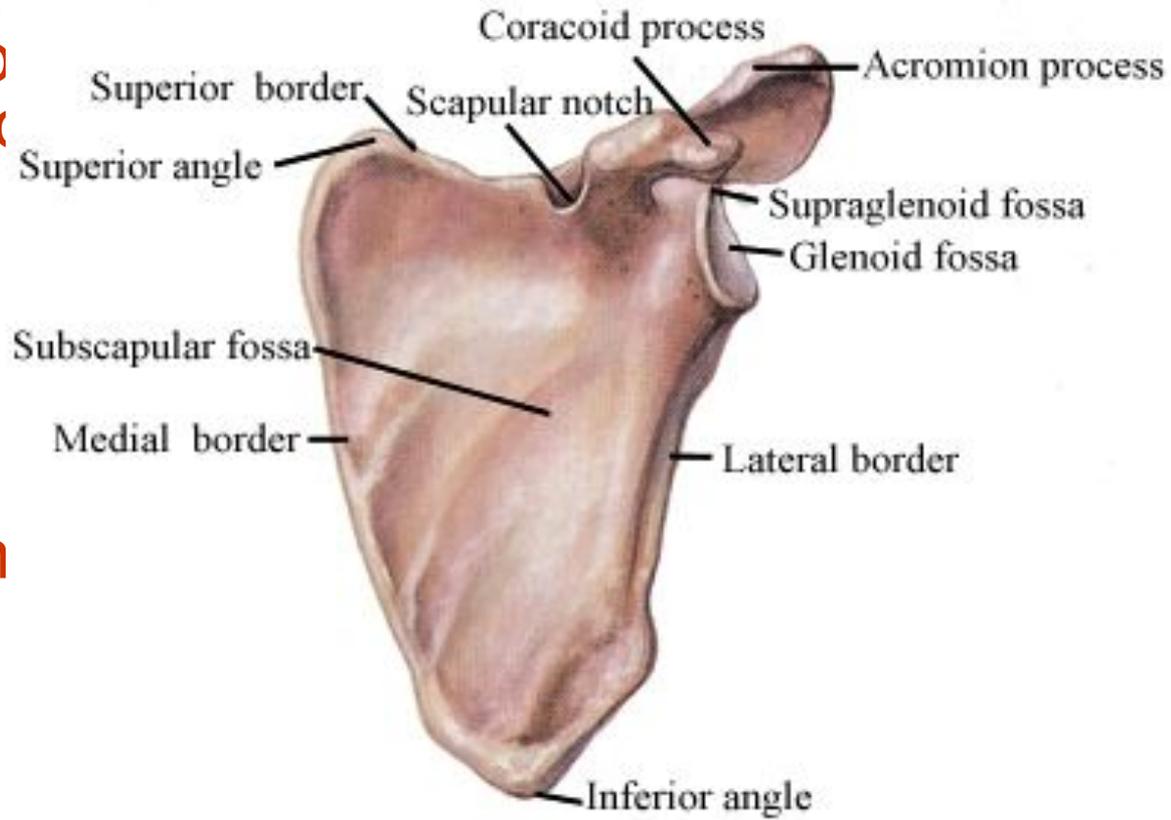


anterior pectoral girdle

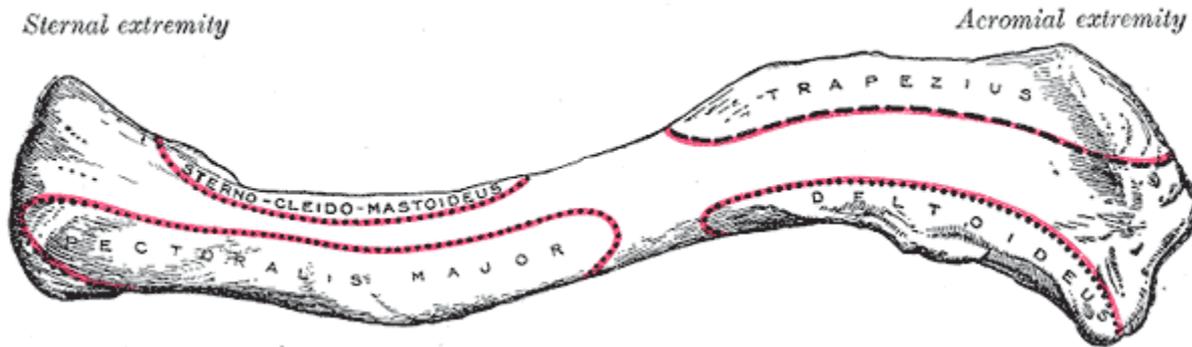
The Scapula

The scapula is large, triangular, flat bone of the posterior aspect of the upper rib cage.

The head of the humerus fits into the depression of the glenoid cavity, forming the ball and socket joint (glenohumeral joint).



