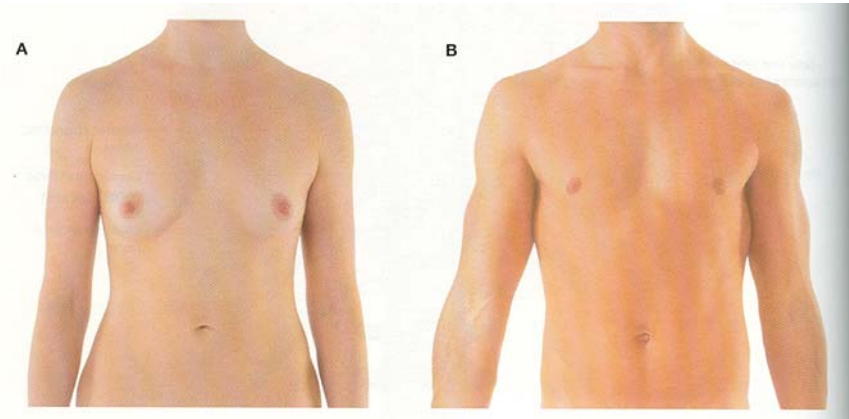


# BREAST/ MAMMARY GLAND

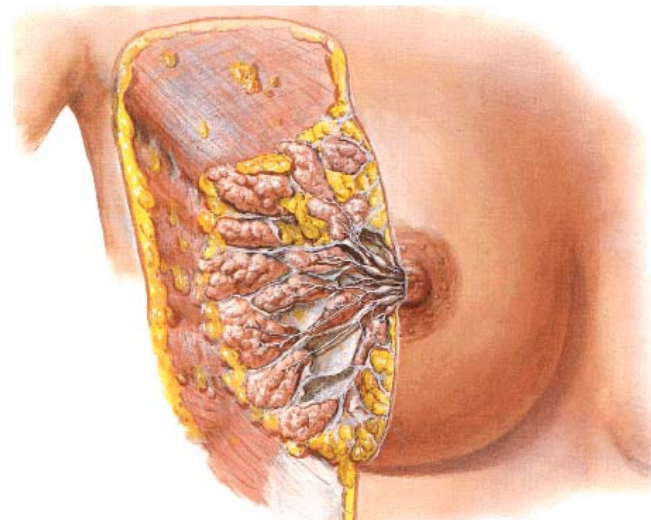
- Modified sweat gland
- Accessory organ of reproductive system
- Well developed after puberty in female
- Provides milk to the newborn

## SITUATION

- Superficial
- Auxiliary tail ( of spence ) in Axilla

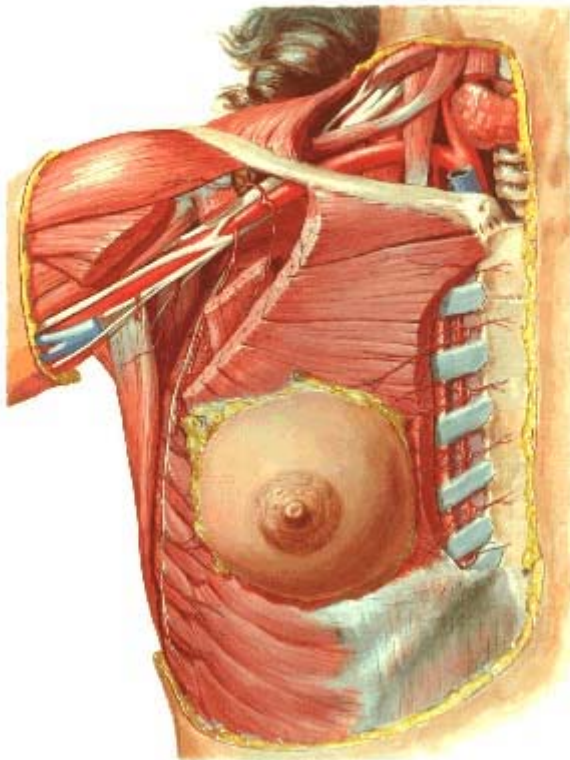


Mammary Gland  
Anterolateral Dissection

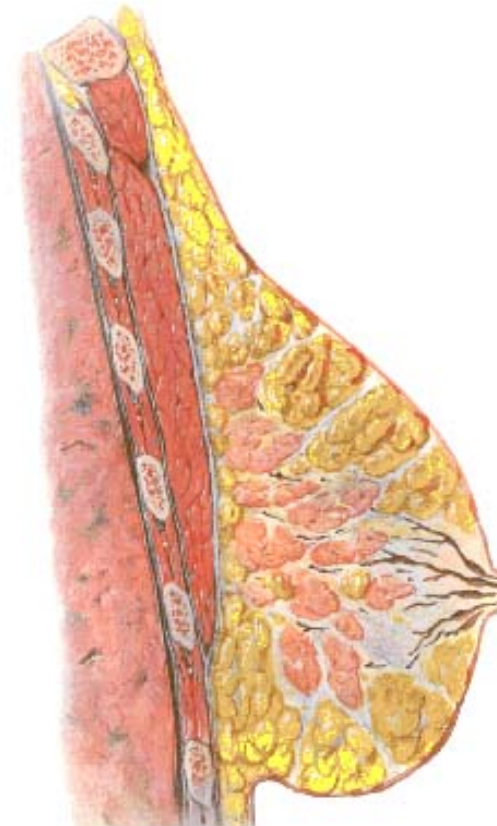


# EXTENT

- Vertical : 2nd -6th rib
- Horizontal : Lateral Border of sternum – Mid axillary line



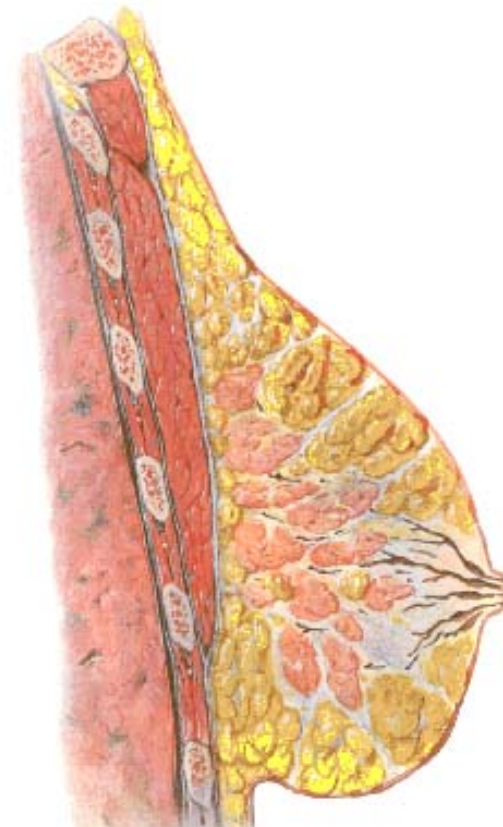
**Mammary Gland**  
Sagittal Section



# DEEP RELATIONS

Mammary Gland  
Sagittal Section

- Retro mammary space
- Pectoral fascia
- Pectoralis major, Serratus anterior, External oblique abdominis
- Clavipectoral fascia, Pectoralis minor
- 2<sup>nd</sup> – 6<sup>th</sup> rib & 2<sup>nd</sup> – 5<sup>th</sup> intercostal space with its contents



# STRUCTURE OF BREAST

- **SKIN**

Nipple & Areola (no hair & fat)

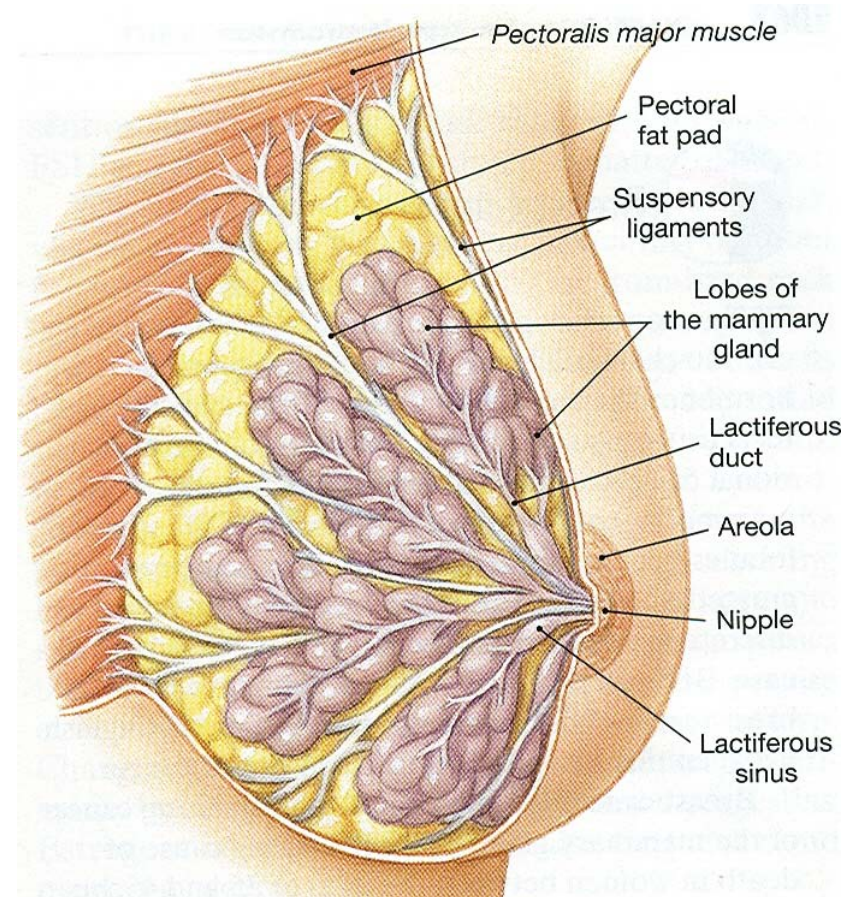
- **PARENCHYMA(15-20 lobes)**

lactiferous duct- l.sinus  
–alveolus

- **STROMA**

Fibrous (suspensory ligament)

