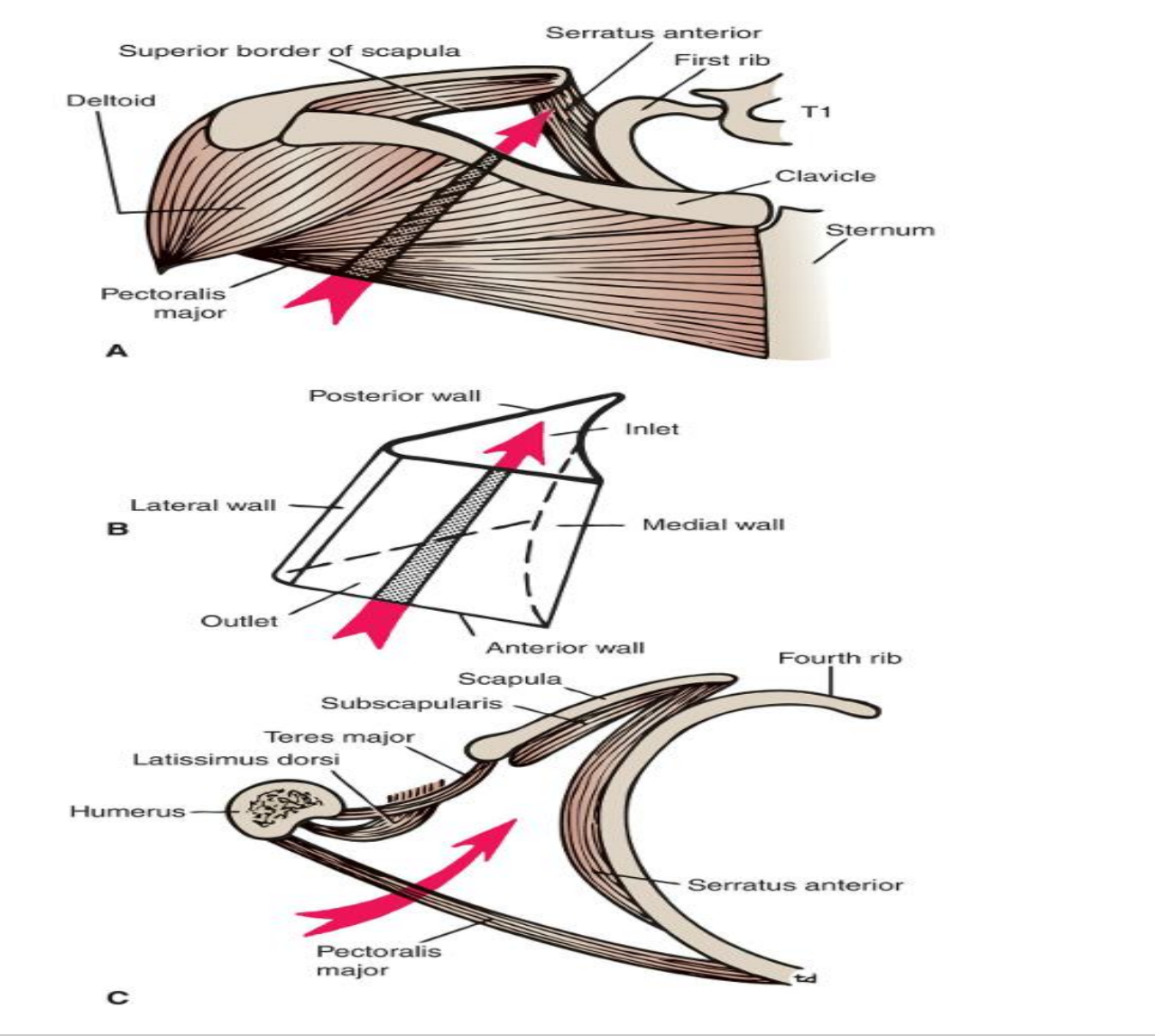
Axilla

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Axilla

The axilla, or armpit, is a pyramid-shaped space between the upper part of the arm and the side of the chest



What the functional foundation of axilla

It forms an important passage for nerves, blood vessels, and lymph channels as they travel between the root of the neck to the upper limb. The upper end of the axilla,