The Clavicle

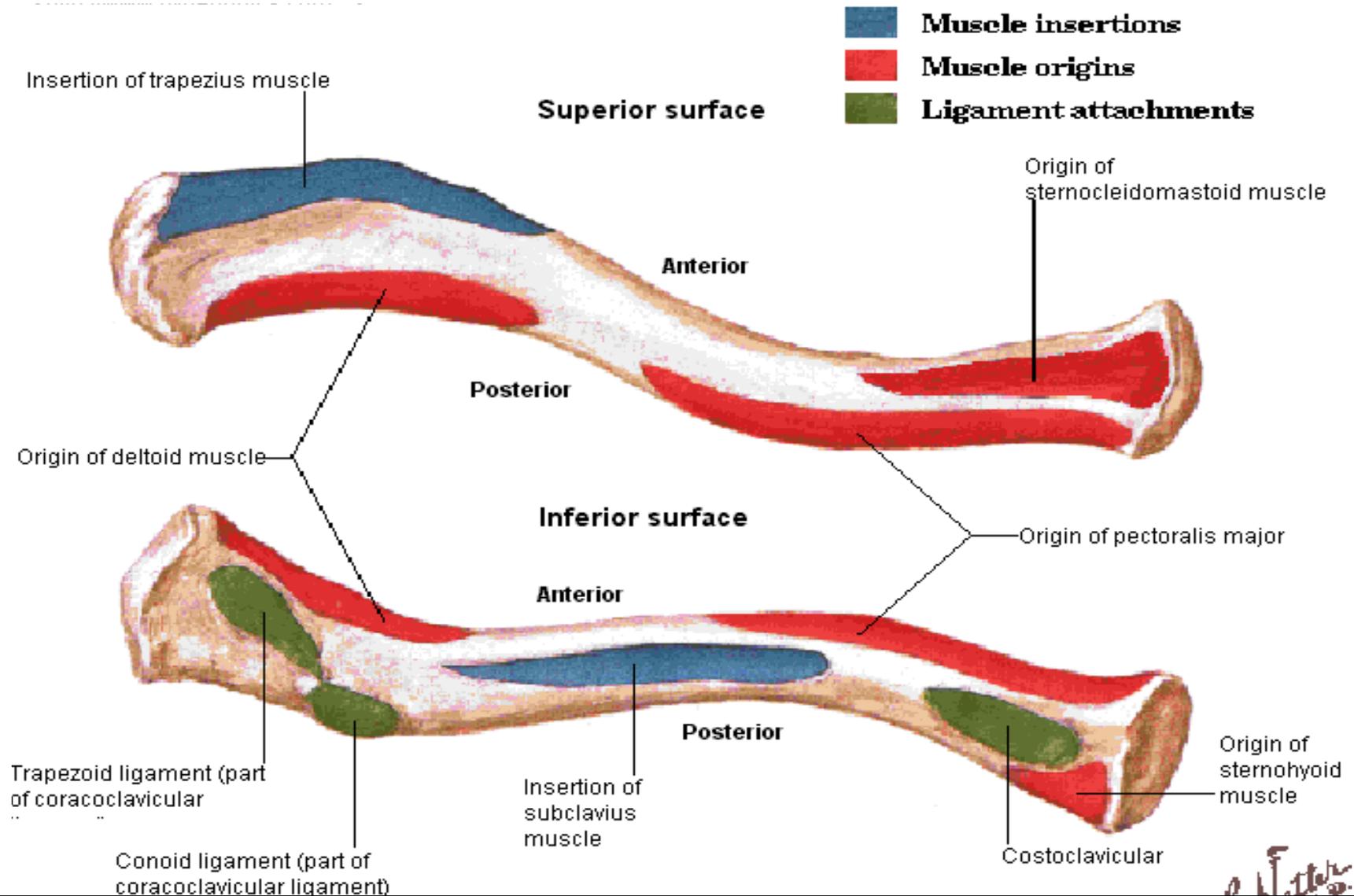


The s-shaped clavicle connects the shoulder to the axial skeleton and positions the shoulder away from trunk for freedom of movement.

Articulations (joint):

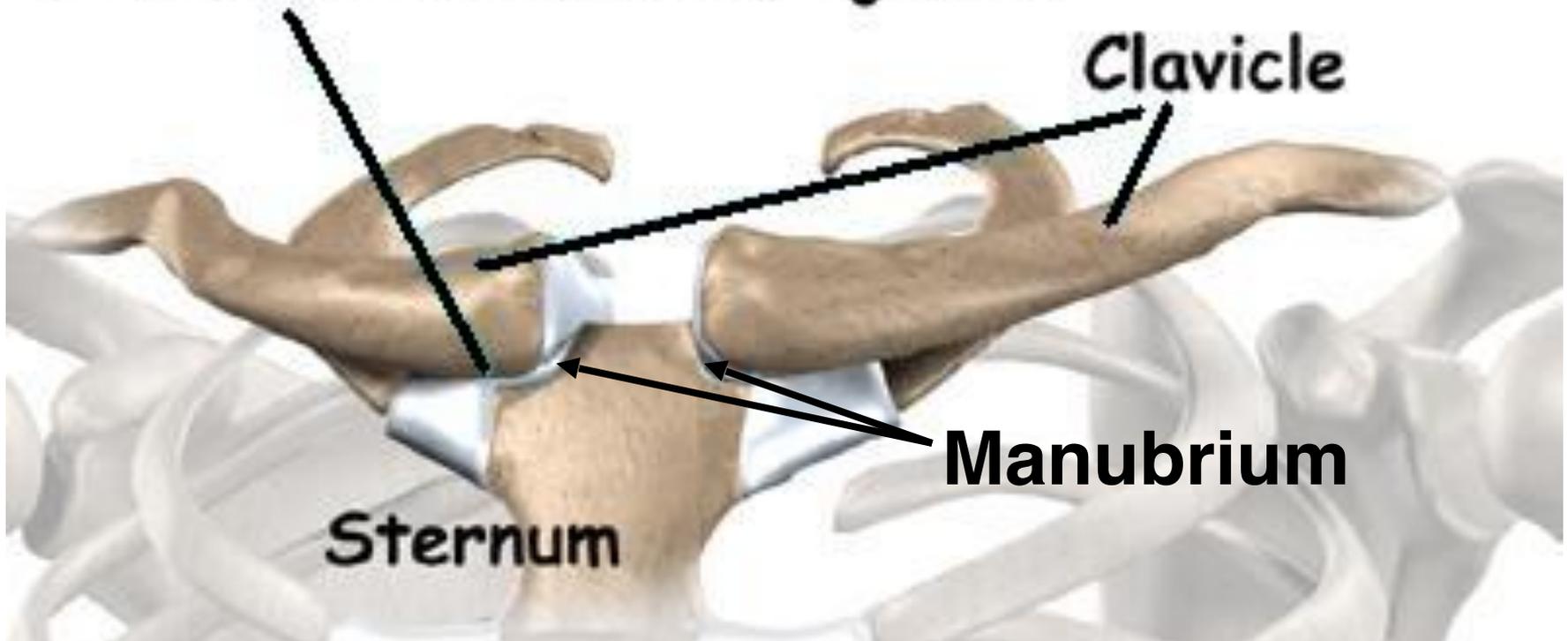
- The medial end of the clavicle joins up with the manubrium of the sternum also know as the **Sternoclavicular joint**.
- The lateral end of the clavicle joins up with the acromian of the scapula also known as the **Acromioclavicular joint**.