Fat

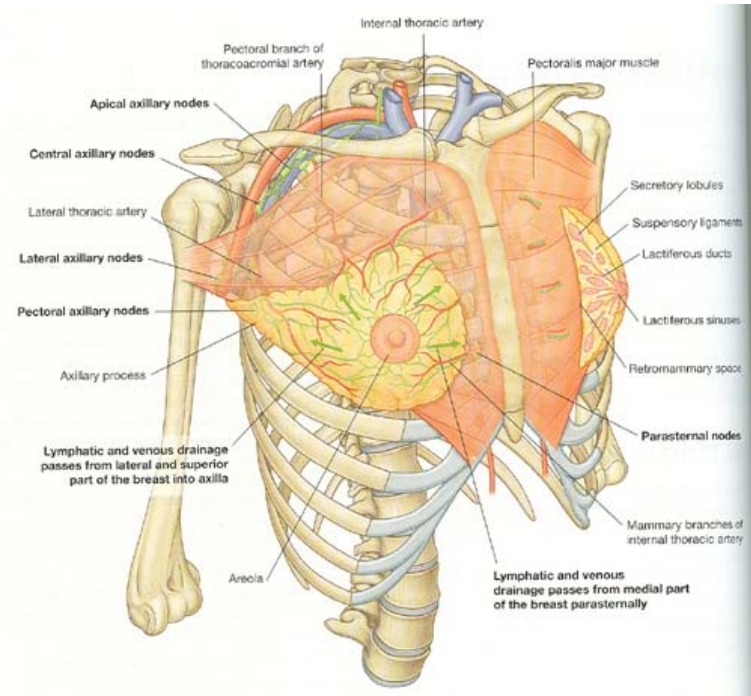




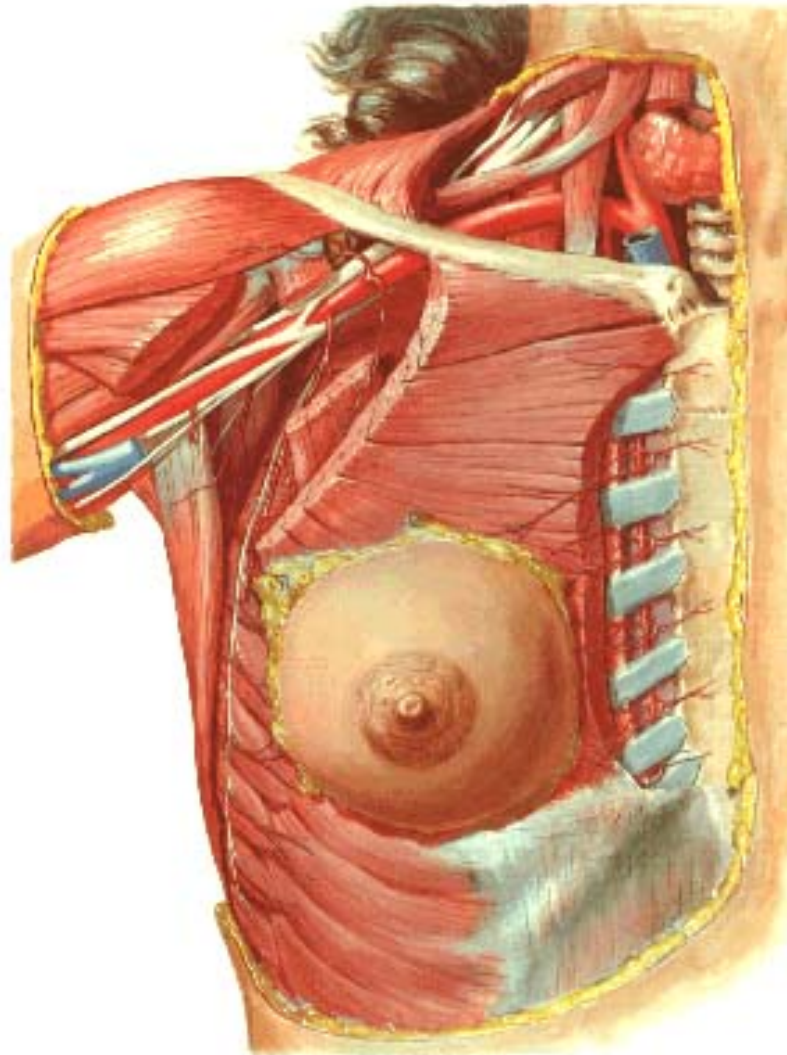
# BLOOD SUPPLY

## Arterial: supply from anterior Surface (posterior- Avascular)

- Perforating Branches of internal thoracic artery
- Branches of lat. Thoracic, superior thoracic, acromio thoracic(thoraco acromial)
- Lat. Branches of posterior intercostal artery



## Arteries of Mammary Gland



# VENOUS DRAINAGE

- Follows the arteries
- Converge towards the base of the nipple & forms an anastomotic v. circle
- Venous circle            S/F
- Internal thoracic, lower part of neck  
Deep-
- Internal thoracic, axillary, posterior intercostal

# Nerve supply

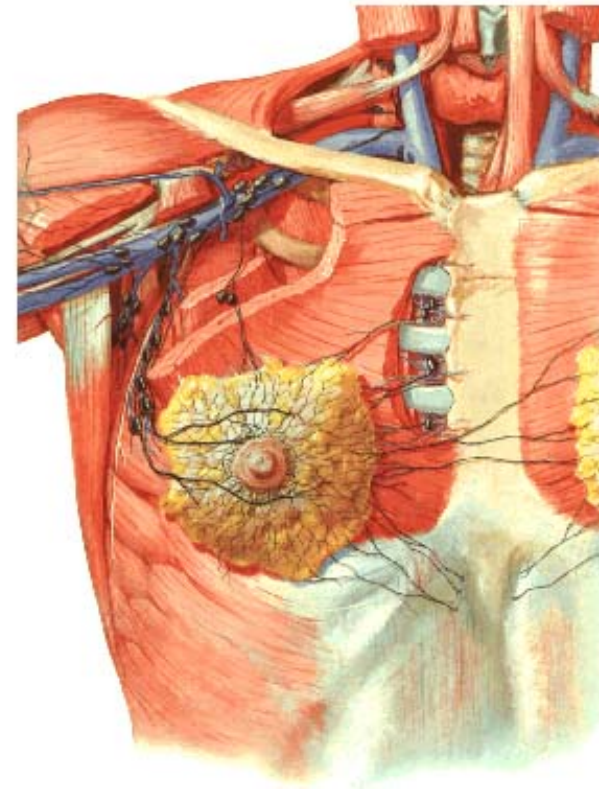
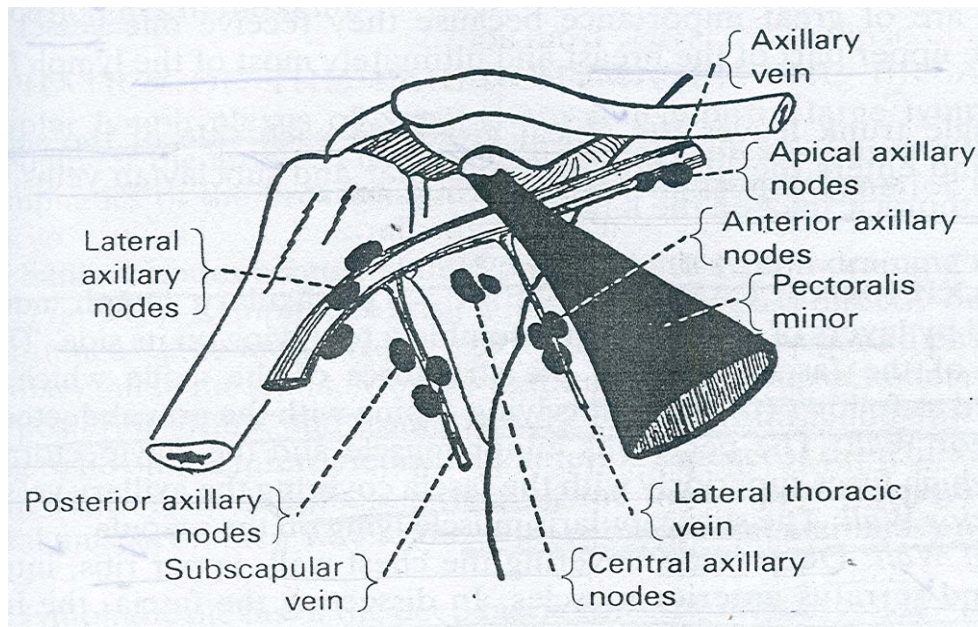
- Anterior & lateral cutaneous branches of 4<sup>th</sup> to 6<sup>th</sup> intercostal nerves
- Milk secretion is controlled by prolactin



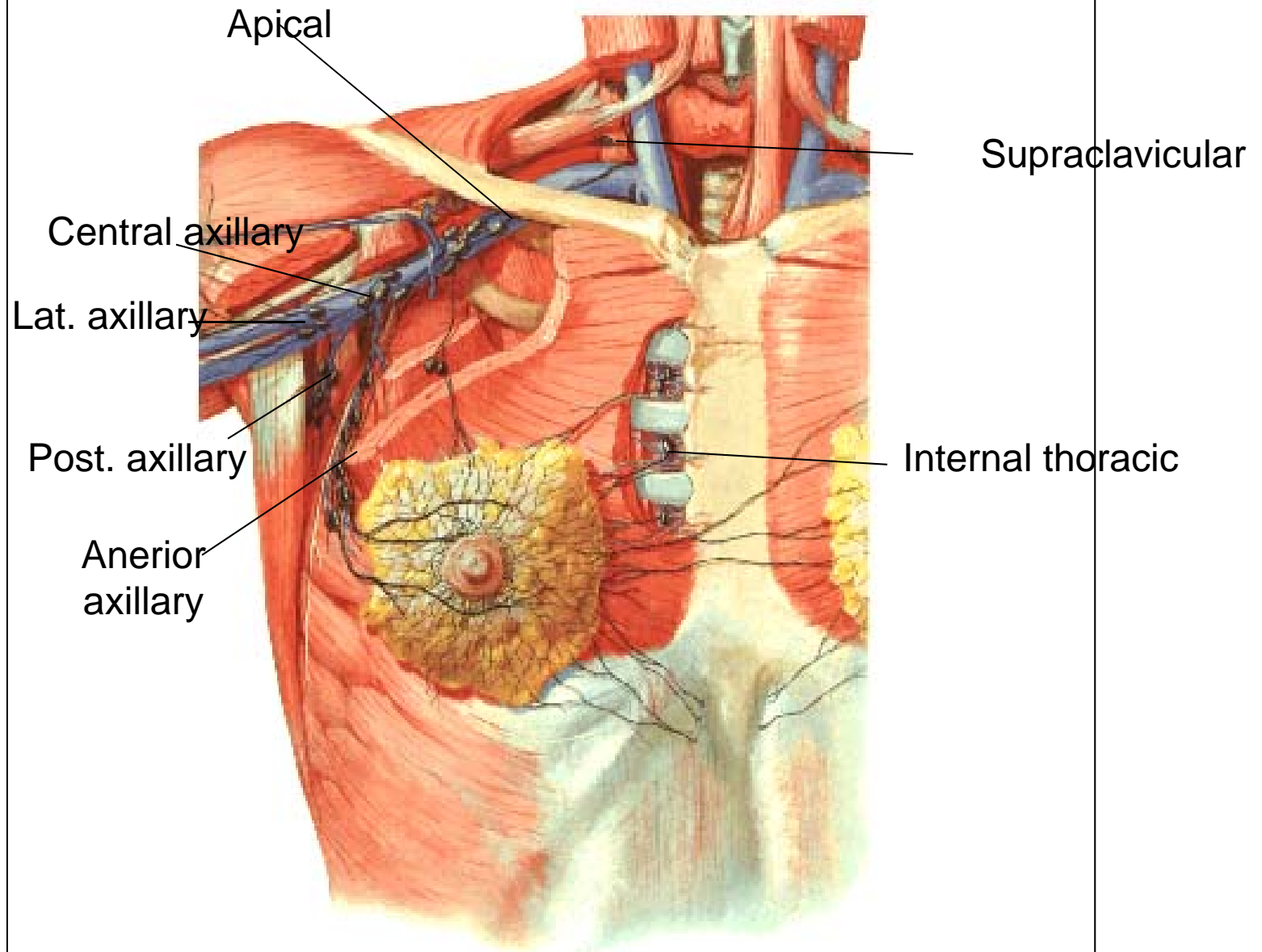
# Lymph vessels & nodes

## Lymph Vessels and Nodes of Mammary Gland

- Superficial lymphatics-  
skin except nipple &  
areola
- Deep lymphatics-  
Parenchyma, nipple &  
areola



