Anastomosis Around the Elbow Joint

The **arterial anastomosis around the elbow** is an important network connecting branches of the **brachial artery** with branches of the **radial and ulnar arteries**. It provides **collateral circulation** around the elbow, particularly when the joint is flexed or when the main arterial channel is compressed or obstructed.

1. Arteries taking part

The anastomosis is formed mainly by **six arteries**:

From above — branches of brachial artery	From below — branches of forearm arteries
Superior ulnar collateral artery	**Posterior ulnar recurrent artery**
Inferior ulnar collateral artery	**Anterior ulnar recurrent artery**
Radial collateral artery	**Radial recurrent artery**
Middle collateral artery	

2. Important anastomotic connections

A. Lateral side of elbow

- **Radial collateral artery** descends from the profunda brachii artery.
- It divides near the lateral epicondyle and participates in anastomosis with the **radial recurrent artery**.
- The **middle collateral artery** also participates in the network posterior to the lateral epicondyle, communicating with the **interosseous recurrent artery**.

B. Medial side of elbow

- **Superior ulnar collateral artery** descends behind the medial epicondyle and anastomoses with the **posterior ulnar recurrent artery**.
- **Inferior ulnar collateral artery** passes anterior to the medial epicondyle and anastomoses with the **anterior ulnar recurrent artery**.

C. Posterior aspect

The **middle collateral artery** and **interosseous recurrent artery** form an important communication around the posterior aspect of the elbow.

3. Clinical importance

Collateral circulation:
If the **brachial artery** is gradually narrowed or obstructed, blood can reach the forearm through these collateral channels.

Fracture around the elbow:
In supracondylar fractures of the humerus, injury to the brachial artery can compromise this circulation and may result in **ischemia of the forearm and hand**.

Elbow movements:
During flexion of the elbow, some arterial channels may be compressed. The extensive anastomosis helps maintain adequate blood flow.

Easy way to remember

Above the elbow:

- Radial collateral
- Middle collateral
- Superior ulnar collateral
- Inferior ulnar collateral

Below the elbow:

- Radial recurrent
- Interosseous recurrent
- Anterior ulnar recurrent
- Posterior ulnar recurrent

Key principle:

> **Collateral branches from the brachial artery above meet recurrent branches from the radial and ulnar arteries below around the elbow.**