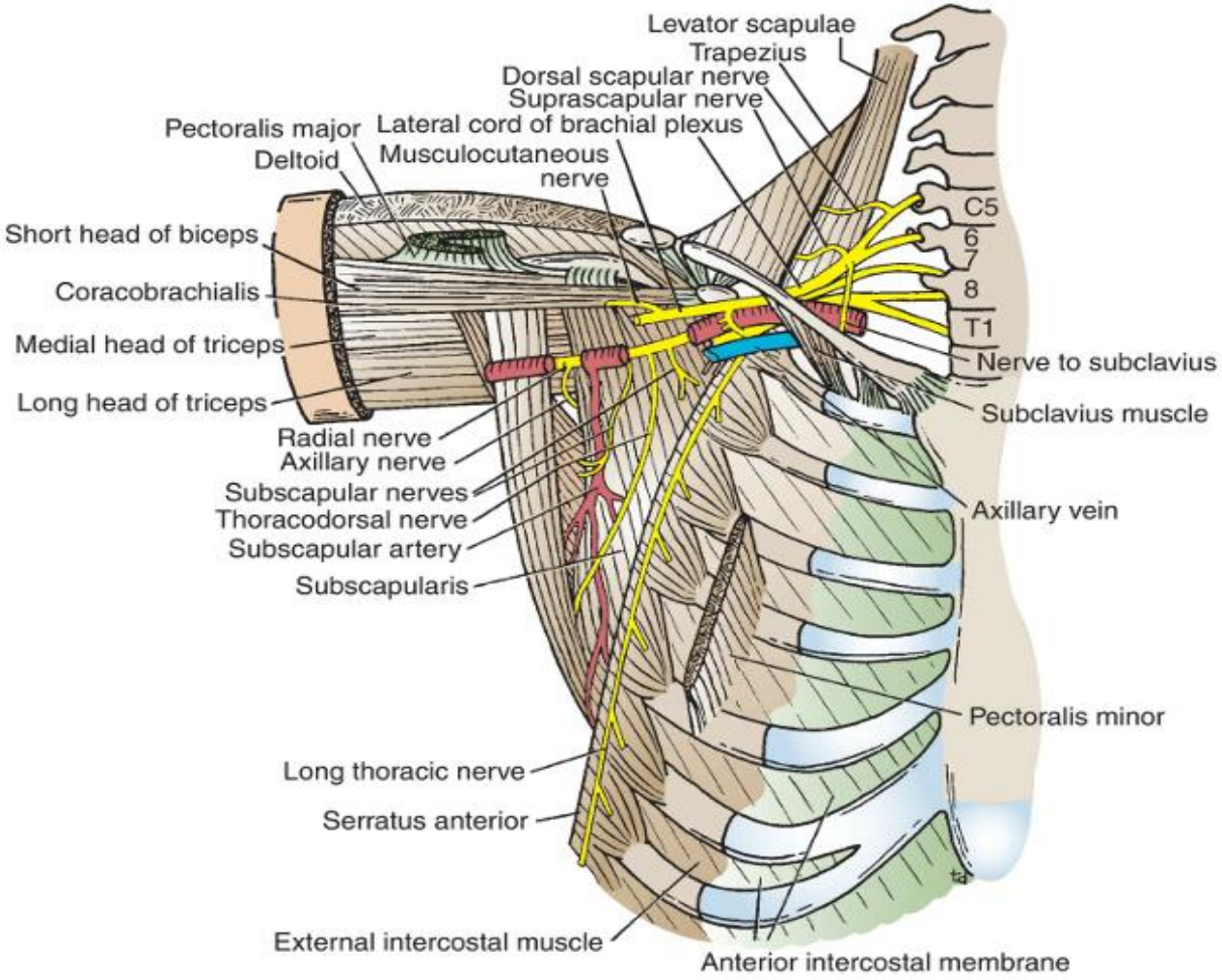
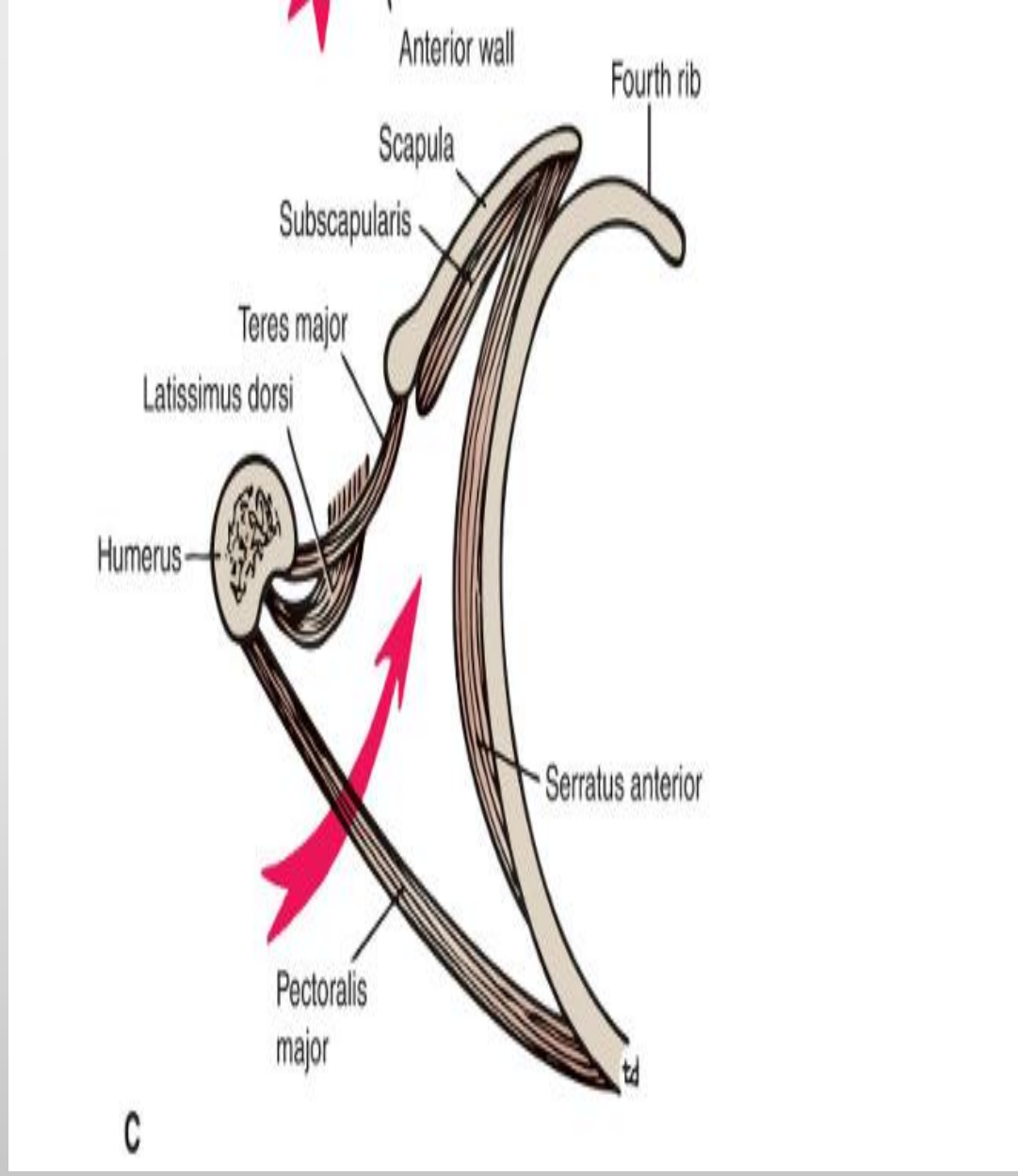


Figure 3.13 Pectoral region and axilla; the pectoralis major and minor muscles and the clavipectoral fascia have been removed to display the underlying structures.