Right Clavicle – Muscle Attachments



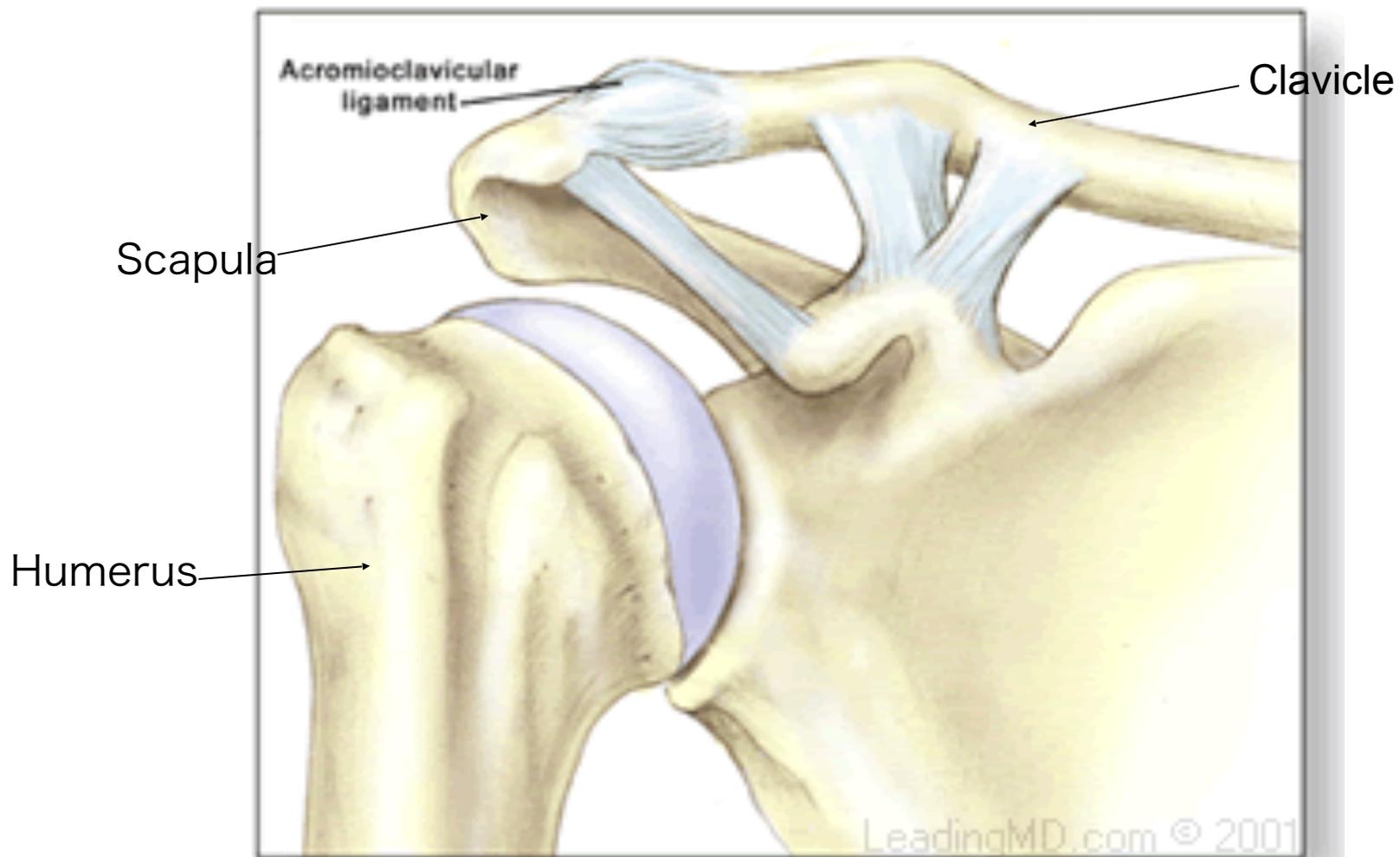
The Clavicle: Sternoclavicular Joint

Sternoclavicular joint

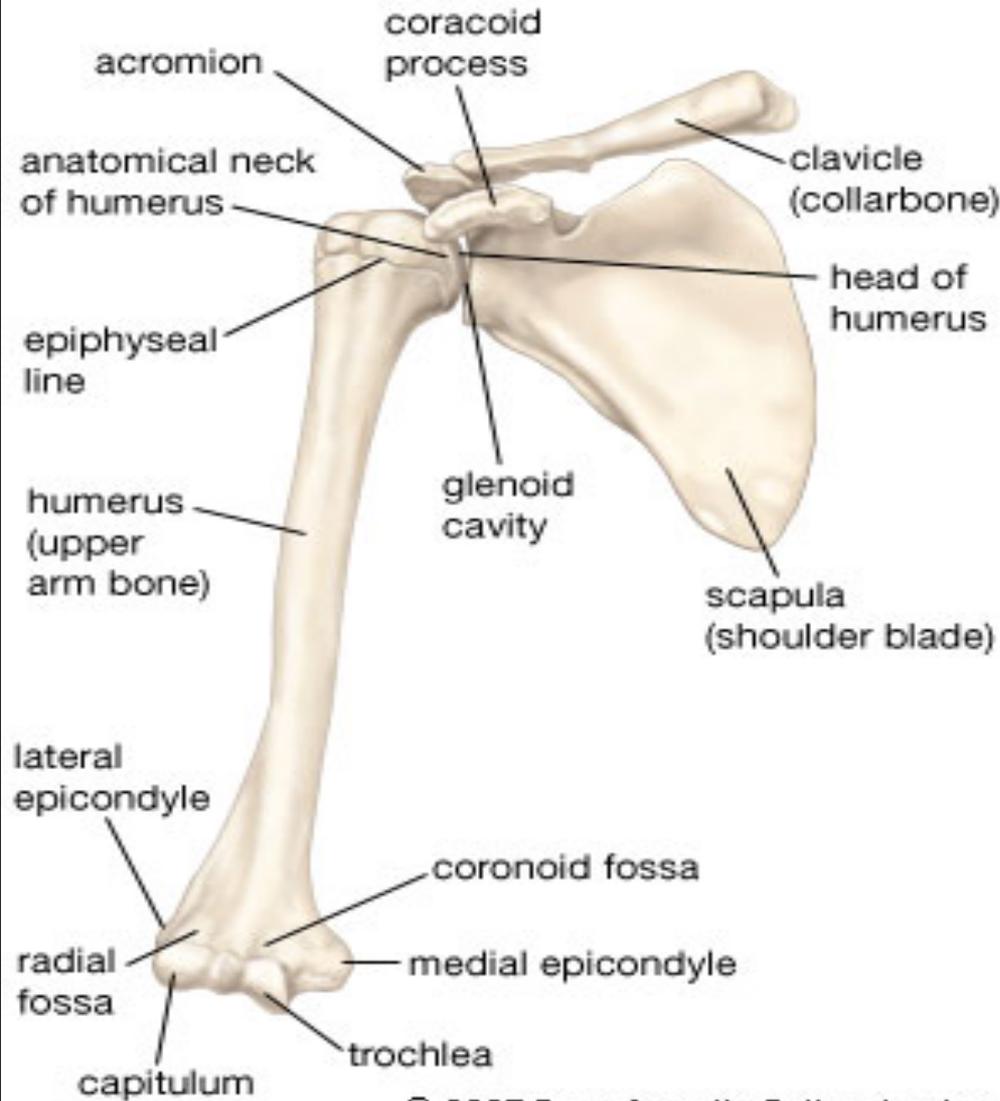


The Clavicle: Acromioclavicular Joint

Normal Acromioclavicular joint



The Humerus