## Lymph Vessels and Nodes of Mammary Gland

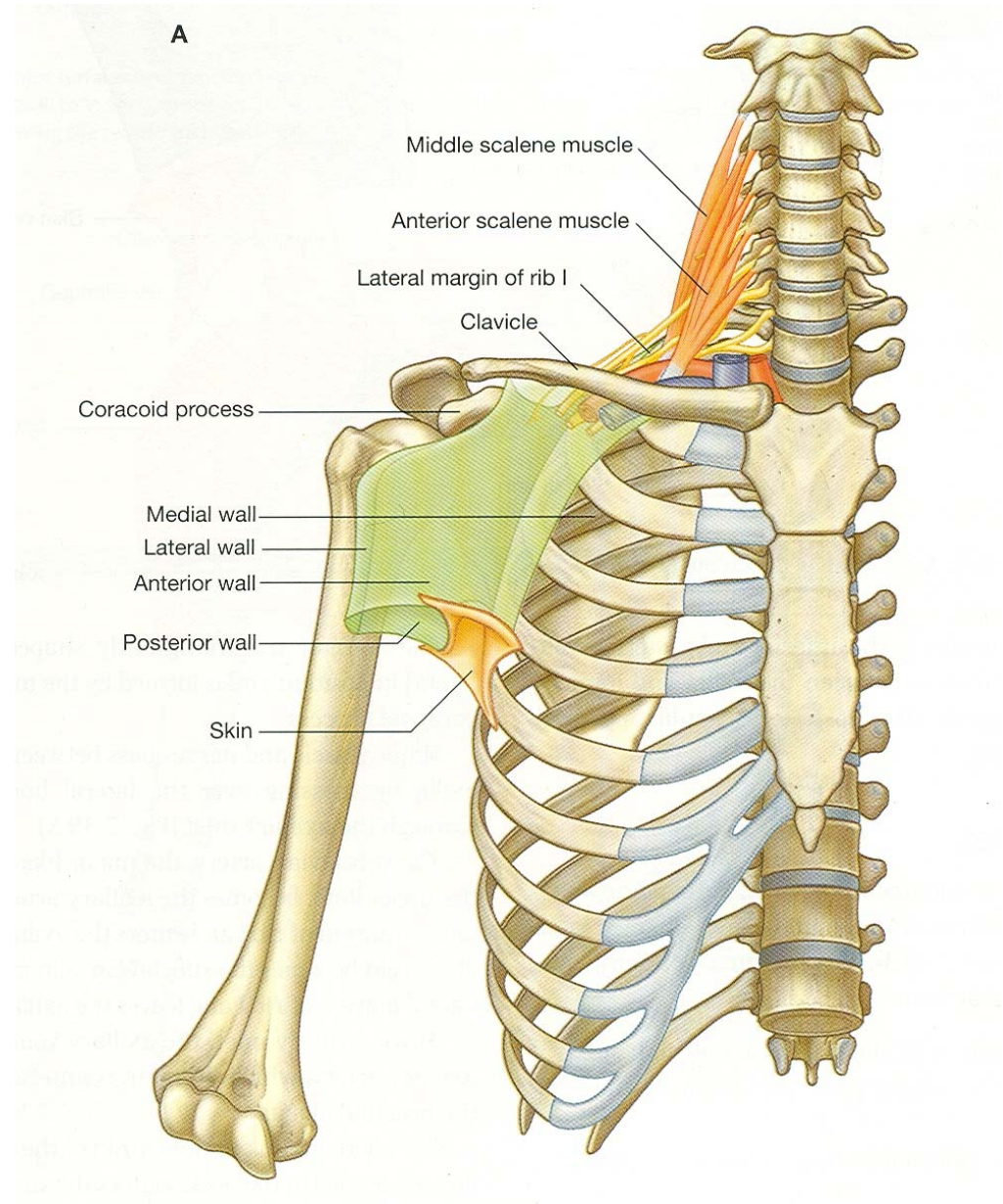


# Applied anatomy

- Carcinoma-
  - Puckering of skin
  - Peau d' orange
  - Bilateral spread
  - Dropping into the pelvis
- Abscess- radial incision

# Axilla

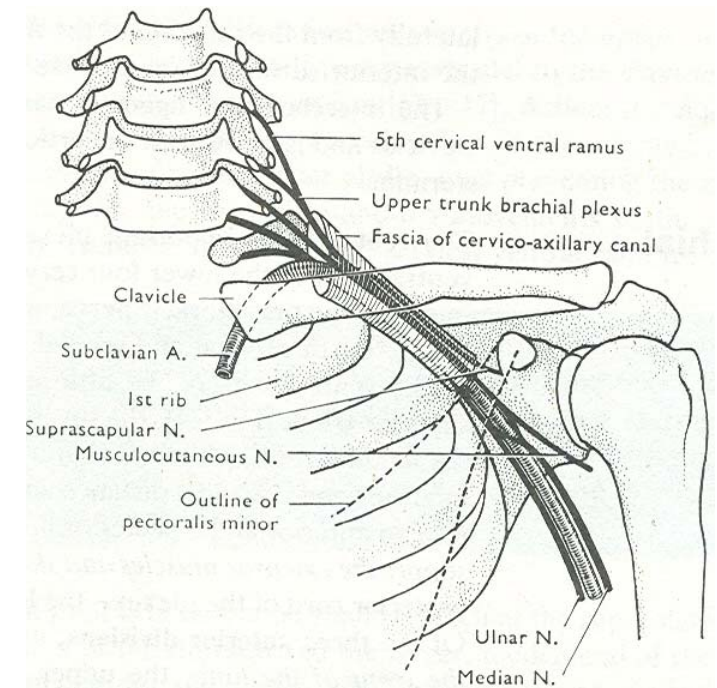
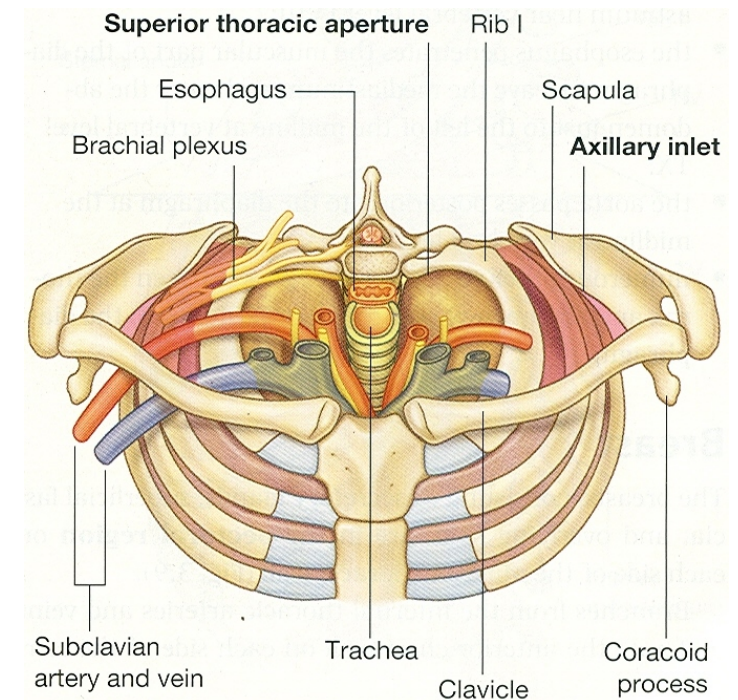
- Gateway to the upper limb
- Irregularly shaped pyramidal space
  - Four sides
  - Apex or inlet
  - Floor





# Axillary inlet

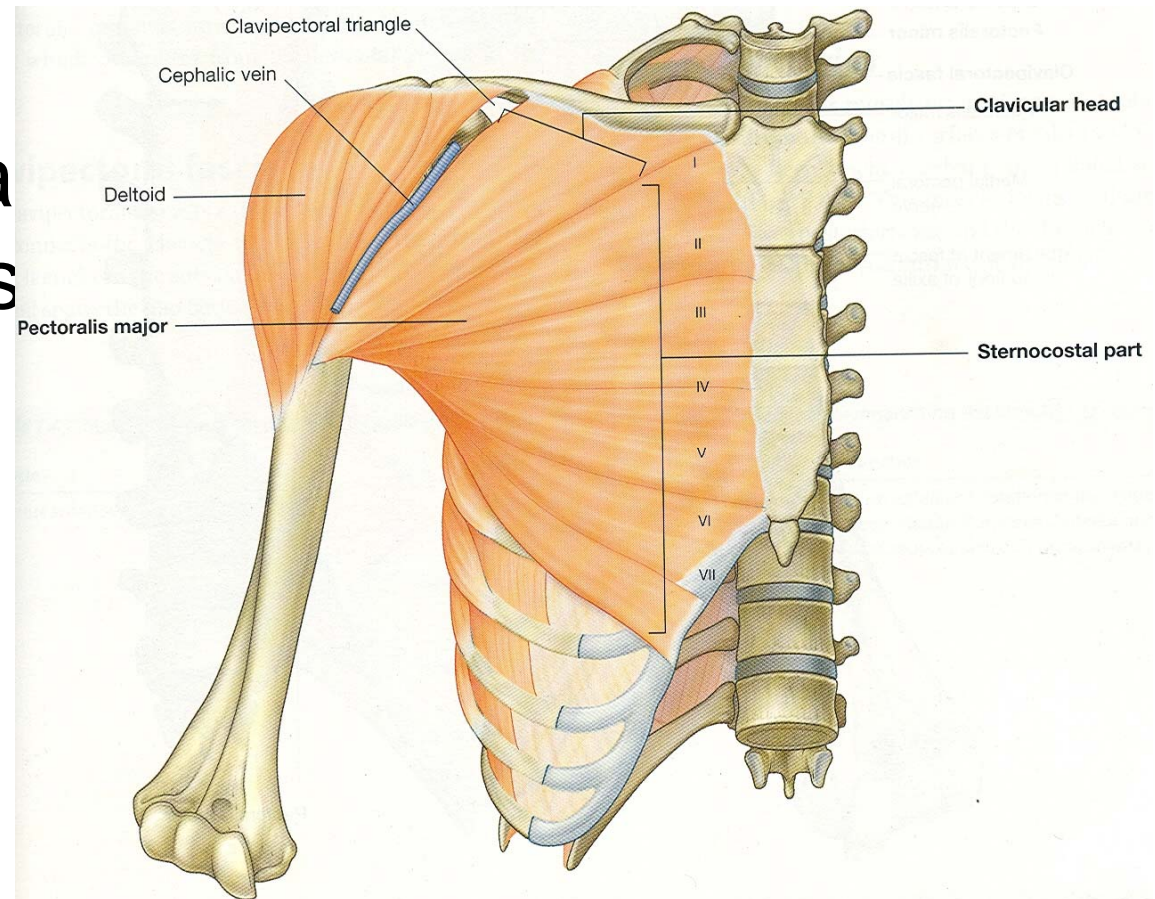
- Lateral border of first rib
- Posterior surface of the clavicle
- Superior border of the Scapula