What are the bounders of axilla

The upper end of the axilla, or apex, is directed into the root of the neck and is bounded in front by the clavicle, behind by the upper border of the scapula,

and medially by the outer border of the first rib. The lower end, or base, is bounded in front by the anterior axillary fold (formed by the lower border of the pectoralis major muscle), behind by the posterior axillary fold (formed by the tendons of the latissimus dorsi and teres major muscles), and medially by the chest wall.



Axillary Walls

The four walls of the axilla are constructed as follows

Anterior wall: By the pectoralis major, subclavius, and pectoralis minor muscles

Posterior wall: By the subscapularis, latissimus dorsi, and teres major muscles

Medial wall: By the upper four or five ribs and the intercostal spaces covered by the serratus anterior muscle

Lateral wall: By the coracobrachialis and biceps brachii muscles in the bicipital groove of the humerus

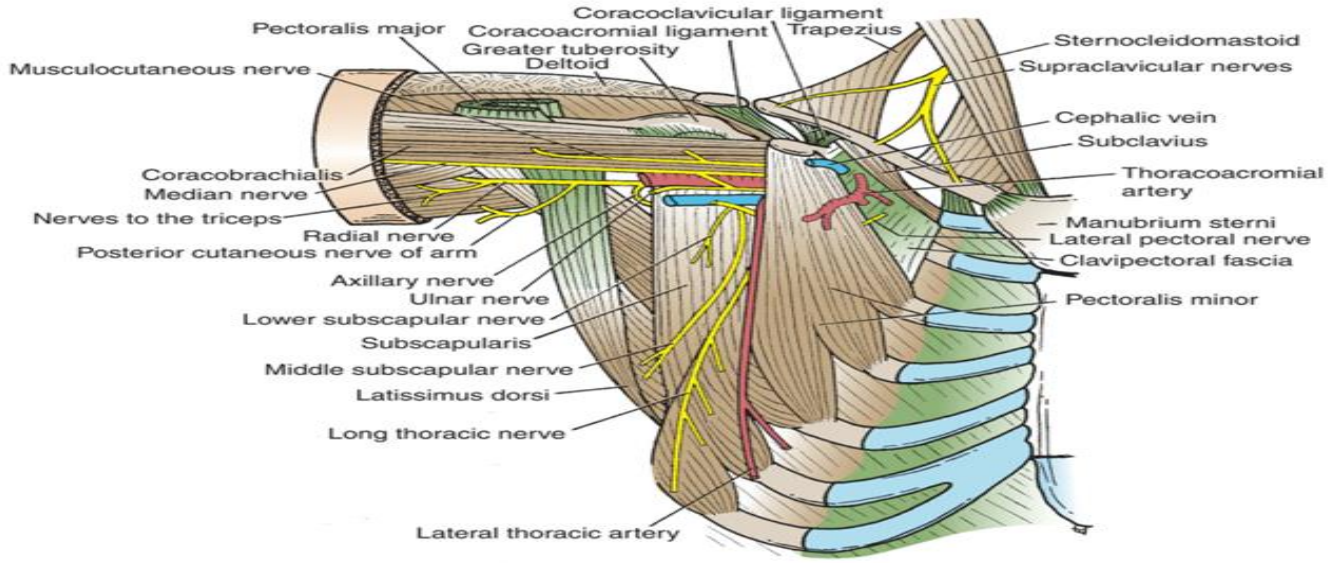


Figure 3.12 Pectoral region and axilla; the pectoralis major muscle has been removed to display the underlying structures.

The axilla contains

- The axilla contains the axillary artery and its branches, which supply blood to the upper limb; the axillary vein and its tributaries, which drain blood from the upper limb; and lymph vessels and lymph
- nodes, which drain lymph from the upper limb, the breast, and the skin of the trunk as far down as the level of the umbilicus. The brachial plexus, an important nerve network that innervates the upper limb, lies among these structures. The contents of the axilla are embedded in fat.

