# محاضرة التشريح الشعاعي -المرحلة الثانية

## كلية المامون الجامعة

## الفصل الأول

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# SHOULDER GIRDLE (SCAPULA AND CLAVICLE BONES)

## *RADIOLOGICAL FEATURES OF CLAVICLE AND SCAPULA*

## Ossification centers

**Shoulder** the joint between the arm, or forelimb, and the trunk, together with the adjacent tissue, particularly the tissue over the shoulder blade, or scapula.

The shoulder, or pectoral, girdle is composed of the clavicles(collar bone) and the scapulae (shoulder blades).

In humans the clavicles join the sternum (breastbone) medially and the scapulae laterally; the scapulae, are joined to the trunk only by muscles.

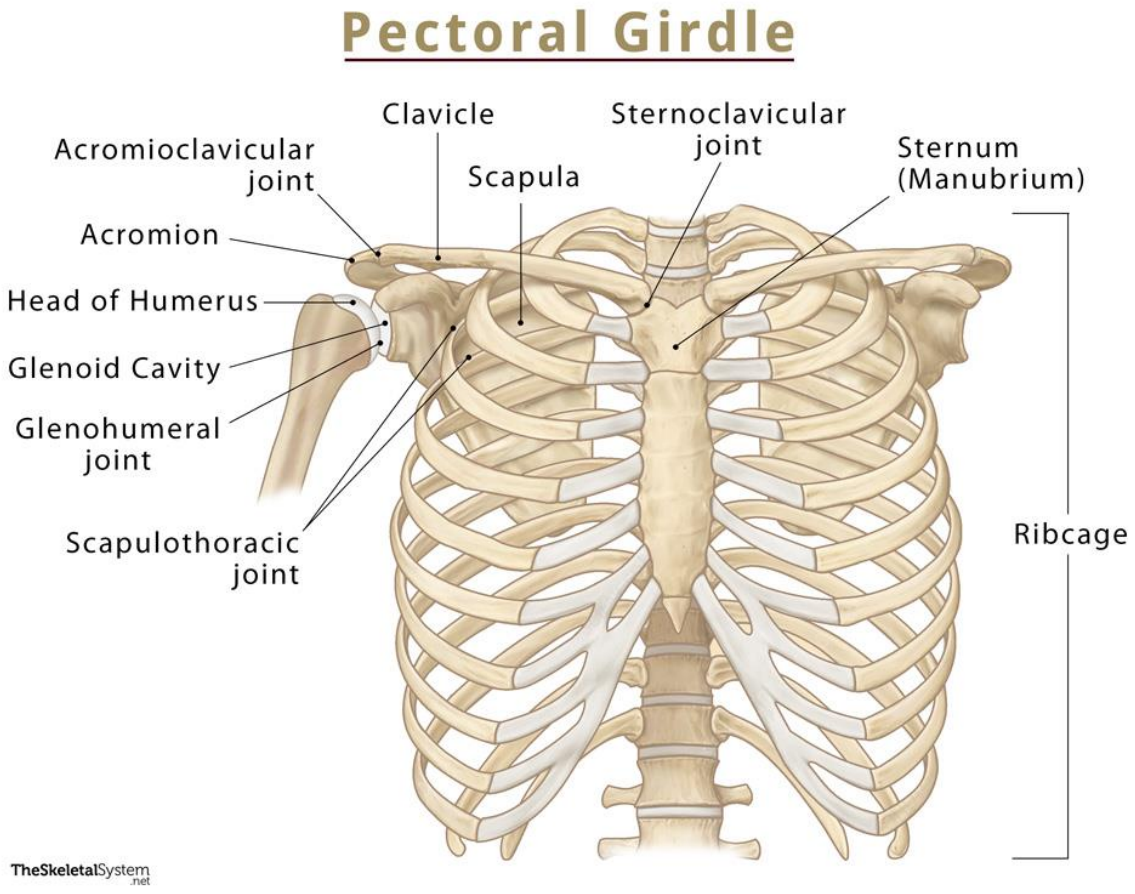
the humerus (upper arm bone)

The major joint of the shoulder is the glenohumeral joint, a ball-and-socket joint in which the humerus is recessed into the scapula(in glenoid fossa or cavity)

the bony structure on either side of the body that connects the arm to the upper portion of the axial skeleton, being composed of the clavicle (collarbone) and the scapula (shoulder blade).