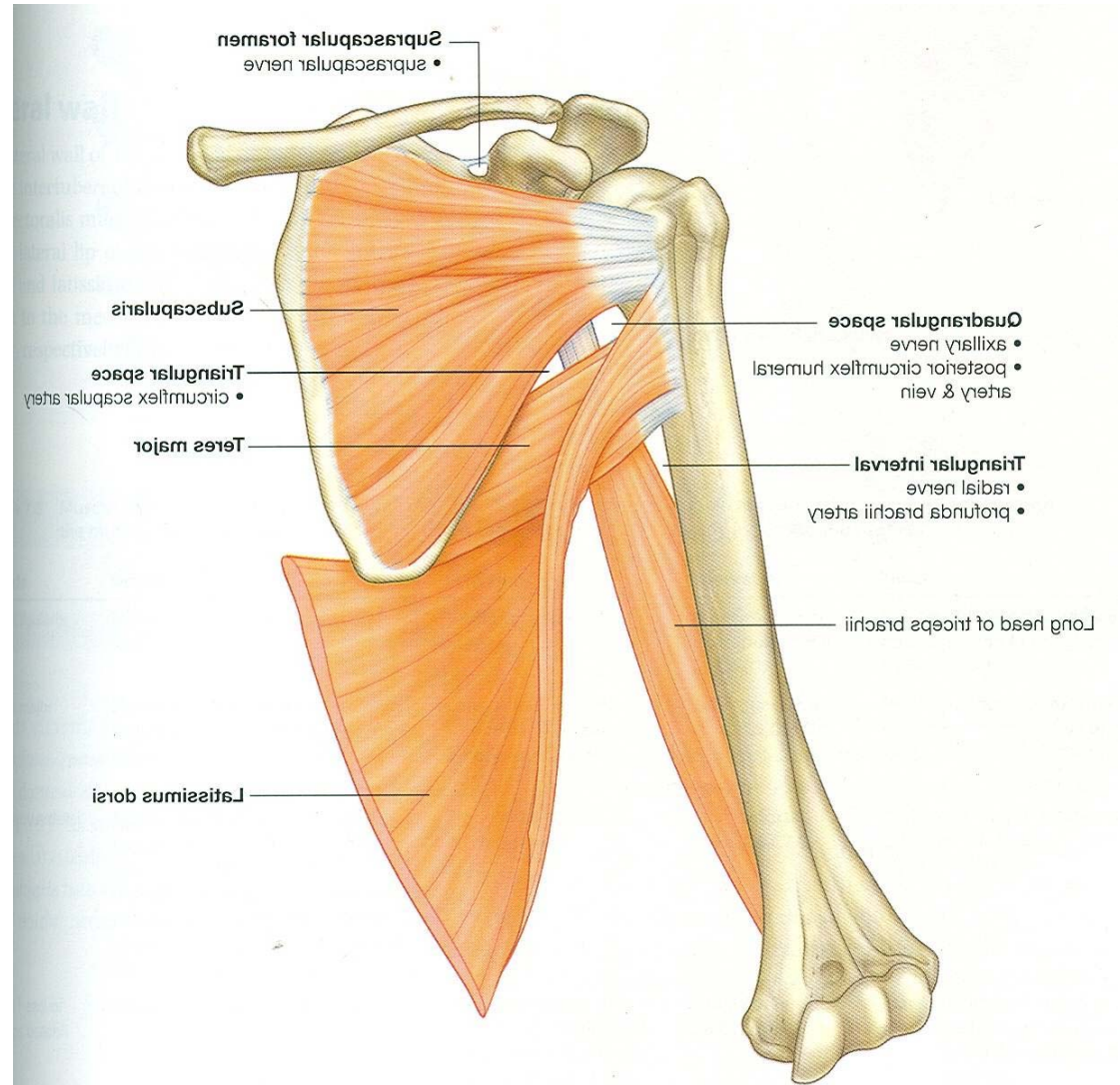
# Anterior wall of axilla

Pectoralis major  
Clavipectoral fascia  
enclosing pectoralis  
minor & subclavius



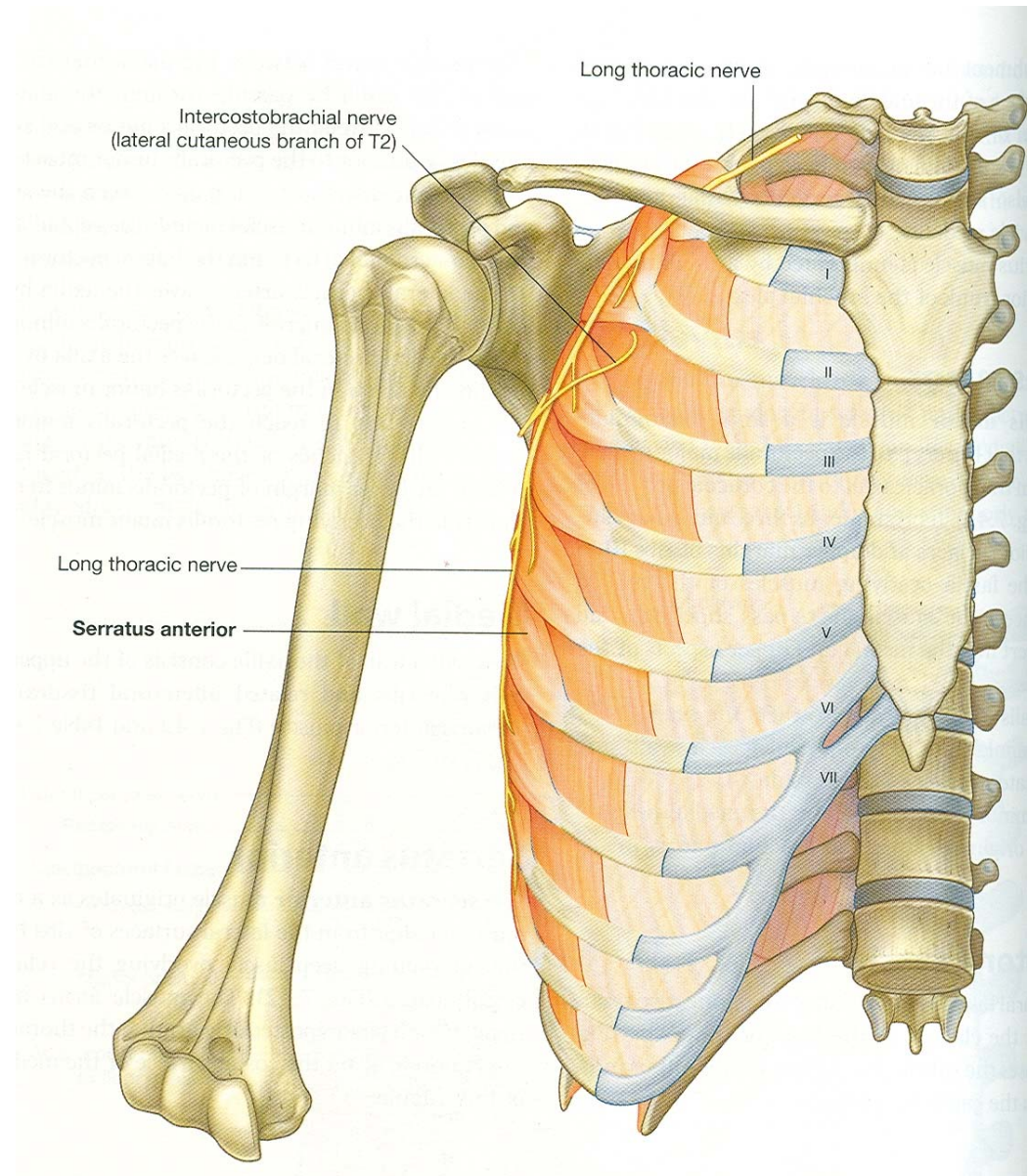
# Posterior wall

- Subscapularis
- Lattisimus dorsi, teres major
- Long head of triceps



# Medial wall of the axilla

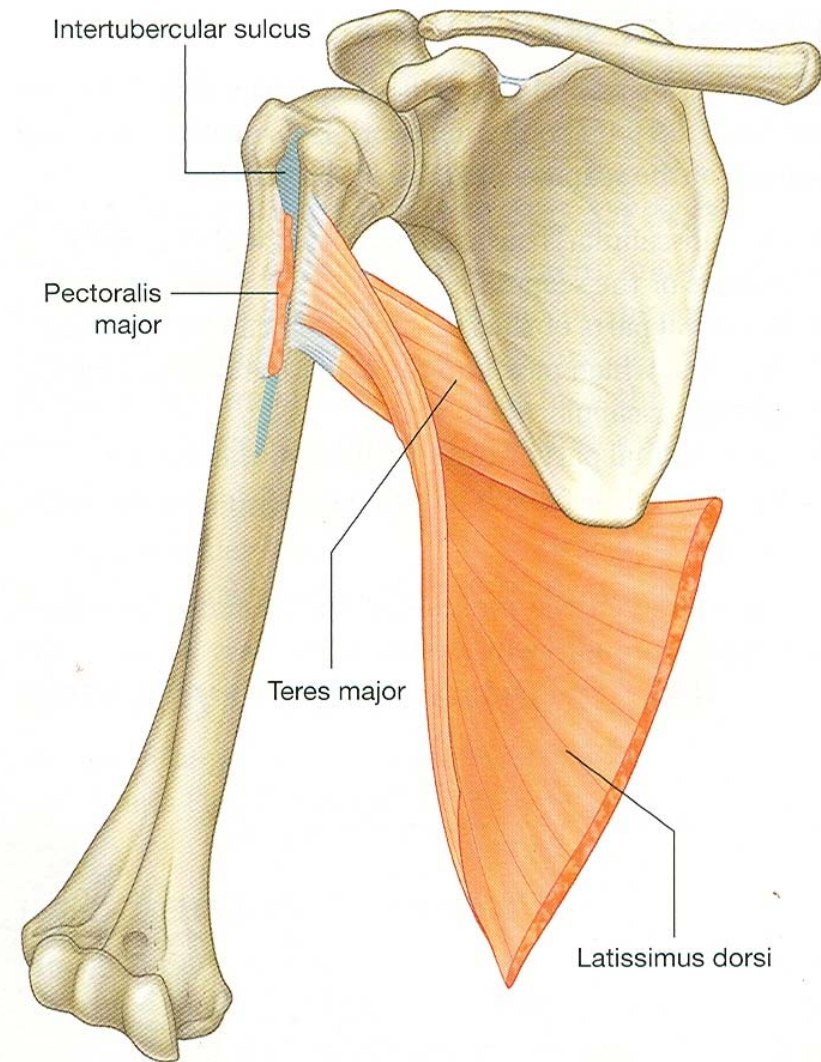
- Upper four ribs with intercostal muscles
- Serratus anterior





# Lateral wall

- Upper part of shaft of humerus (bicipital groove)