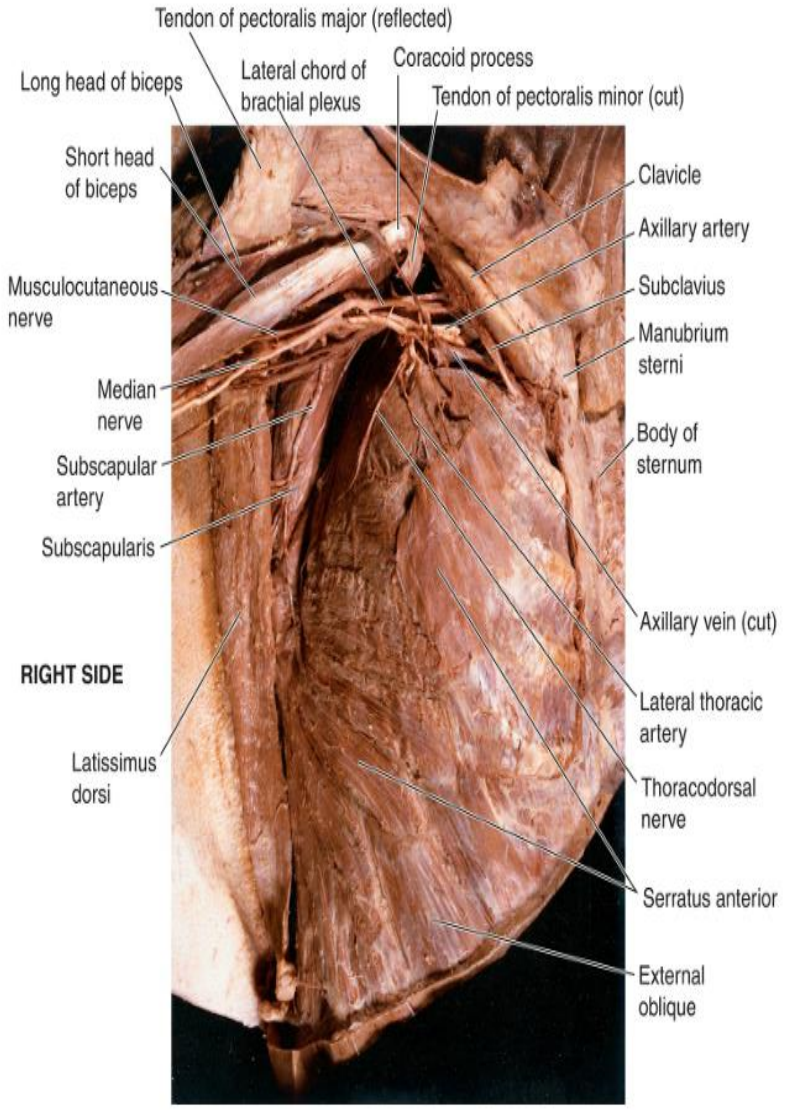
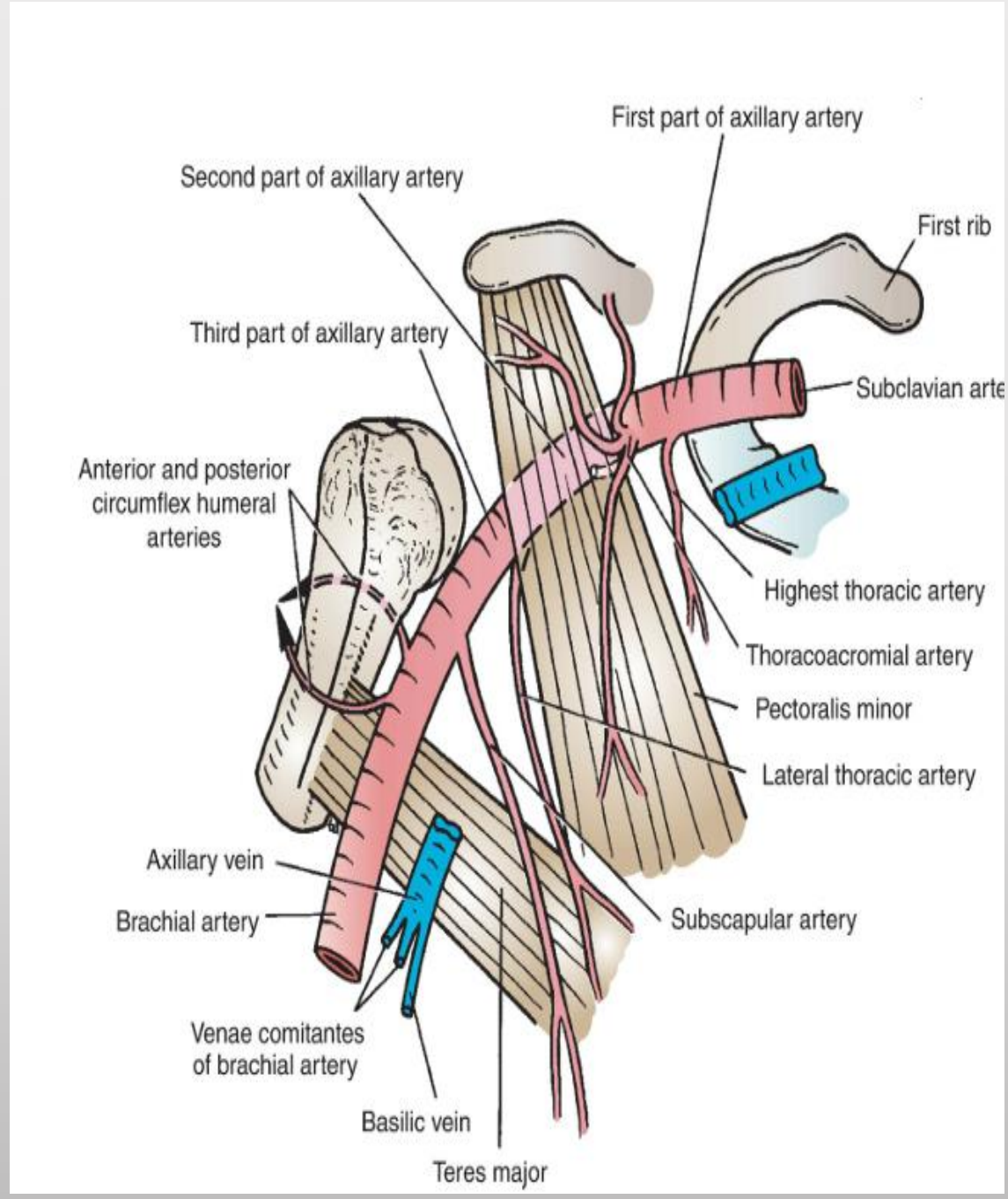


Figure 3.23 Dissection of the right axilla. The pectoralis major and

Axillary Artery

The axillary artery (begins at the lateral border of the first rib and ends at the lower border of the teres major muscle, where it continues as the brachial artery Throughout its course, the artery is closely related to the cords of the brachial plexus and their branches and is enclosed with them in a connective tissue sheath called the axillary sheath. This sheath is continuous with the prevertebral fascia in the root of the neck. The pectoralis minor muscle crosses in front of the axillary artery and divides it into three parts