The Humerus is a long robust bone that articulates (joins) proximally with the scapula and distally with the ulna and radius.

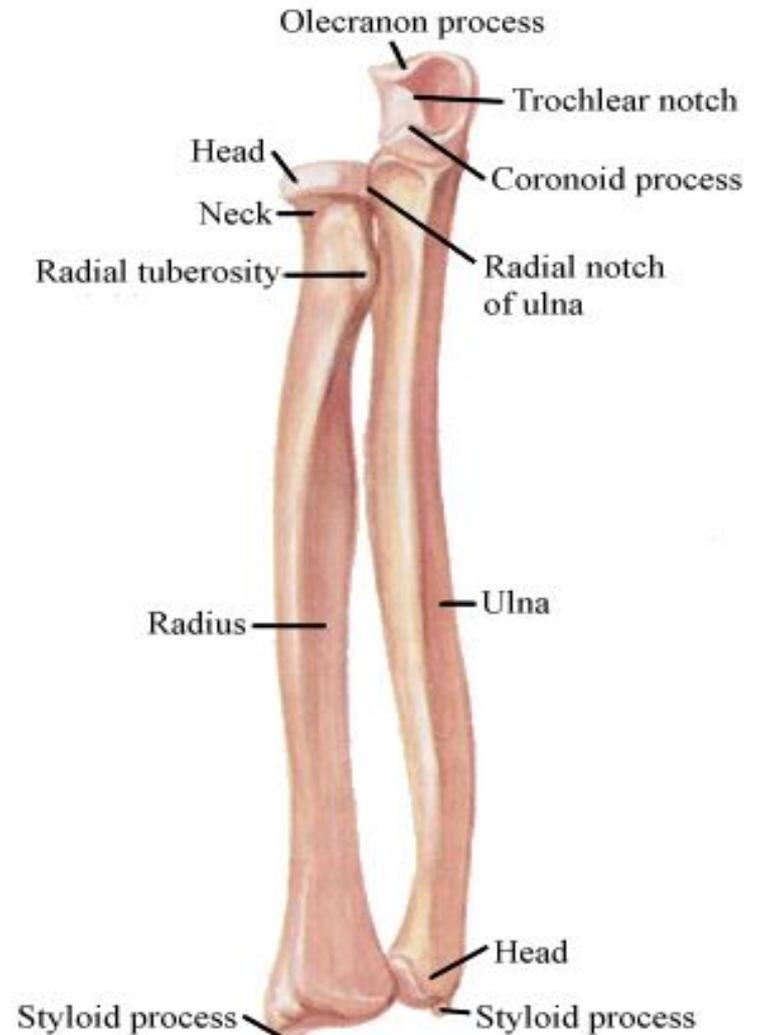
The Ulna and Radius

The **Ulna** is on the **medial** side and the **radius** is on the **lateral** side.

The **Ulna** is more firmly connected to the distal end of the **humerus** and is longer than the radius.

The **radius**, however, is more firmly attached to the **wrist** joint than the ulna.

* Notice the difference where the ulna attaches to the humerus and where the radius attaches to the carpals.