**Fig. 7.43** Lateral wall of the axilla.

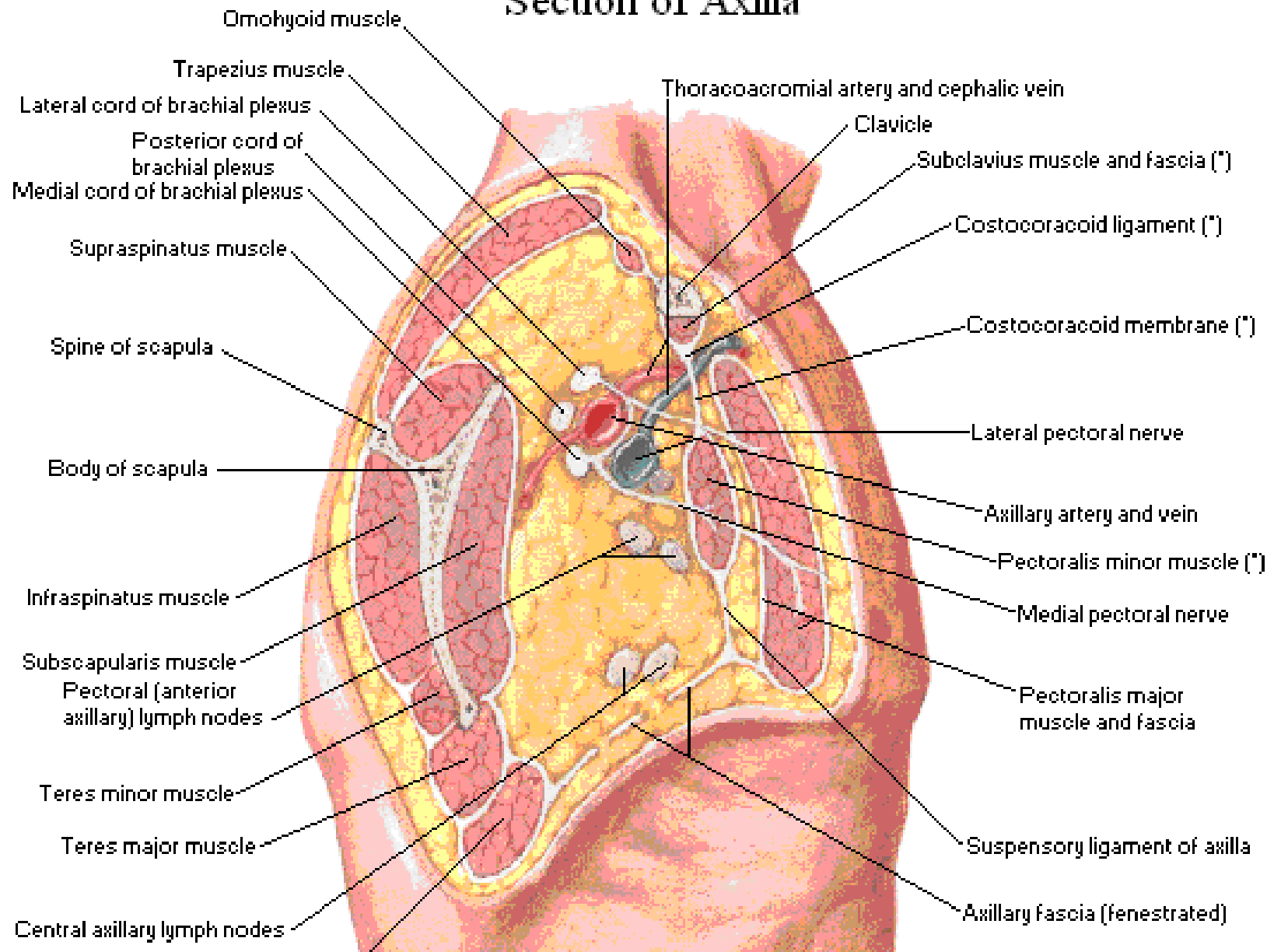
# Floor of the axilla

- Fascia & dome of skin
- Supported by  
clavipectoral fascia



# Pectoral, Clavipectoral and Axillary Fasciae

## Section of Axilla

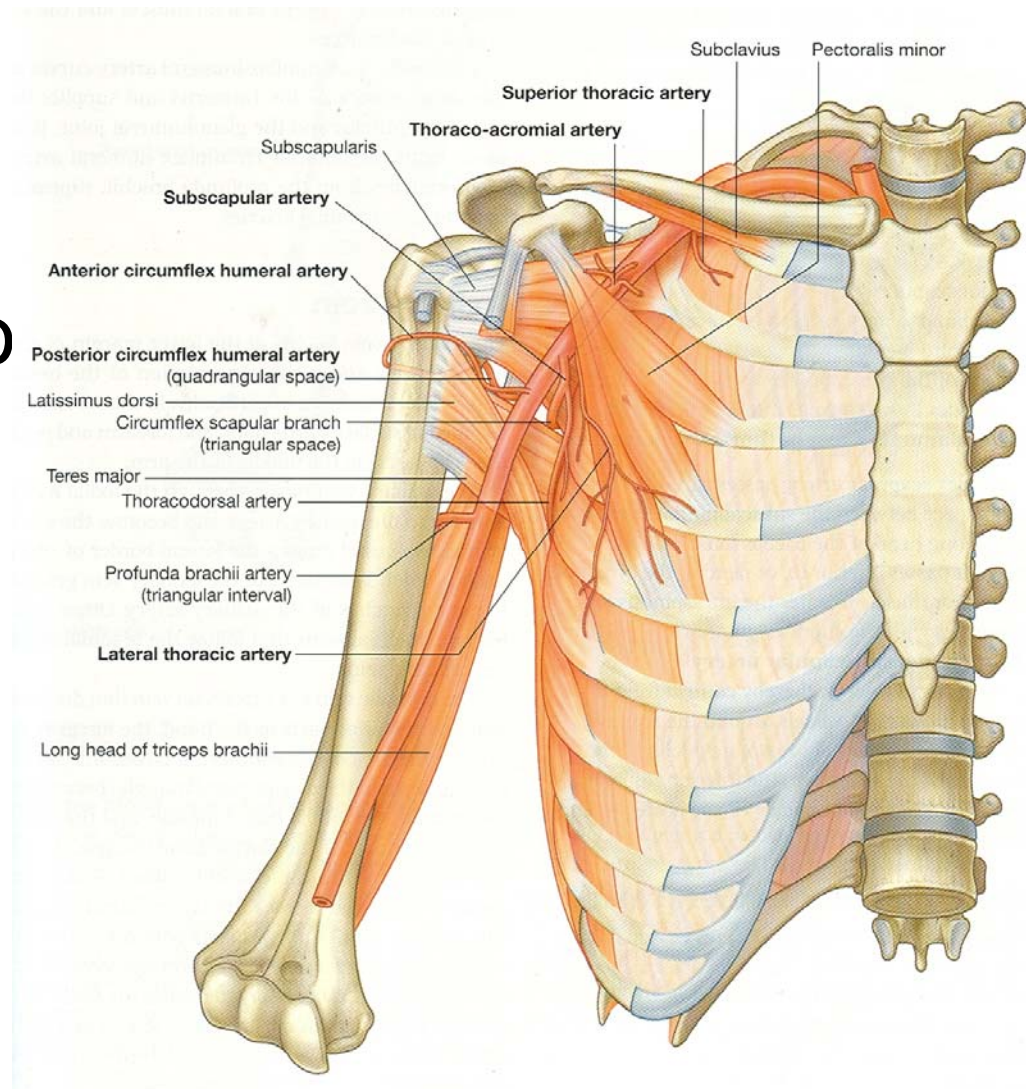


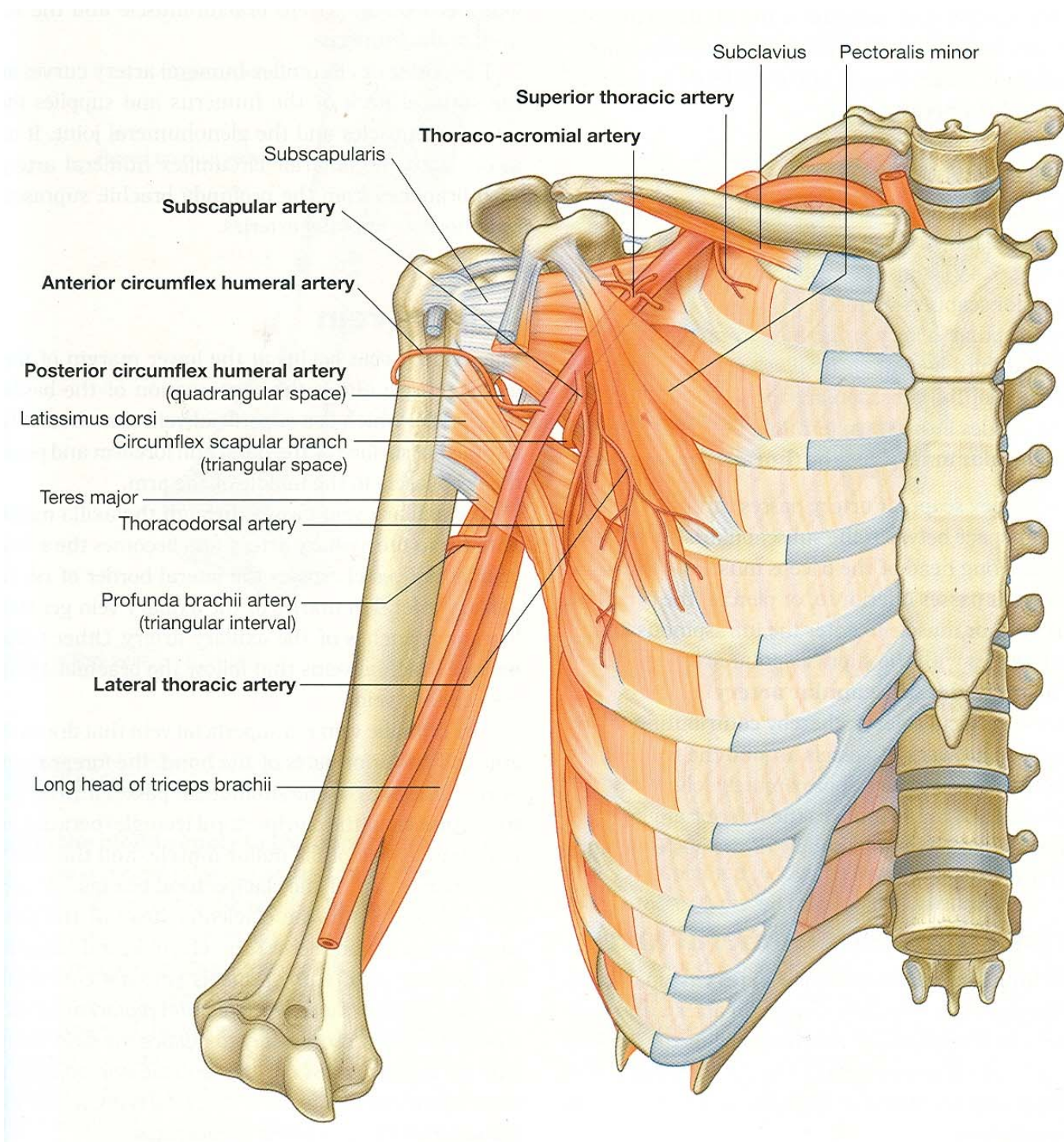
# Contents of axilla

- Axillary artery & it's branches
- Axillary vein & it's branches
- Infraclavicular part of brachial plexus
- Axillary lymph nodes & lymphatics
- Long thoracic nerve & intercostobrachial nerves
- Fat & areolar tissue
- Proximal parts of biceps brachii,  
coracobrachialis & axillary process of breast

# Axillary artery

- Continuation of subclavian artery
- Outer border of first rib to lower border of teres major