Pectoralis Minor

- The pectoralis minor is a thin triangular muscle that lies deep to the pectoralis major . It arises from the third, fourth, and fifth ribs and runs upward and laterally to insert into the coracoid process of the scapula. Thus, it crosses the axilla and divides the area into three subregions (proximal, deep, and distal to the muscle) that are useful in describing the course of the axillary artery and the lymph drainage of the area (see the descriptions of the axillary artery and lymph drainage below)

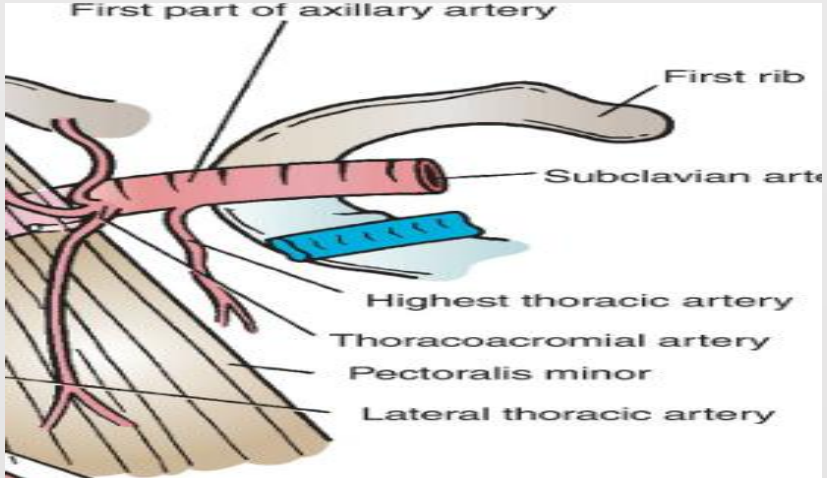
First Part of Axillary Artery

This extends from the lateral border of the first rib to the upper border of the pectoralis minor

Relations Anteriorly: Pectoralis major and the skin; cephalic vein crosses the artery

Posteriorly: Long thoracic nerve (nerve to the serratus anterior;

Laterally: Three cords of the brachial plexus) Medially: Axillary vein



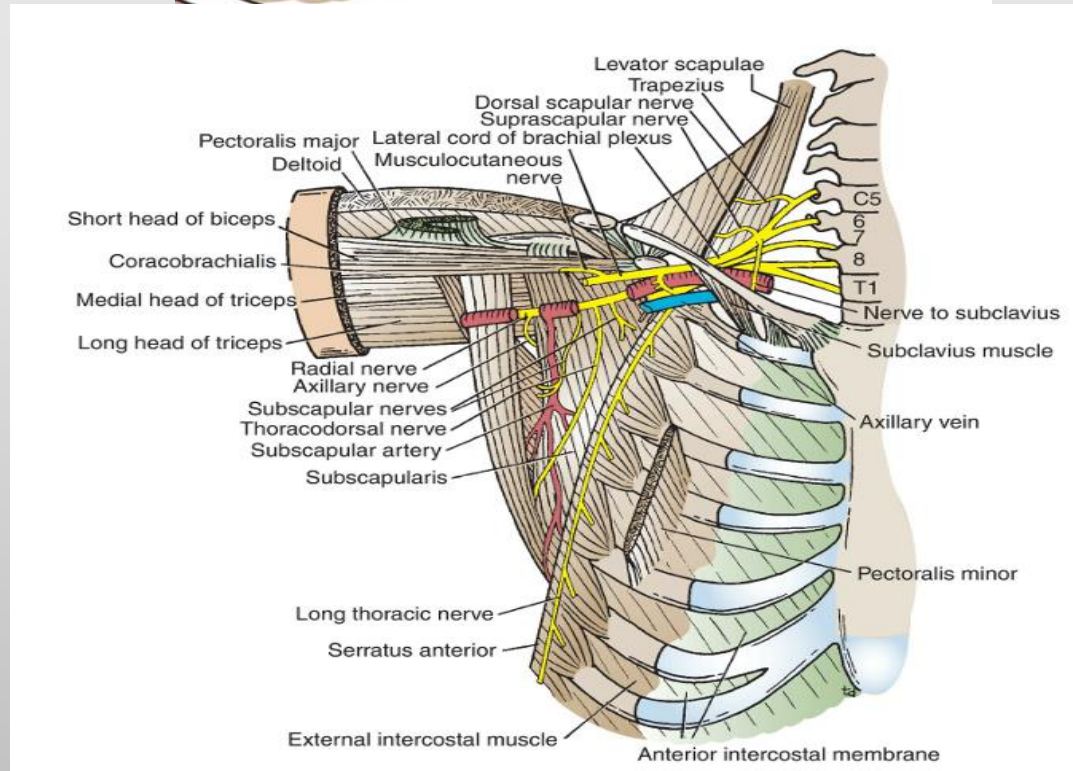
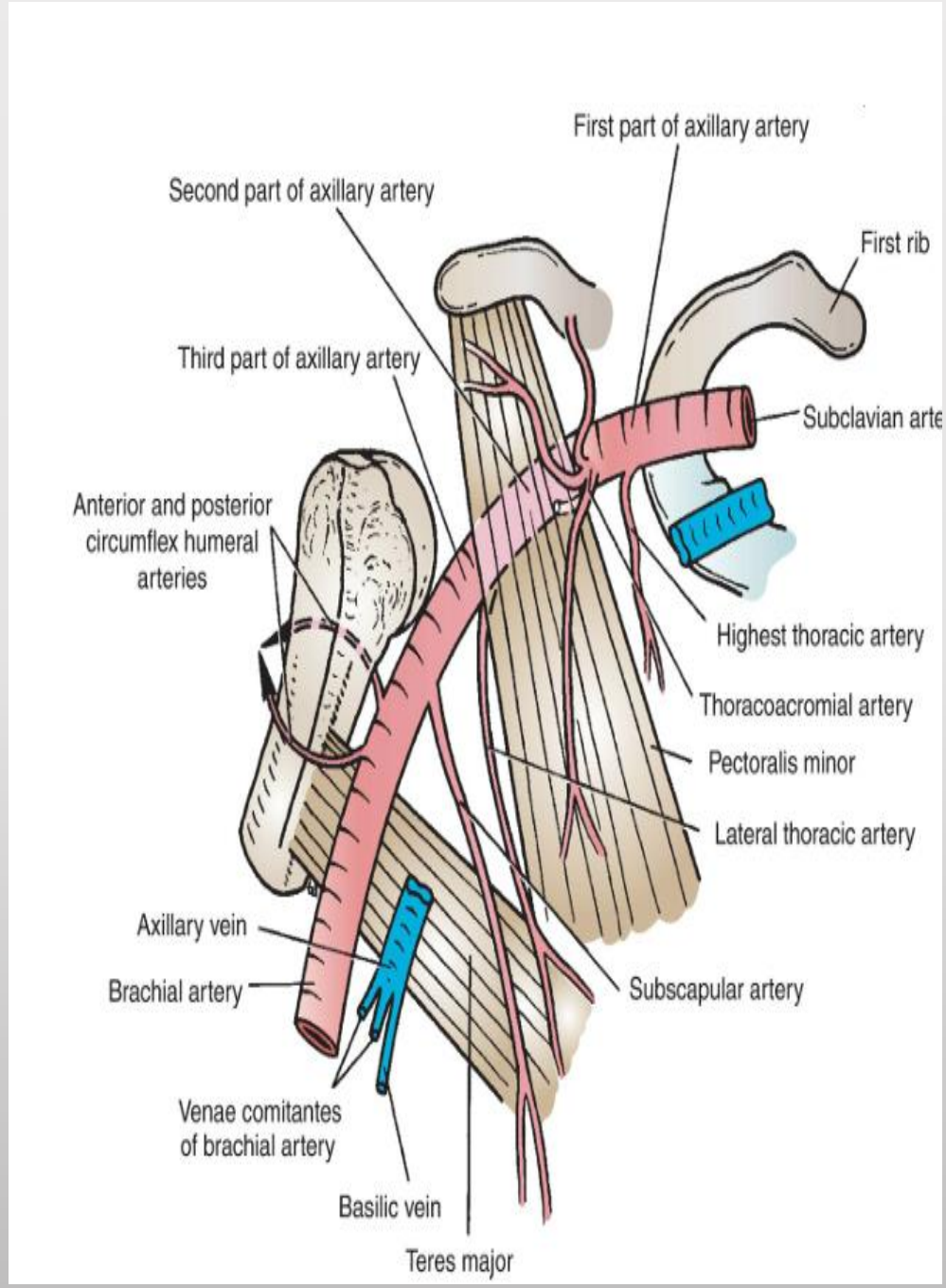