The pectoral girdle is part of the appendicular skeleton, which also includes the pelvic girdle and the bones of the limbs, hands, and feet

The scapula is a thin, flat triangular-shaped bone placed on the postero-lateral aspect of the thoracic cage. It has 2 surfaces, 3 borders, 3 angles and 3 processes[1].



***The major movements at the glenohumeral joint are***:

- **Abduction: upward** lateral movement of humerus out to the side, away from the body
- **Adduction: downward** movement of humerus medially toward the body from abduction
- **Flexion**: the movement of humerus straight anteriorly
- **Extension**: the movement of humerus straight posteriorly
- **External rotation**: the movement of humerus laterally around its long axis away from the midline
- **Internal rotation**: the movement of humerus medially around its long axis toward the midline
- **Horizontal adduction** (transverse flexion): the movement of the humerus in a horizontal or transverse plane toward and across the chest
- **Horizontal abduction** (transverse extension): the movement of the humerus in a horizontal or transverse plane away from the chest

## *Function of shoulder girdle or pectoral girdle*

**pectoral girdles are responsible for**

1- providing structural support to the shoulder region on the left and right side of the body.

2- They allow for a large range of motion,

3- connecting muscles necessary for shoulder and arm movement.

## Clavicle

The clavicle is a sigmoid-shaped(S shaped) long bone with a convex surface along its medial end when observed from cephalad position.

It serves as a connection between the axial and appendicular skeleton in conjunction with the scapula, and each of these structures forms the pectoral girdle

The clavicles of the pectoral girdle are S-shaped bones that extend horizontally from either side of the anterior base of the neck.

On their medial (central) ends, they articulate with, and are supported by, the manubrium, the roughly trapezoidal portion of the sternum (breastbone).

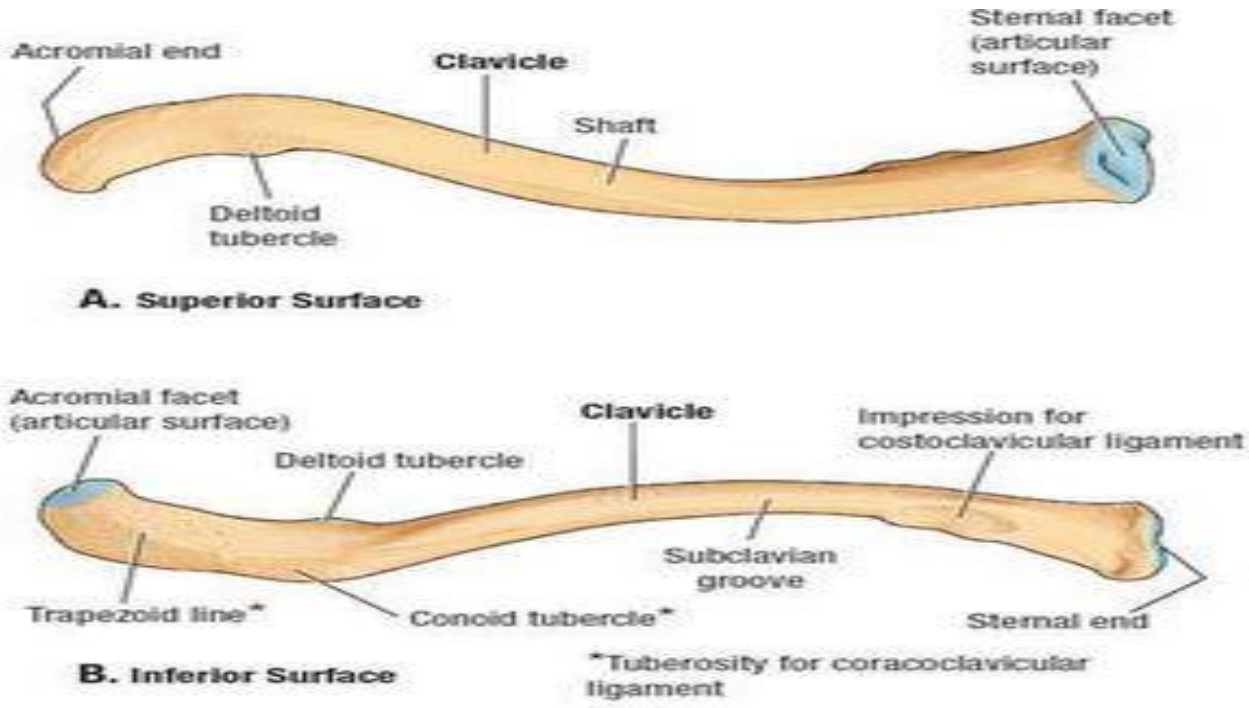
At this articulation, known as the sternoclavicular joint,