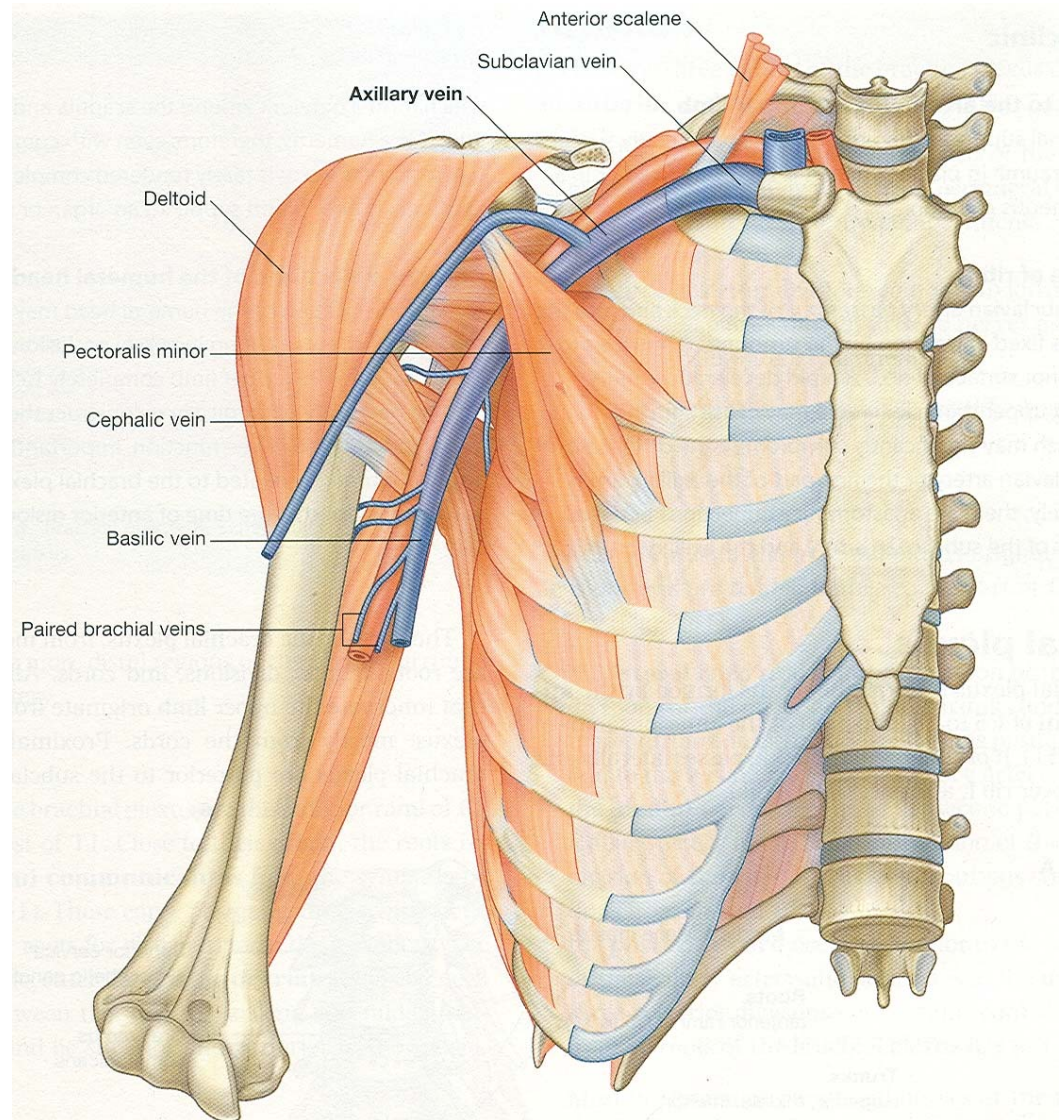






# Axillary vein

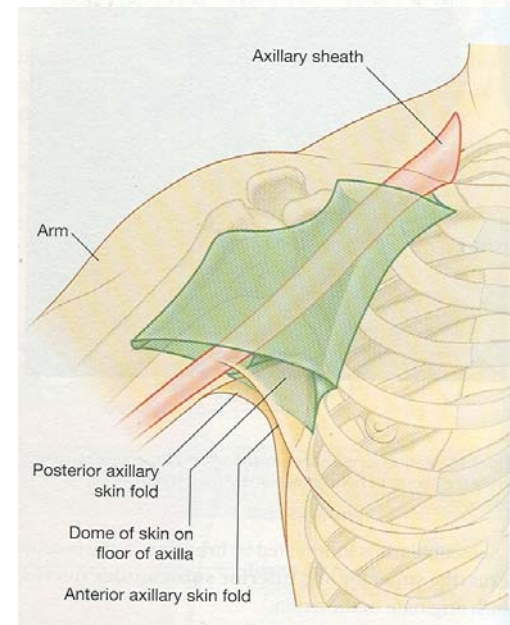
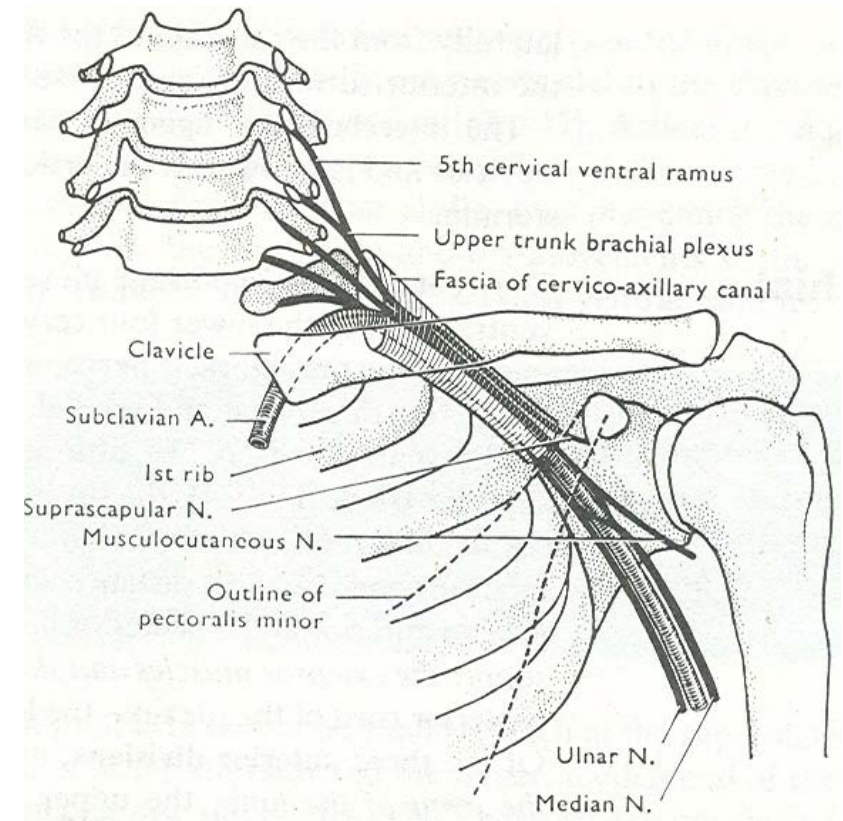
- Continuation of basilic vein
- Receives tributaries like venae comitantes of brachial artery, cephalic vein, veins corresponding to branches to axillary artery





# Axillary sheath

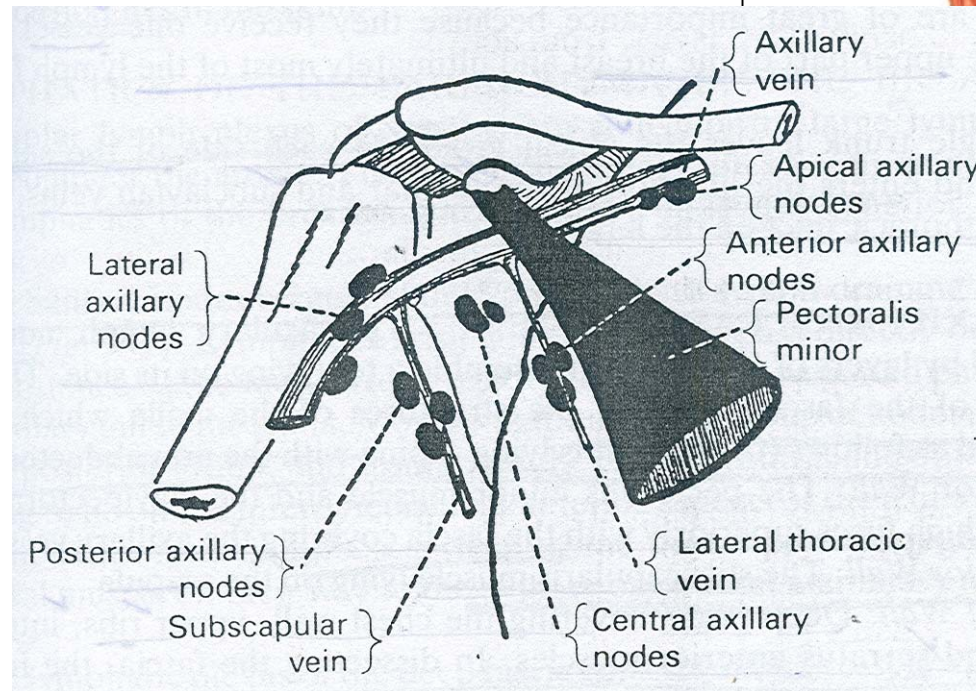
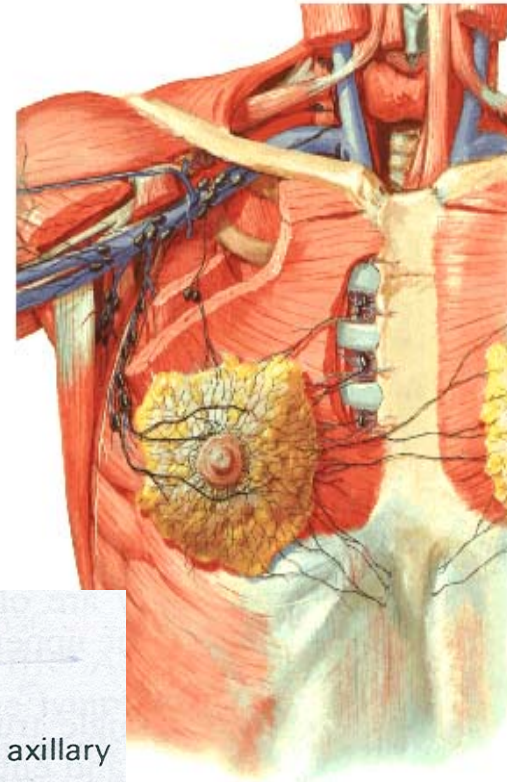
- Derived from prevertebral layer of deep cervical fascia
- Envelops axillary artery & brachial plexus
- Axillary vein is not included



# Axillary lymph nodes

- Anterior axillary
- Posterior axillary
- Central group
- lateral group
- Apical

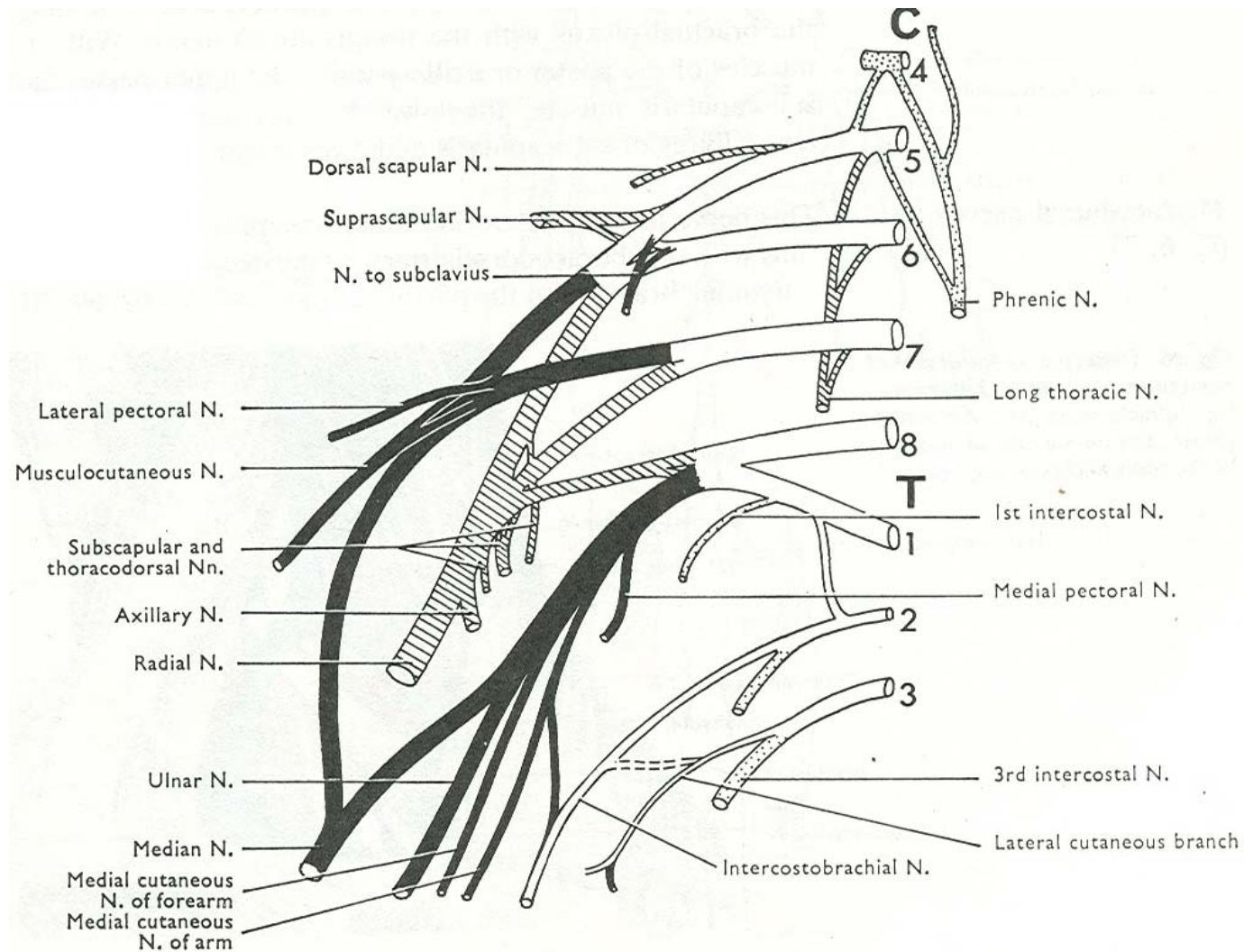
Lymph Vessels and Nodes of Mammary Gland