Figure 3.13 Pectoral region and axilla; the pectoralis major and minor muscles and the clavipectoral fascia have been removed to display the underlying structures.

Second Part of Axillary Artery

second Part of Axillary Artery This lies deep to the pectoralis minor muscle Relations Anteriorly: Pectoralis minor, pectoralis major, and the skin (see Posteriorly: Posterior cord of the brachial plexus, the subscapularis muscle, and the shoulder joint

Laterally: Lateral cord of the brachial : Medial cord of the brachial plexus and the axillary vein



Third Part of Axillary Artery

This extends from the lower border of the pectoralis minor to the lower border of the teres major

Relations

Anteriorly: Pectoralis major for a short distance; more distally, the medial root of the median nerve crosses the artery

Posteriorly: Subscapularis, latissimus dorsi, and teres major; axillary and radial nerves also lie behind the artery

Laterally: Coracobrachialis, biceps, and humerus; lateral root of the median nerve and the musculocutaneous nerve also lie on the lateral side

Medially: Ulnar nerve, axillary vein, and medial cutaneous nerve of the arm

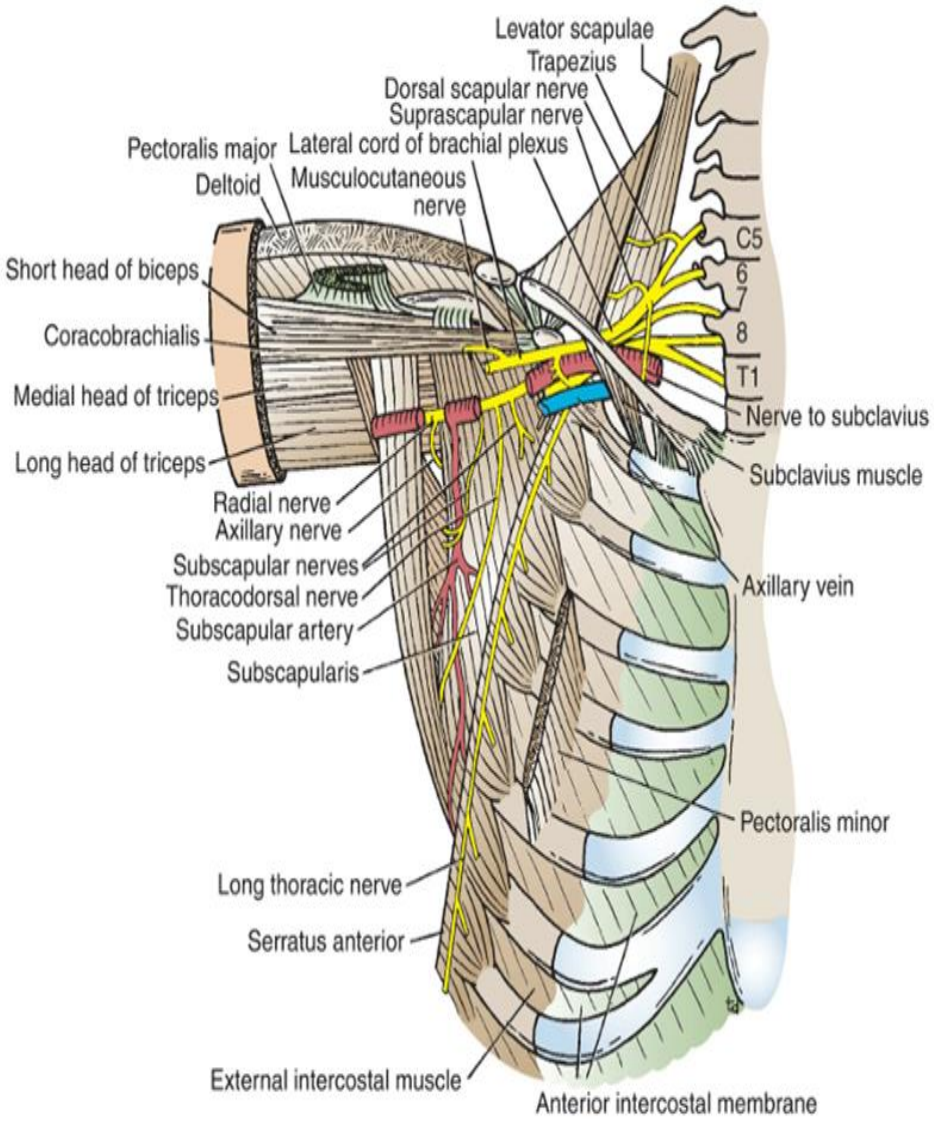
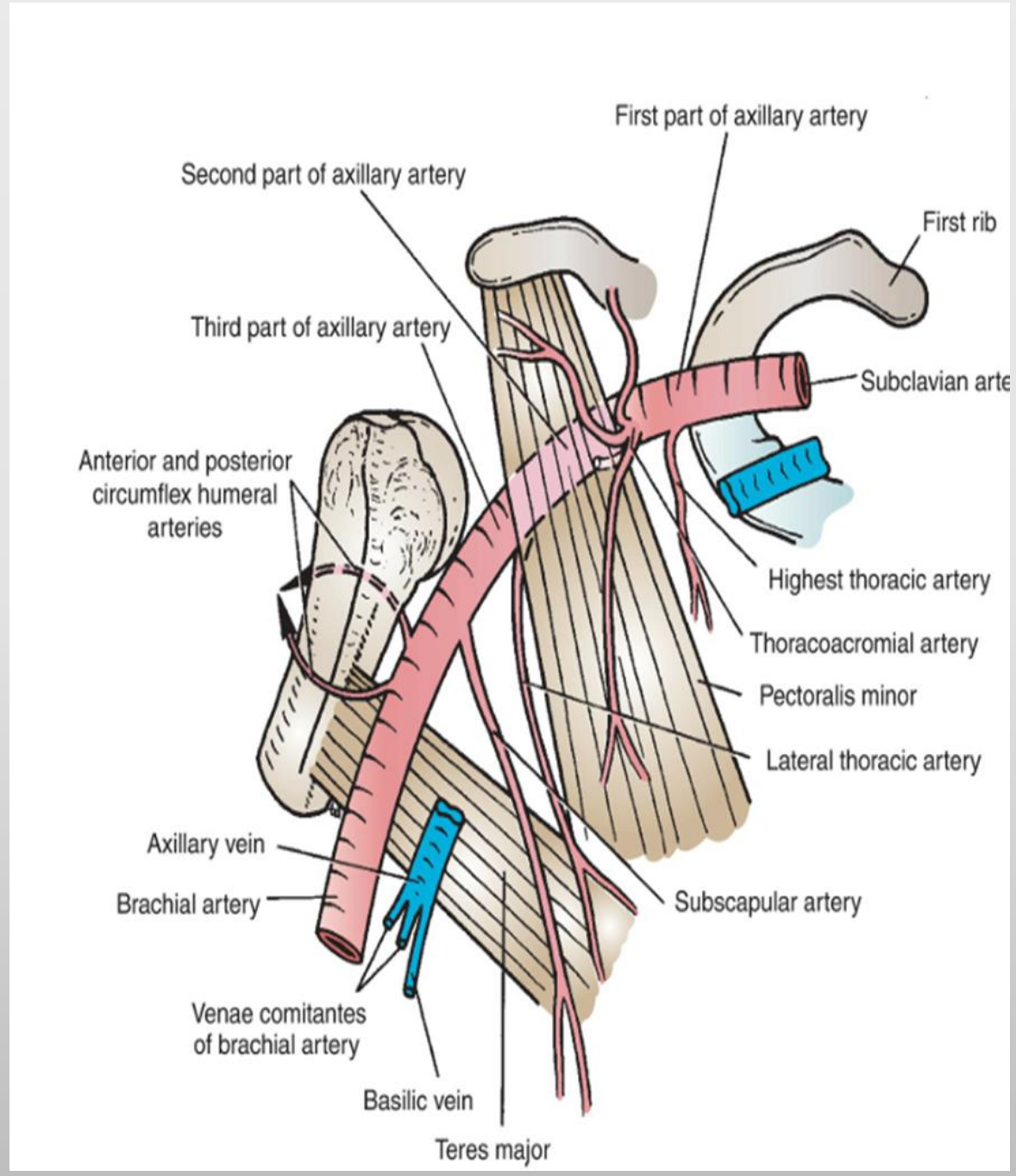