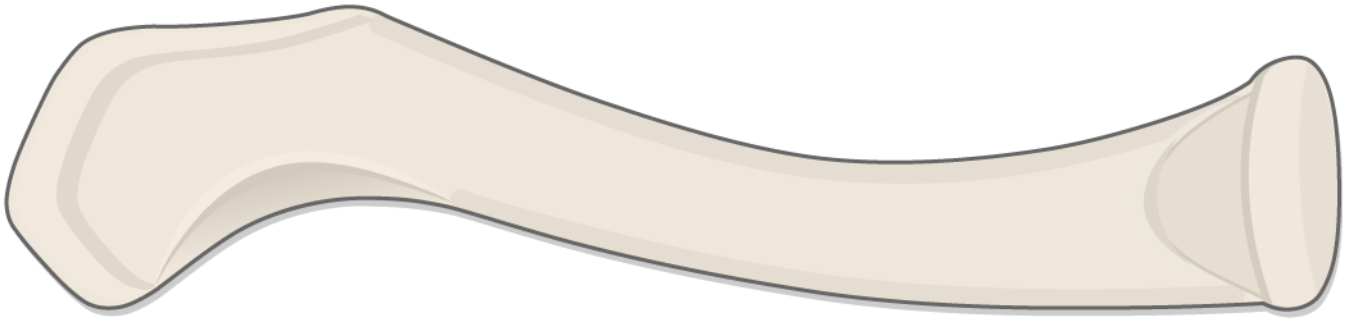
the costoclavicular ligament forms an attachment between the clavicle and the first rib.

At their lateral (outer) ends, the clavicles articulate with the acromion, or outer edge of the scapula. This articulation, known as the acromioclavicular joint, its function

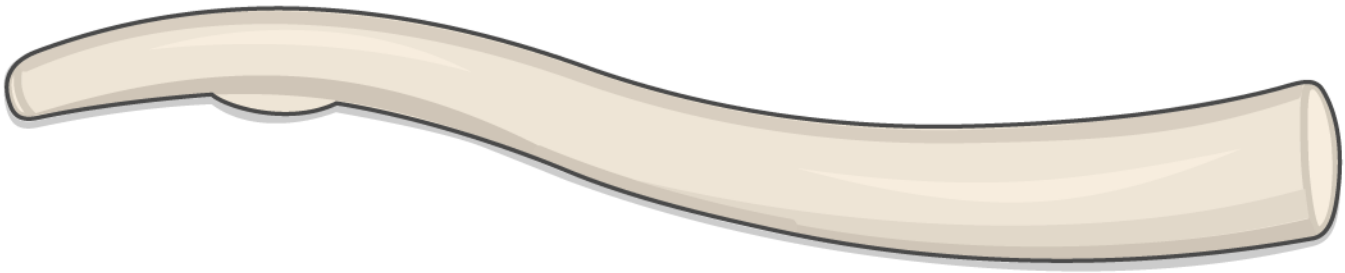
1-it creates a protective space for underlying blood vessels and nerves