# Brachial plexus

- Formed by ant. Primary rami of C<sub>5</sub> – T<sub>1</sub>



# Brachial plexus

## Branches from roots-

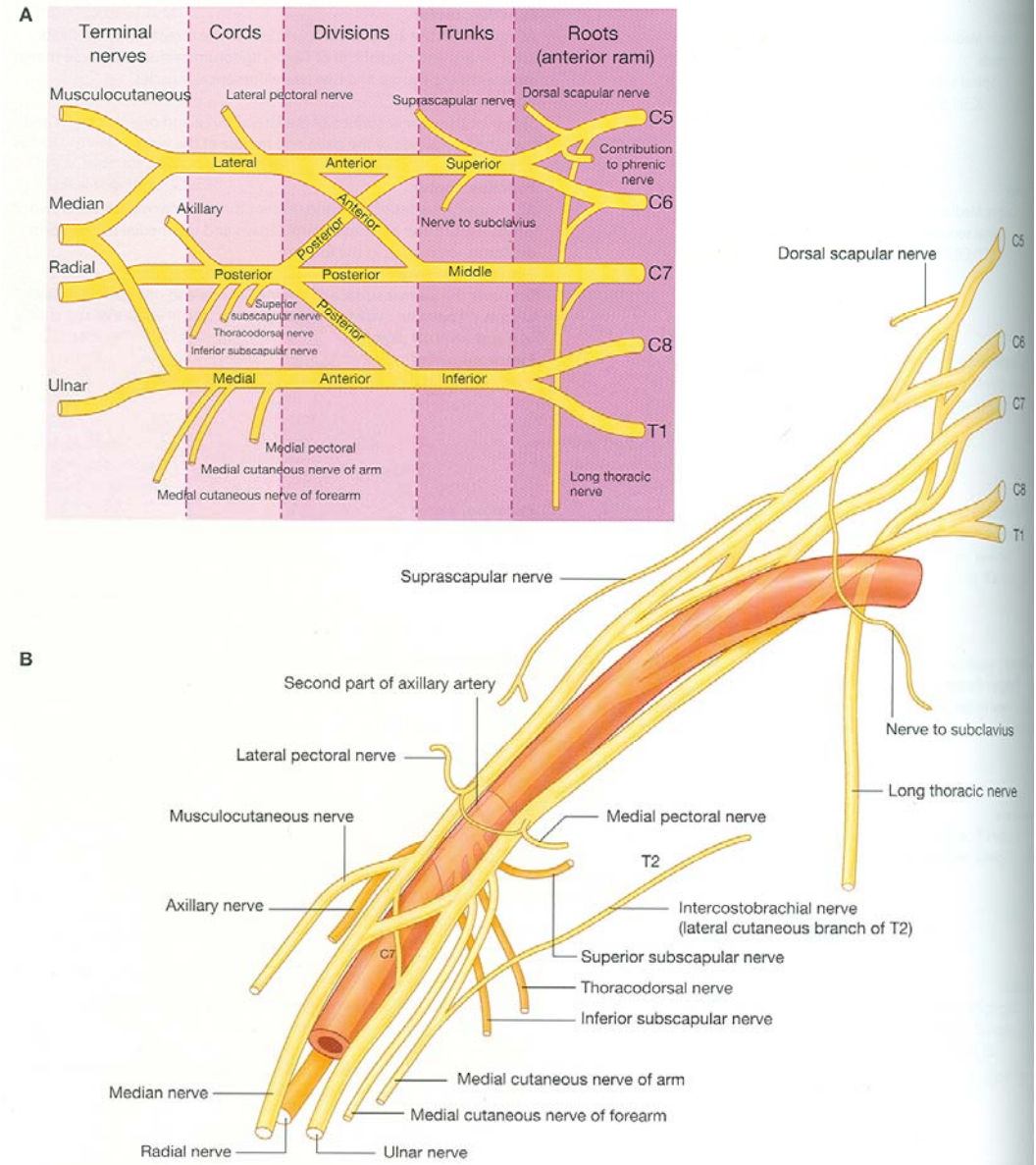
- Long thoracic nerve(C<sub>567</sub>)
- Dorsal scapular nerve(C<sub>5</sub>)

## Branches from trunks-

- Suprascapular (C<sub>56</sub>)
- Nerve to subclavius (C<sub>56</sub>)

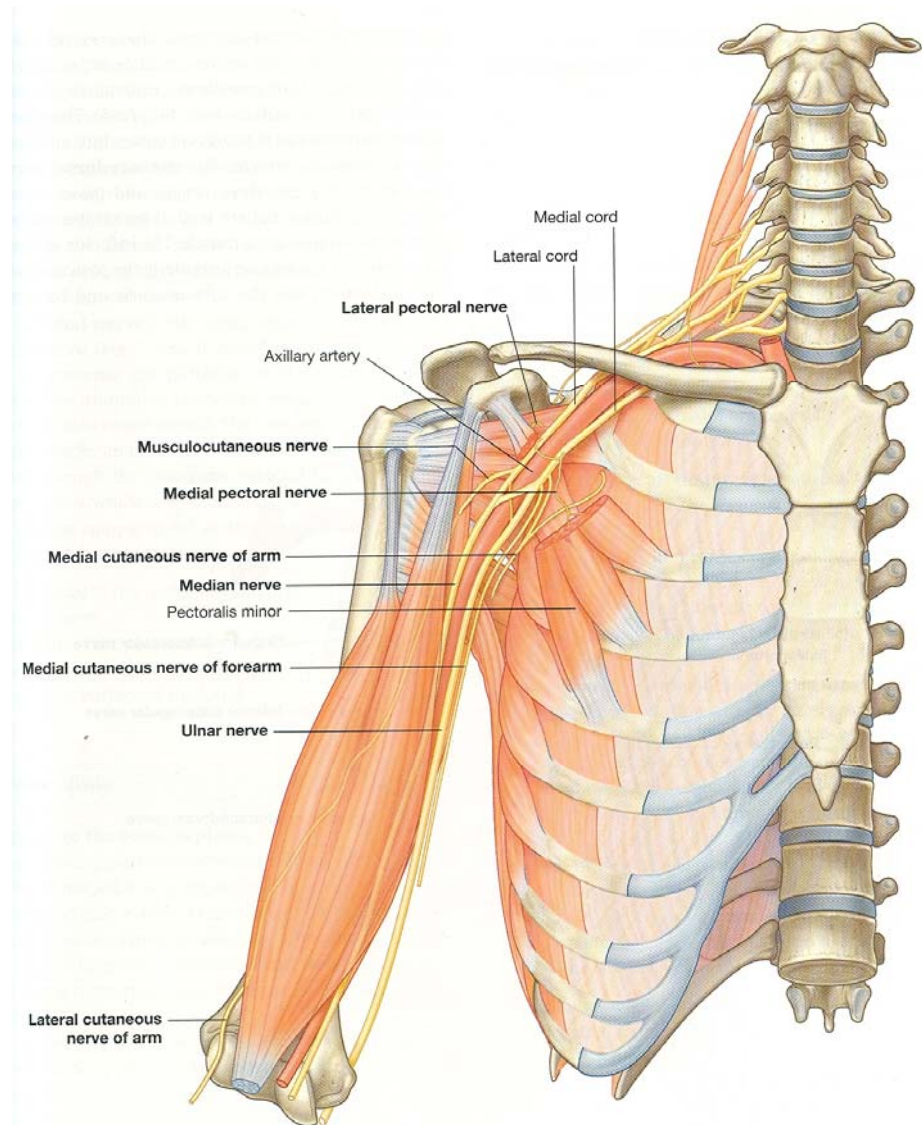
innervates the rhomboid major and minor muscles from their deep surfaces.

muscle.



# Branches of lateral cord

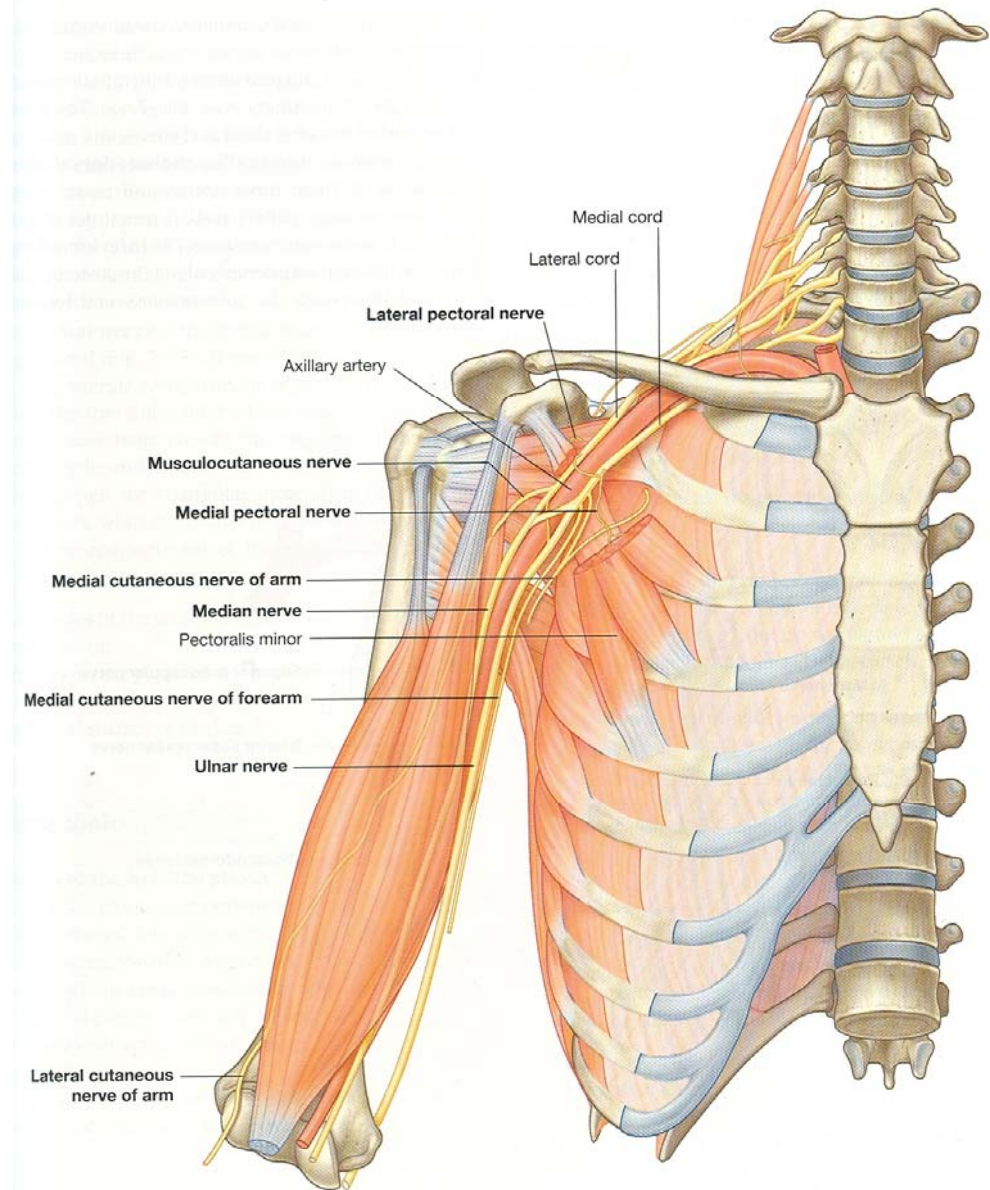
- Lateral pectoral nerve (C<sub>567</sub>)
- Musculocutaneous nerve (C<sub>567</sub>)
- Lateral root of median nerve (C<sub>567</sub>)





