

Profunda Brachii Artery (Deep Artery of Arm)

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Introduction

- Also called **Deep artery of the arm** or **Superior profunda artery**.
 - It is the **largest branch of the brachial artery**.
 - Chief arterial supply to the **posterior (extensor) compartment** of the arm.
 - Provides an important **collateral channel around the elbow joint**.
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Origin

- From the **posterior surface of the brachial artery**, just **below the lower border of teres major** (upper third of arm).
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Course

1. **Immediately accompanies the radial nerve.**
2. Enters the **spiral (radial) groove** on posterior humerus.

3. Runs **obliquely downward and laterally** between the **long and medial heads of triceps**.
4. Pierces the **lateral intermuscular septum** with the radial nerve.
5. Ends by dividing into two terminal branches in the lower arm:
 - **Radial collateral artery** (anterior branch)
 - **Middle collateral artery** (posterior branch)

Branches and Distribution

1. Muscular Branches

- To all **three heads of triceps brachii** and **anconeus**.

2. Nutrient Branch

- To **humerus** (sometimes from main trunk, sometimes from its muscular branch).

3. Deltoid (Ascending) Branch

- Small twig that anastomoses with **posterior circumflex humeral artery** near the shoulder.

4. Terminal Branches

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Radial Collateral Artery	Descends anterior to lateral intermuscular septum; anastomoses with radial recurrent artery (branch of radial artery) in front of lateral epicondyle.
Middle Collateral Artery	Descends posterior to lateral epicondyle; anastomoses with interosseous recurrent artery (branch of posterior interosseous artery) behind the elbow.

Relations

- **Companion nerve:** Radial nerve throughout its course in spiral groove.
- **Companion veins:** Two venae comitantes draining into brachial veins.

Clinical Anatomy

- **Collateral circulation around elbow:**
 - Profunda brachii provides both **radial collateral** and **middle collateral** branches that communicate with recurrent arteries below the elbow.
 - Maintains blood flow when the **brachial artery is ligated or obstructed**.
- **Surgical relevance:**
 - Must be protected during **posterior approach to humeral shaft** or **fixation of mid-shaft fractures**, as it lies with the **radial nerve** in the groove.
- **Aneurysm / laceration:**

- Rare but may occur with humeral fractures ? can lead to **bleeding or pseudo-aneurysm** in posterior arm.