2-serves as a site of attachment for the pectoralis major muscle of the chest





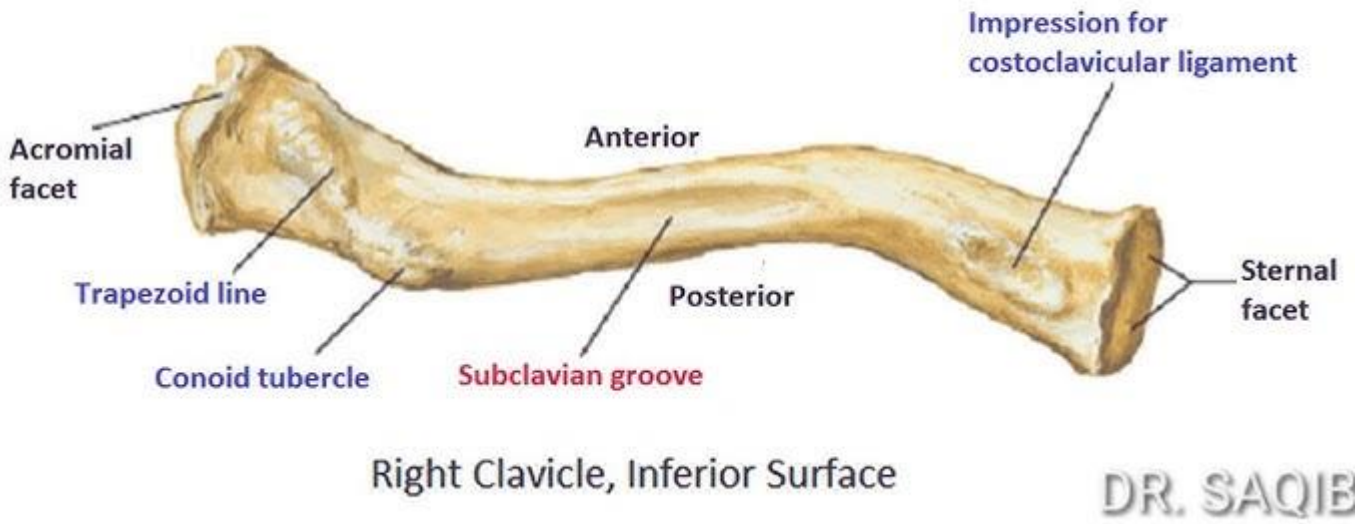
Superior View



Anterior View

Inferior View

# CLAVICLE ANATOMY




## Scapula

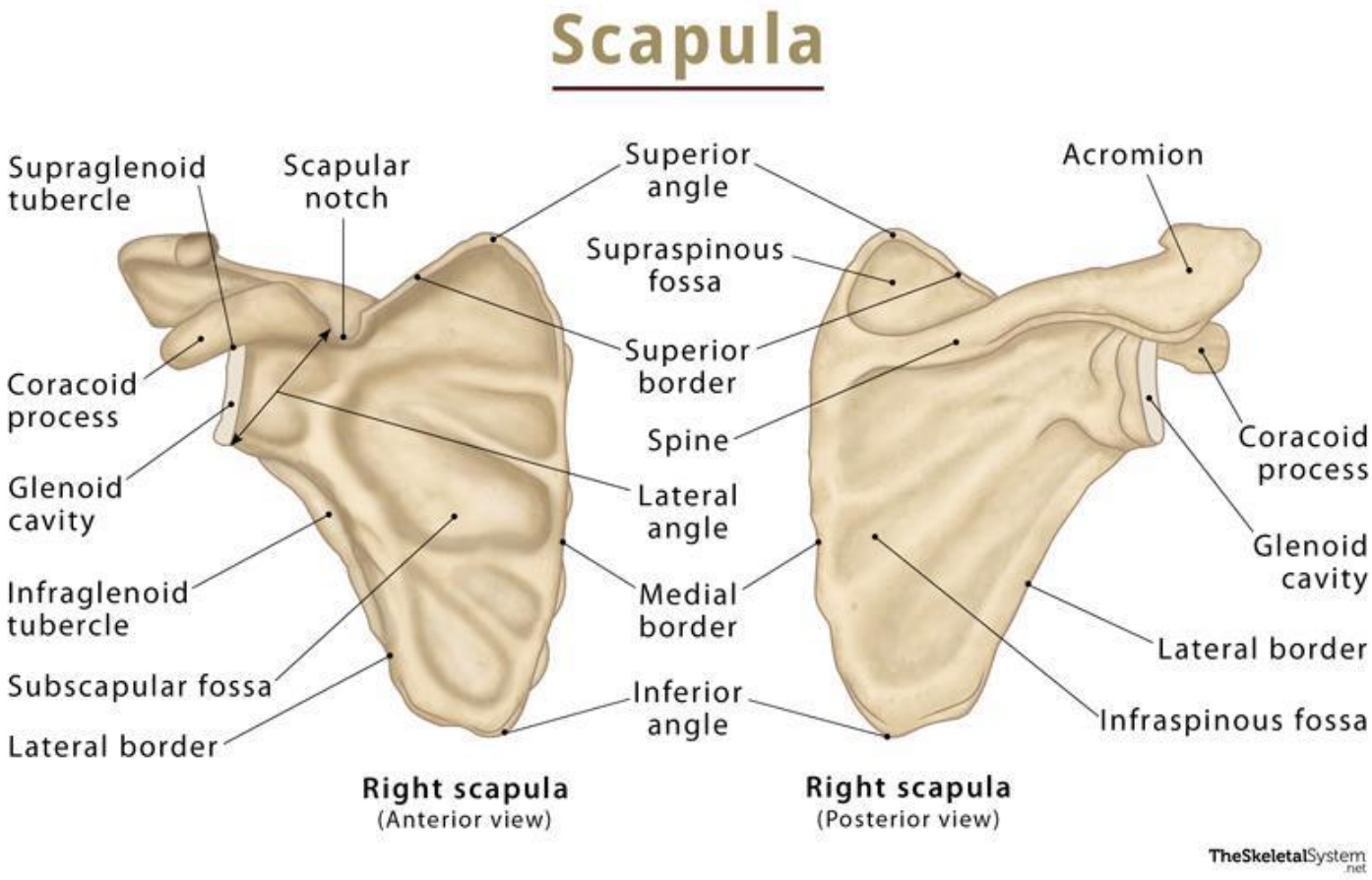
The scapulae are flat triangular bones marked by a ridge that runs across the posterior surface.

The glenoid cavity, a shallow depression at the lateral apex of each scapula, articulates with the head of the humerus (the upper arm bone) to form the shoulder joint.

Overhanging the glenoid cavity is a projection known as the coracoid process.