The Carpals

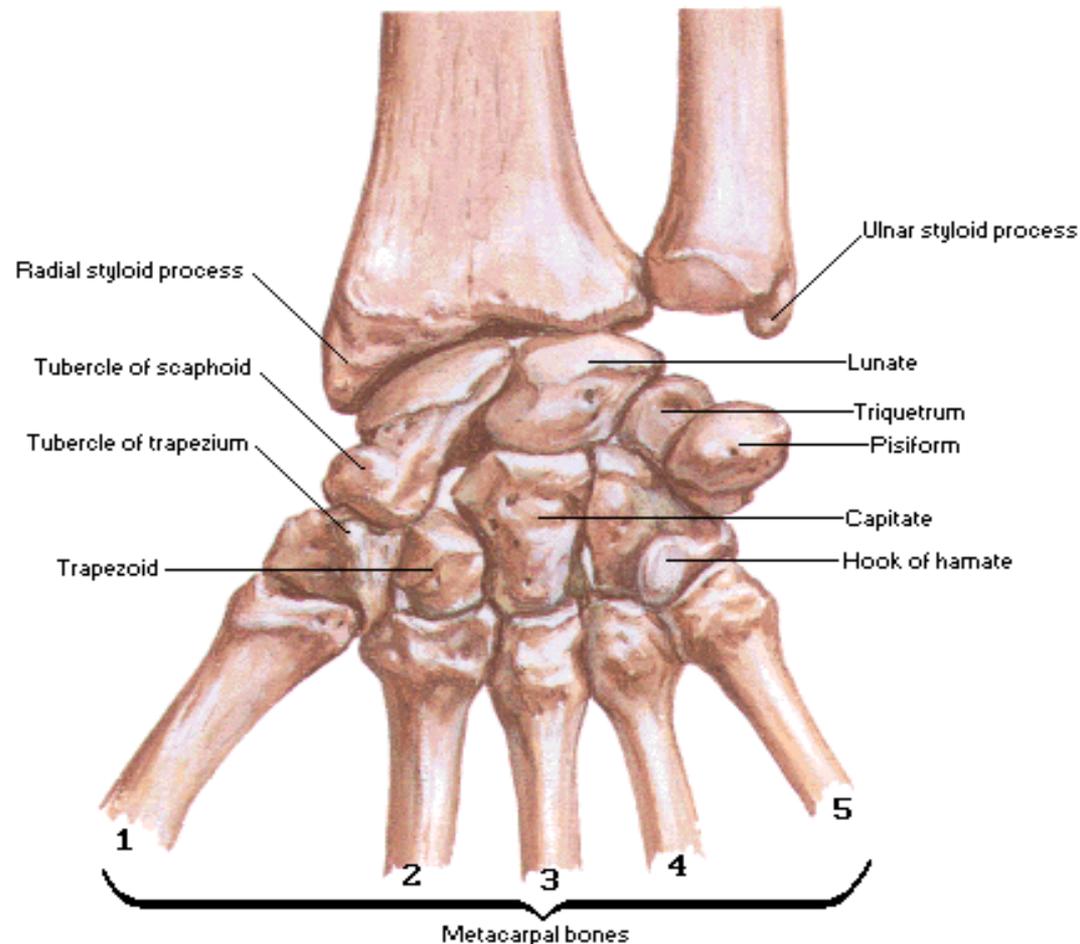
The wrist and hand consists of 27 bones.

The Carpals have 8 of those bones arranged in two rows of 4.

