MEDICAL EDUCATION RESOURCE

# Posterior Compartment of Arm & Triceps Brachii Muscle

## Posterior Compartment of Arm

### Overview

- The **posterior compartment** is also called the **extensor compartment** of the arm.
- It is **larger** than the anterior compartment.
- It contains:
  - **Muscles:** *Triceps brachii* and *Anconeus*.
  - **Nerve:** *Radial nerve*.
  - **Artery:** *Profunda brachii artery* and its branches.
- **Main action:** Extension of elbow joint.

## Triceps Brachii Muscle

### Origin

- **Long head** ? Infraglenoid tubercle of scapula.

- **Lateral head** ? Posterior surface of humerus, above the radial (spiral) groove.
- **Medial head** ? Posterior surface of humerus, below the radial groove.

---

## Insertion

- Upper surface of the **olecranon process of ulna** and **posterior capsule of elbow joint** (via triceps tendon).

---

## Nerve Supply

- **Radial nerve (C6, C7, C8).**
    - Each head receives a separate branch.
    - Nerve to long head arises in axilla.
    - Nerve to medial head also supplies **anconeus**.

---

## Actions

- **Chief extensor of elbow joint.**
- **Long head** also extends and adducts arm at the shoulder.
- **Assists** in stabilizing the head of humerus during adduction.

---

### Relations

- **Radial nerve and profunda brachii artery** run **in the spiral groove** between the long and medial heads.
- **Medial intermuscular septum** separates triceps from the flexor group anteriorly.

## Dissection of Posterior Compartment

### Steps

1. Place cadaver in prone position and make a **midline incision** along the posterior arm.
2. Reflect **skin and superficial fascia** to expose the **deep fascia**.
3. Identify the **triceps brachii** muscle:
    - **Long head** ? from infraglenoid tubercle.
    - **Lateral head** ? upper posterior humerus (above radial groove).
    - **Medial head** ? deep, below radial groove.
4. Observe the **triceps tendon** inserting into **olecranon process**.
5. Clean the **radial nerve** and **profunda brachii artery** running obliquely in the **spiral groove** between the long and lateral heads.
6. Follow radial nerve to its point of piercing the **lateral intermuscular septum** to enter the anterior compartment.
7. Trace **branches** to triceps and anconeus.

8. Examine **anconeus** muscle near the posterior elbow joint (small, triangular).

---

## Clinical Anatomy of Triceps and Posterior Compartment

---

### 1. Triceps Reflex

- Tapping over triceps tendon ? causes elbow extension.
- Tests **C7–C8** segments of the spinal cord via **radial nerve**.

---

### 2. Radial Nerve Injury

- Commonly injured in:
  - **Fracture of mid-shaft of humerus** (spiral groove).
  - **Improper use of crutches** (crutch palsy).
- Effects:
  - Paralysis of triceps (if injury high in axilla).
  - Wrist and finger drop due to paralysis of extensors.
  - Sensory loss over posterior arm, forearm, and dorsum of hand.

---

### 3. Isolated Long Head Paralysis

- Loss of **shoulder extension and adduction**, but elbow extension usually intact.

---

### 4. Triceps Tendon Rupture

- Rare; causes inability to extend forearm.
- May follow sudden resisted flexion (e.g., heavy lifting).

---

### 5. Injection Landmark

- **Posterior aspect of arm** near deltoid–triceps junction ? used for **radial nerve block**.

---

### 6. Surgical Note

- The **radial nerve and profunda brachii artery** must be protected during **posterior approaches to humeral shaft fractures**.