1- The scapulae function in upper extremity movements, allowing for the full range of motions of the arms.

2- They also serve as protective shields for the posterior side of the lungs and rib cage.




## ***Blood supply to shoulder girdle***

The axillary artery is the major blood vessel in the shoulder, with many of its branches supplying the area.

These branches include

1-the superior thoracic artery

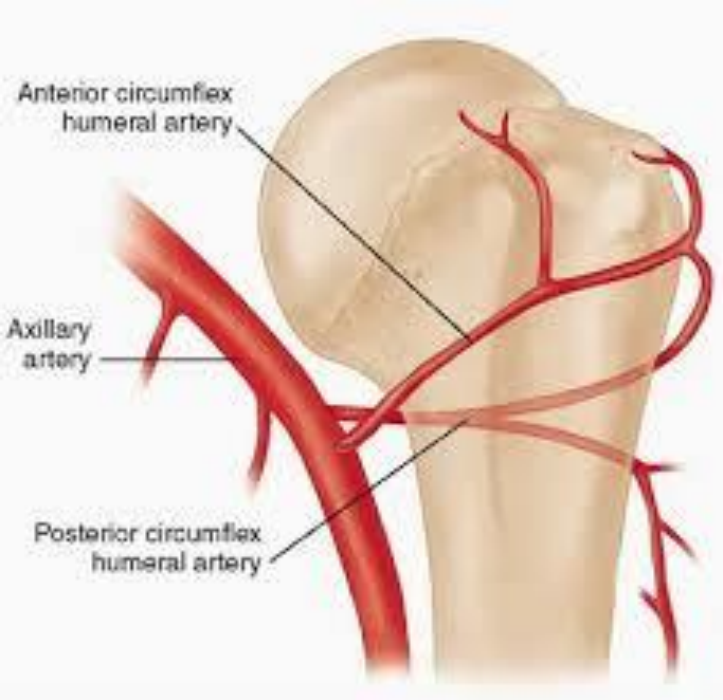
2- thoracoacromial artery

3- lateral thoracic artery

4-subscapular artery

5-anterior humeral circumflex artery

6- posterior humeral circumflex artery.