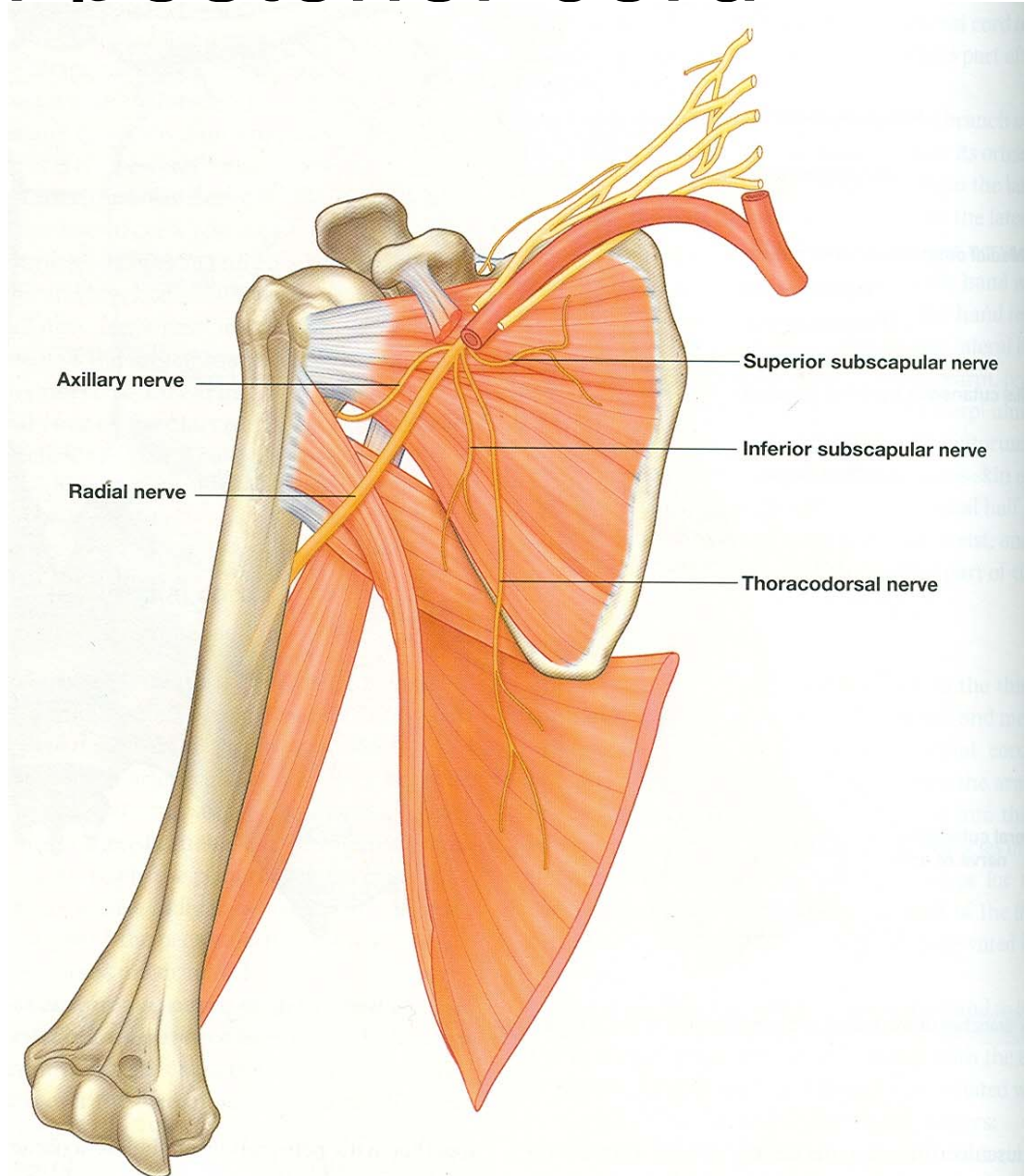
# Branches of medial cord

- Medial pectoral nerve ( $C_8T_1$ )
- Medial cutaneous nerve of arm ( $C_8T_1$ )
- Medial cutaneous nerve of forearm ( $C_8T_1$ )
- Ulnar ( $C_8T_1$ )
- Medial root of median ( $C_8T_1$ )



# Branches of posterior cord

- Upper subscapular  
(C<sub>56</sub>)
- Thoracodorsal(C<sub>678</sub>)
- Lower subscapular  
(C<sub>56</sub>)
- Axillary (C<sub>56</sub>)
- Radial( C<sub>5678</sub>T<sub>1</sub>)



# Other nerve supply of upper limb

- Supraclavicular branches from cervical plexus
- Intercostobrachial nerve (lateral cutaneous branch of second intercostal nerve)

# Injuries to brachial plexus

- Erb's paralysis  
Injury to upper trunk
- Klumpke's paralysis  
Injury to lower trunk
- Injury to nerve to serratus anterior  
Winging of scapula



- Erb's paralysis

Injury to upper trunk nerve root involved are C-5 & 6

Cause of injury-undue separation of head from shoulder in birth injury, fall on shoulder and during anesthesia

Muscles paralyzed- Biceps, deltoid, brachialis, brachioradialis, supraspinatus, infraspinatus & supinator

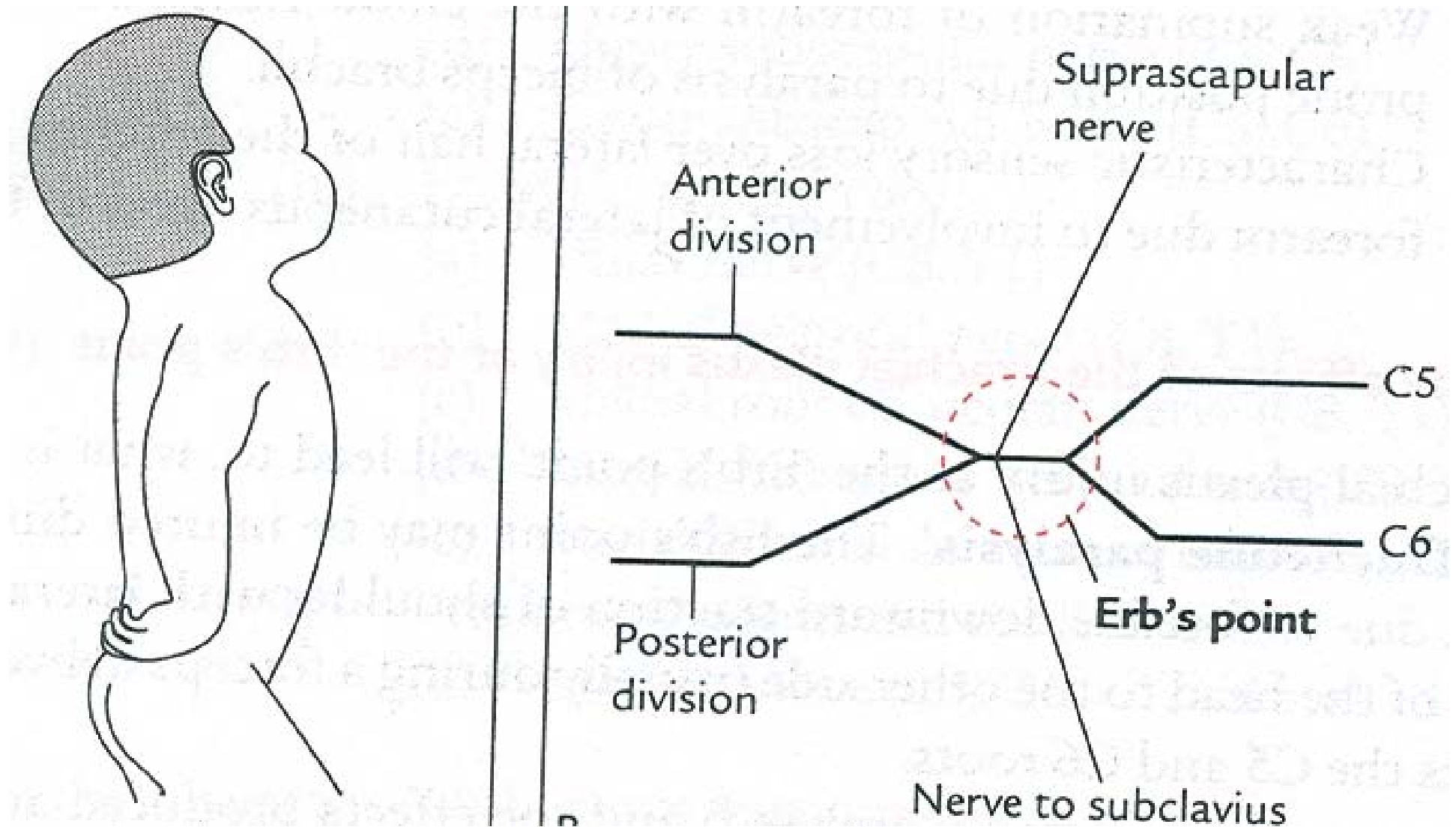
Deformity- Arm adducted & medially rotated, forearm extended & pronated. Deformity is known as **policeman's tip hand** or **porter's tip hand**

Biceps & supinator jerk are lost

Sensation lost over a small area over lower part of deltoid

# Porter's tip hand

# Erb's point



- Klumpke's paralysis

Injury to **lower trunk**. Nerve root involved are C8 & T1

Cause of injury-Undue abduction of arm as in clutching some thing with the hand after a fall from height, or so



- Muscles paralyzed- Intrinsic muscles of hand & ulnar flexor of wrist & fingers
- Deformity- **Claw hand** due to unopposed action of long flexors & extensors, There is hyperextension at metacarpophalangeal joint & flexion at interphalangeal joint
- Cutaneous anesthesia & analgesia along the ulnar border of forearm & hand
- **Horner syndrome**- Ptosis, miosis, anhydrosis enophthalmos & loss of ciliospinal reflex

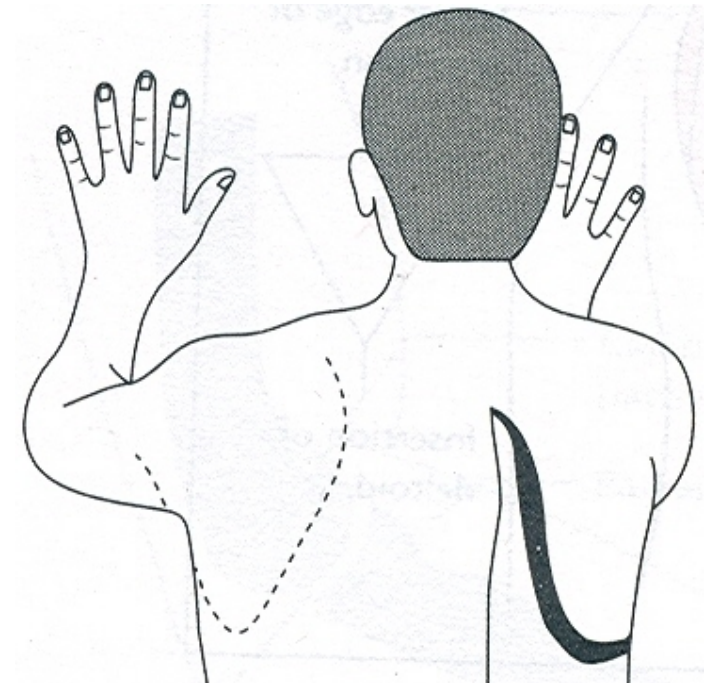


- Injury to nerve to Serratus anterior

## **Winging of scapula**

Cause- Sudden pressure from above, carrying heavy loads on shoulder

Disability- loss of pushing & punching movements , arm cannot be abducted beyond 90 degree



# Applied importance of axilla

- Boils
- Axillary lymphadenopathy
- Abscess