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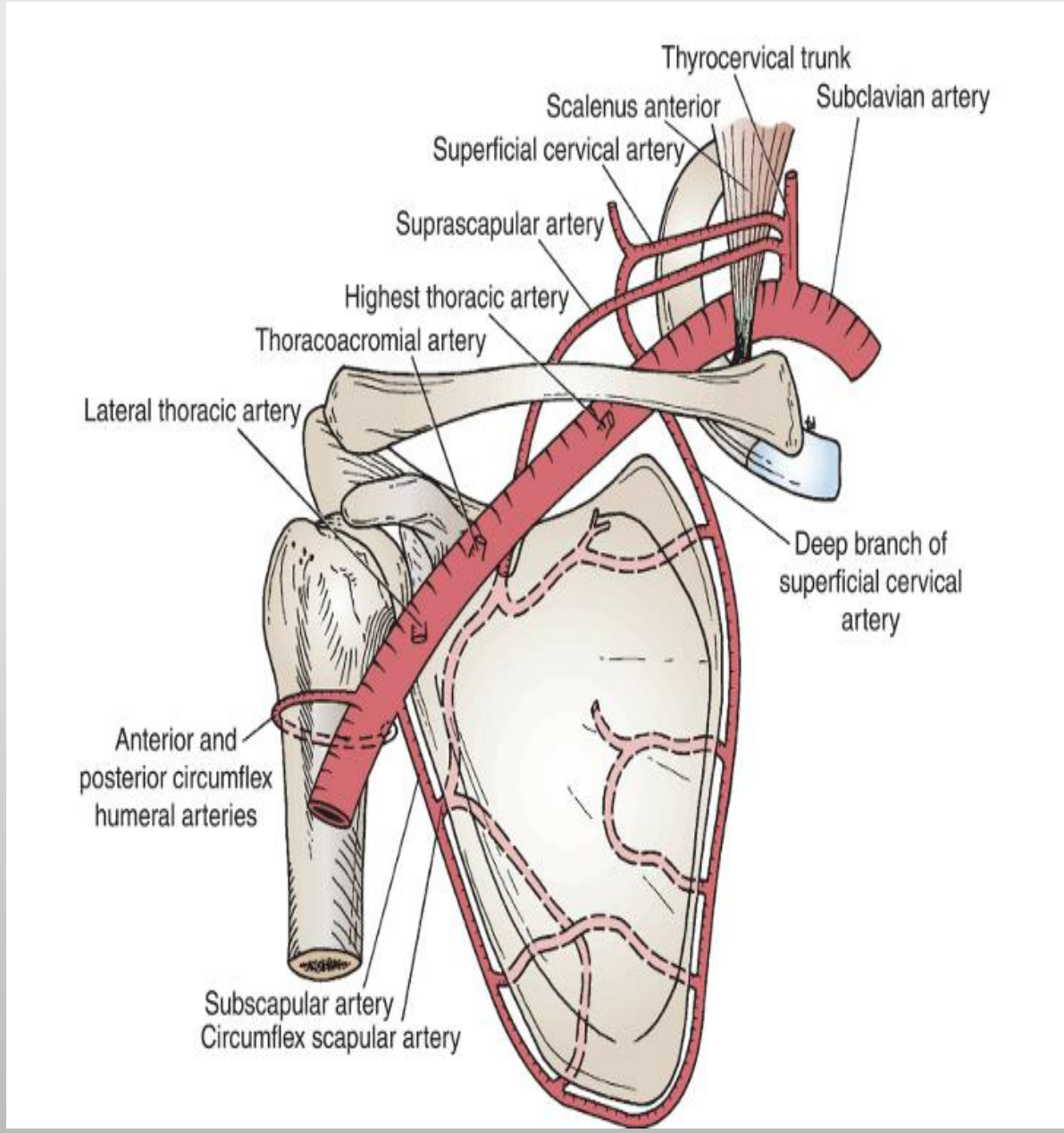
Axillar Artery Branches

Typically, the axillary artery has six branches Conveniently for memory, one branch comes from the first part of the artery, two branches from the second part, and three branches from the third part. However, the branching pattern is subject to much variation, and recognizing the target territories of the branches in order to verify the identities of the branches is Important

Branch from First Part The highest thoracic artery is small and extremely variable. It runs along the upper border of the pectoralis minor to reach the area of the first two ribs. Branches from Second Part The thoracoacromial artery is a short trunk that immediately divides into four terminal branches that supply the pectoral muscles and the acromioclavicular region. The lateral thoracic artery runs along the lower (lateral) border of the pectoralis minor along the lateral chest wall



Branches from Third Part The subscapular artery is a large vessel that descends along the lower (axillary) border of the scapula. It divides into the circumflex scapular and thoracodorsal arteries. The circumflex scapular artery curls around the axillary border of the scapula to reach the infraspinous fossa . The thoracodorsal artery descends along the latissimus dorsi muscle to reach the lateral thoracic wall. The anterior and posterior circumflex humeral arteries wind around the front and the back of the surgical neck of the humerus, respectively, and form an anastomosing circle. The posterior artery is the larger of the two and passes through the quadrangular space with the axillary nerve to reach the scapular region .



Arterial Anastomosis around Shoulder Joint The extreme mobility of the shoulder joint may result in kinking of the axillary artery and a temporary occlusion of its lumen. To compensate for this, an important arterial anastomosis exists between the branches of the subclavian artery and the axillary artery, thus ensuring that an adequate blood flow takes place into the upper limb irrespective of the position of the arm

Branches from Subclavian Artery The suprascapular artery is distributed to the supraspinous and infraspinous fossae of the scapula. The superficial cervical artery gives off a deep branch that runs down the medial border of the scapula. Branches from Axillary Artery The subscapular artery and its circumflex scapular branch supply the subscapular and infraspinous fossae of the scapula, respectively. Anterior circumflex humeral artery. Posterior circumflex humeral artery.