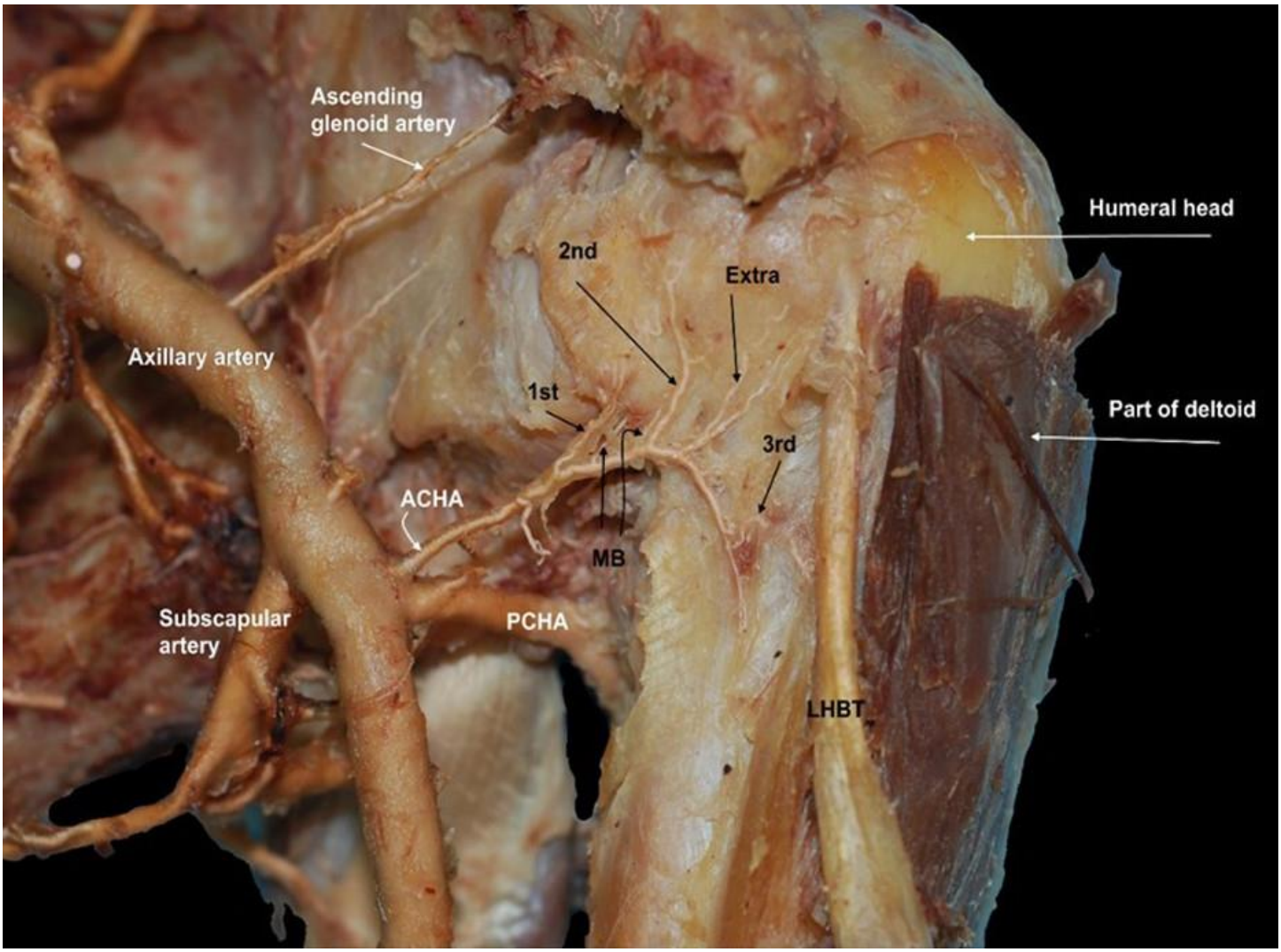


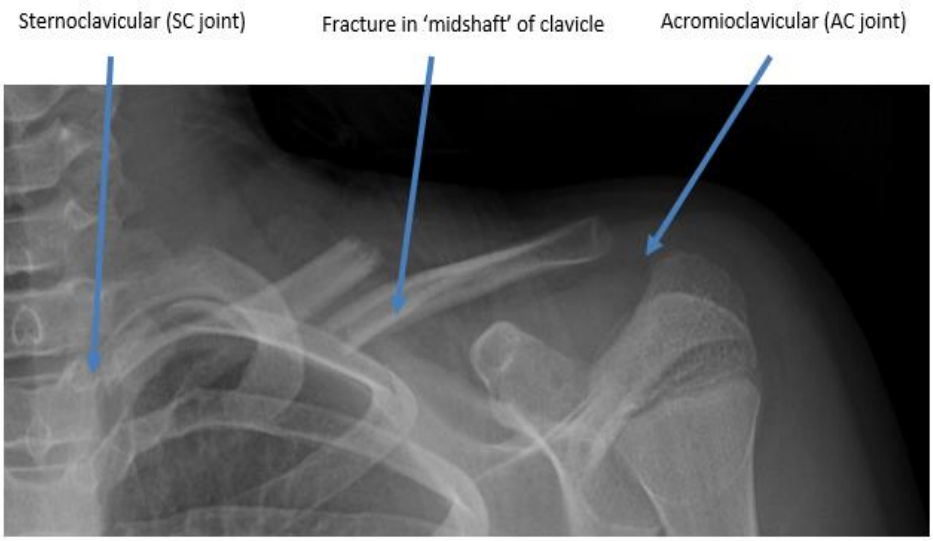

***Nerve supply***

1-suprascapular

2- lateral pectoral

3-axillary nerves


Ascending glenoid artery
Humeral head
2nd
Extra
Axillary artery
1st
Part of deltoid
3rd
ACHA
MB
Subscapular artery
PCHA
LHBT


