

# CONTENTS OF AXILLA

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## Axilla

The axilla is a pyramidal space that serves as a neurovascular passage between the neck and upper limb.

### Main Contents

1. Axillary artery and its branches 
2. Axillary vein and its tributaries
3. Cords of brachial plexus and their branches 
4. Five groups of axillary lymph nodes and their lymphatics 
5. Axillary fat
  - Embeds and protects all neurovascular structures
  - Allows free movement of vessels and nerves during shoulder movements

★ Exam Tip: Always mention axillary fat — many students forget it.

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## Axillary Artery

### Definition

The axillary artery is the continuation of the subclavian artery and supplies the upper limb, shoulder region, and axilla.

### Extent (Very Important for Exams)

- Begins: At the lateral border of the 1st rib
- Ends: At the lower border of teres major muscle
- Continues as: Brachial artery

### Flowchart (arterial continuity):

Subclavian artery → crosses lateral border of 1st rib  
→ Axillary artery → crosses lower border of teres major  
→ Brachial artery

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## Axillary Sheath

### Definition

A connective tissue sheath that encloses:

- Axillary artery
- Cords of brachial plexus

### Important Points

- It is a continuation of the prevertebral fascia of the neck
- Does NOT enclose the axillary vein (vein lies outside the sheath)

### ★ *Clinical Insight:*

Local anesthetic injected into the axillary sheath can block the brachial plexus → used in axillary nerve block.

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## Parts of the Axillary Artery

The pectoralis minor muscle crosses anterior to the axillary artery and divides it into three parts.

Flowchart (division):

Axillary artery → crossed anteriorly by pectoralis minor  
→ 1st part (proximal to muscle) → 2nd part (posterior to muscle) → 3rd part (distal to muscle)

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## 1st Part of Axillary Artery

Extent

- From lateral border of 1st rib
- To upper border of pectoralis minor

Branches

- Superior thoracic artery

Superior Thoracic Artery

- Supplies:
  - Upper intercostal spaces

- Upper part of serratus anterior
- Pectoral muscles

★ Exam Note:

Mnemonic — 1 branch from 1st part

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## 2nd Part of Axillary Artery

Location

- Lies posterior to pectoralis minor

Branches

1. Thoracoacromial artery
2. Lateral thoracic artery

Thoracoacromial Artery 

- Pierces clavipectoral fascia
- Divides into four branches:

Flowchart:

## Thoracoacromial artery

- Pectoral branch
- Deltoid branch
- Acromial branch
- Clavicular branch

Mnemonic: "PAD CI"

## Lateral Thoracic Artery

- Supplies:
  - Serratus anterior
  - Pectoral muscles
  - Mammary gland (important in females)

★ *Clinical Correlation:*

Enlarged axillary lymph nodes can compress the lateral thoracic artery → breast pathology relevance.

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## 3rd Part of Axillary Artery

## Extent

- From lower border of pectoralis minor
- To lower border of teres major

## Branches

1. Subscapular artery
2. Anterior circumflex humeral artery
3. Posterior circumflex humeral artery

Mnemonic: "SAP" (Subscapular, Anterior circumflex, Posterior circumflex)

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## Subscapular Artery (Largest Branch)

Divides into:

- Circumflex scapular artery
- Thoracodorsal artery (supplies latissimus dorsi)

★ *Clinical Insight:*

Important contributor to scapular anastomosis → maintains blood flow if axillary artery is blocked.

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### Circumflex Humeral Arteries

- Anterior circumflex humeral artery
- Posterior circumflex humeral artery

Feature	Anterior	Posterior
Size	Small	Large
Course	In front of surgical neck	Through quadrangular space
Accompanies	—	Axillary nerve
Supply	Head of humerus	Deltoid & shoulder joint

★ *Viva Favorite:*

Fracture of surgical neck of humerus → risk to axillary nerve & posterior circumflex humeral artery.

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Summary Table 

Part of Axillary Artery	Relation to Pectoralis Minor	Branches
1st part	Proximal	Superior thoracic
2nd part	Posterior	Thoracoacromial, Lateral thoracic
3rd part	Distal	Subscapular, Anterior & Posterior circumflex humeral

 Mnemonic to remember all of the parts:

The axillary artery gives six branches in total from its three parts.

"Screw The Lawyer Save A Patient"

OR

"Some Times Life Seems A Pain"

Branches in Order

- S - Superior thoracic
- T - Thoracoacromial
- L - Lateral thoracic
- S - Subscapular
- A - Anterior circumflex humeral
- P - Posterior circumflex humeral

★ Exam Tip: Write branches in order from proximal to distal for extra credit.

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Axillary Vein 

Formation

The axillary vein is formed at the lower border of teres major muscle by the union of:

- Venae comitantes of brachial artery
  - Basilic vein
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### Course

- Runs upwards along the medial side of the axillary artery
- Lies outside the axillary sheath
- Ends at the lateral border of the 1st rib
- Continues as the subclavian vein

### ★ *Clinical Point:*

Because the vein is medial and superficial, it is more prone to injury during axillary procedures.

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## BRACHIAL PLEXUS IN THE AXILLA ⚡

### Arrangement

- The cords of the brachial plexus are named according to their relation to the axillary artery

Cord	Relation to Axillary Artery
Lateral cord	Lateral
Posterior cord	Posterior
Medial cord	Medial

### Important Features

- Cords surround the axillary artery
- Enclosed within the axillary sheath
- Embedded in axillary fat
- Provide motor and sensory nerve supply to the upper limb

★ *Viva Pearl:*

Naming of cords is NOT based on position in the neck — only in relation to the axillary artery.

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## AXILLARY LYMPH NODES

There are five groups of axillary lymph nodes.

### Groups

1. Anterior (Pectoral) group
2. Posterior (Subscapular) group
3. Lateral (Humeral) group
4. Central group
5. Apical group

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## Lymphatic Drainage Pattern

Flowchart:

Anterior + Posterior + Lateral groups → Central group  
→ Apical group → Subclavian lymph trunk → Venous  
angle

 *Clinical Correlation:*

- Breast cancer commonly spreads first to the anterior (pectoral) nodes
  - Apical nodes enlargement may indicate advanced malignancy
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## APPLIED ANATOMY

### Axillary Sheath & Brachial Plexus Nerve Block

- Local anesthetic injected into the axillary sheath
- Blocks:
  - Cords and terminal branches of brachial plexus
- Used for:
  - Surgeries of forearm, hand, and wrist

★ *Key Point:*

Axillary artery acts as a landmark during the nerve block.

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## EXAM SUMMARY

Structure	Key Exam Point
Axillary artery	6 branches, divided by pectoralis minor
Axillary vein	Medial to artery, outside sheath
Brachial plexus	Cords surround artery
Lymph nodes	5 groups, central → apical
Applied anatomy	Axillary nerve block

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### Resources:

i) Snell's Clinical Anatomy by Regions (Book by Lawrence E. Wineski)

ii) BD Chaurasia's Human Anatomy: Regional and Applied Dissection and Clinical

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