1st Row: Scaphoid, Lunate, Triquetrum & Pisiform

2nd Row: Trapezium, Trapezoid, Capitate, Hamate

Carpal Bones
Anterior [Palmar] View

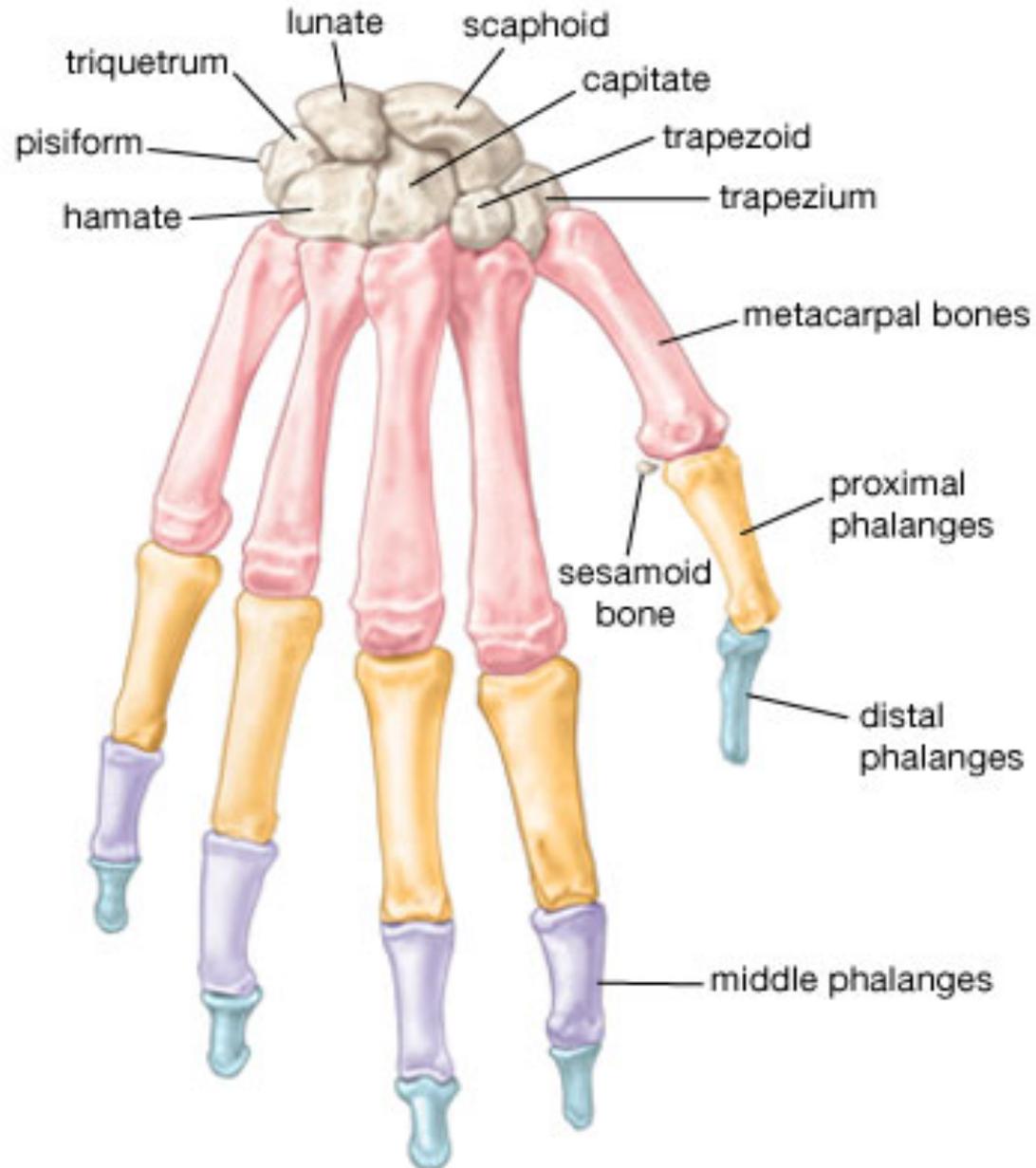


The Carpals

The Metacarpals make up the next 5 bones.

The Phalanges make up the next 14 bones.

There are 4 sets of 3 phalanges for your 4 fingers and then the thumb has 2, a distal and a proximal phalanx



The Pectoral Girdle and Upper Extremities