Sternoclavicular (SC joint)
Fracture in 'midshaft' of clavicle
Acromioclavicular (AC joint)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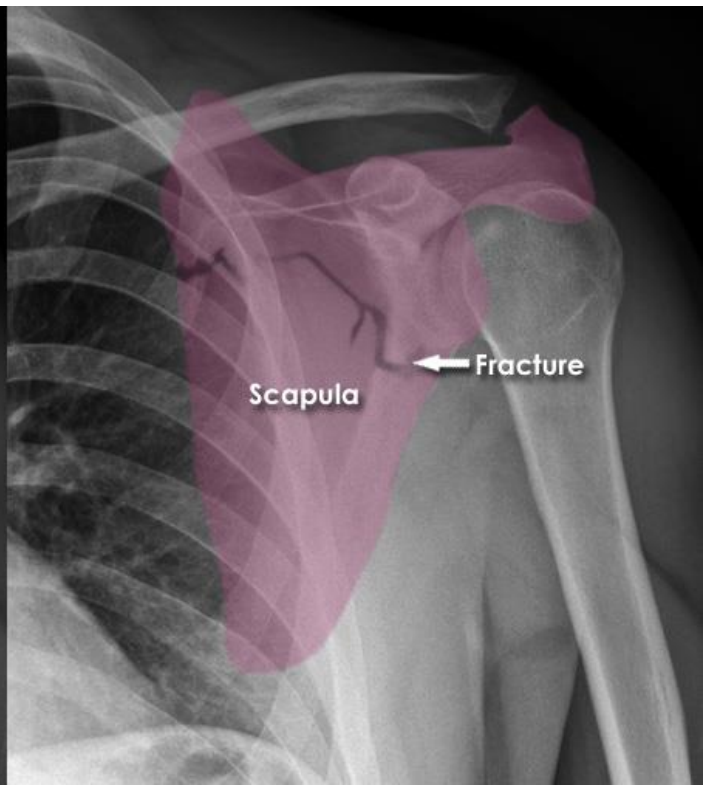
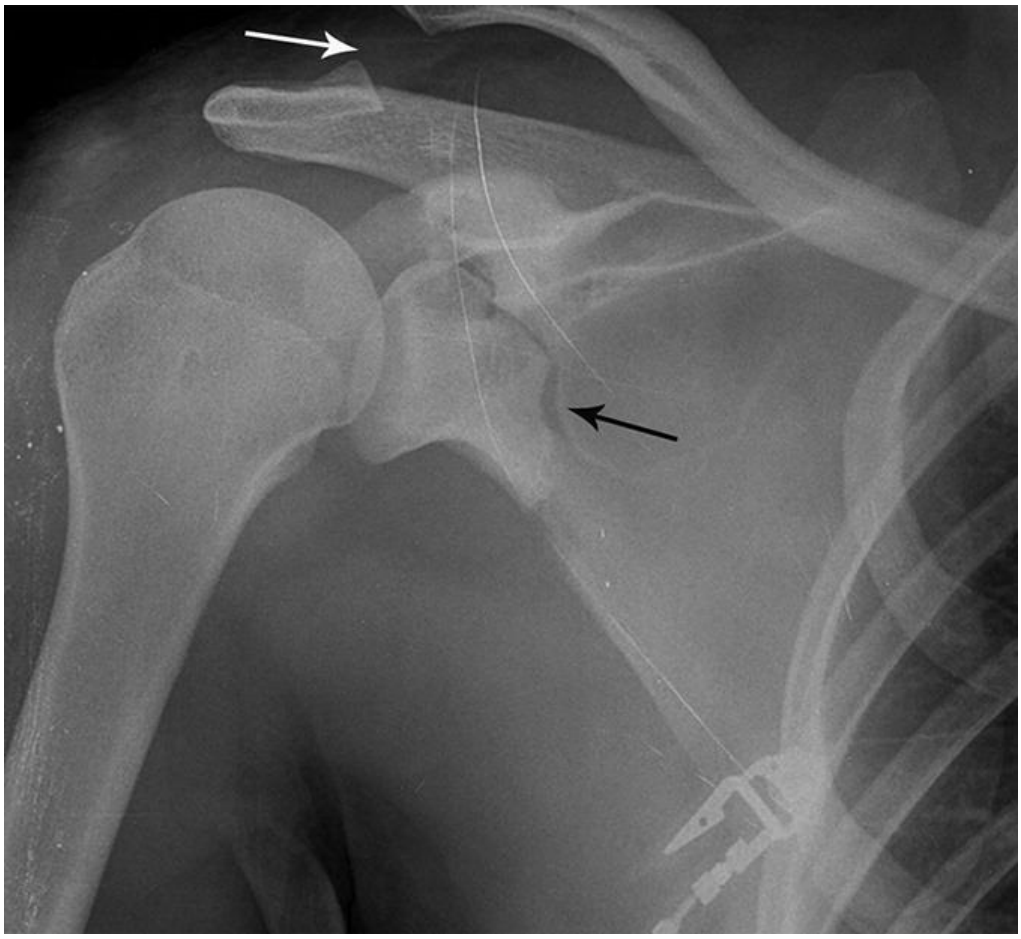

Scapula
Fracture



## Ossification centers of the clavicle

- lateral end: 5 weeks *in utero*
- medial end: 15 years

## Ossification centers of the scapula

- body: 8 weeks *in utero*
- coracoid process (two centers): 12-18 months
- glenoid: 10-11 years
- inferior angle: 14-20 years (puberty)
- acromion (three centers): 14-20 years (puberty)
- medial border: 14-20 years (puberty)



Shoulder Dislocation
(Anterior)
Clavicle
Glenoid
Humeral Head
Humerus
EBM CONSULT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