## **ANATOMY OF THE ARM**

# Compartments of the arm:

It is divided into 2 compartments:

1- Anterior 2- posterior

- How divide the arm into Anterior and posterior?

by:

- The deep fascia of the arm.
- ♥ The humerus.
- The lateral and medial intermuscular septa.
- > The lateral and medial intermuscular septa:
- 1- Medial intermuscular septum:-
  - ✓ It is a fascial sheet that connects the medial supracondylar ridge of the humerus with the deep fascia of the arm.
  - $\checkmark$  It is **pierced** by <u>ulnar nerve</u> at the middle of the arm.
- 2- Lateral intermuscular septum:-
  - ✓ It is a fascial sheet that connects the lateral supracondylar ridge of the humerus with the deep fascia of the arm.
  - ✓ It is pierced by <u>radial nerve</u> at the junction between middle and lower thirds of the arm

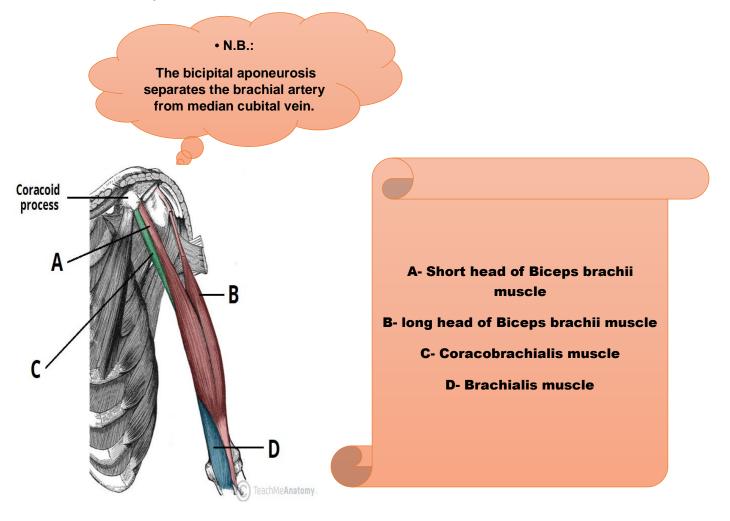


From where	ANTERIOR COMPARTMENT OF THE ARM	POSTERIOR COMPARTMENT OF THE ARM
Cotent \ compartment	1.Flexor muscles:-	1. Triceps muscle. (extensor muscle)
	<ul> <li>3 muscles [BBC]</li> <li>1- coracobrachialis</li> <li>2- brachialis</li> </ul>	2. Radial <mark>nerve</mark> .
	3- biceps brachii.	3. Profunda brachii <mark>vessels</mark> .
	2.Brachial <mark>artery</mark> and its 2 venae comitantes. 3.Basilic <mark>vein</mark>	4. Superior ulnar collateral vessels.
	<ul> <li>Located: (at the upper half of the arm).</li> </ul>	5. Posterior branch of inferior ulnar collateral
	4.Median nerve.	
	5.UInar nerve ▼ Located: (in the upper half of the arm).	
	<ul> <li>In the arm (anterior) in the forearm (posrerior)</li> <li>6.Musculocutaneous nerve.</li> </ul>	
	Lateral Neuromuscular septum of Arm	Fig. 12.6 Anterior upper limb muscles are flexors. Biceps brachil Users Lateral Humerus Indeala head Lateral head Long head Posterior

From	ANTERIOR COMPARTMENT OF THE ARM				
where	Muscles:				
	1-Coracobrachialis muscle	2- Biceps brachii muscle	3- Brachialis muscle:		
• Origin	Tip of coracoid process (with short head of biceps brachii).	Short head: (medial)     from the tip of coracoid process.	<ul> <li>From the lower half of the front of the shaft of humerus</li> <li>the front of the 2</li> </ul>		
		<ul> <li>Long head:(lateral)</li> <li>from the supraglenoid tubercle of the scapula (intracapsular, extrasynovial).</li> </ul>	intermuscular septa.		
<ul> <li>Insertion</li> </ul>	Middle of medial aspect of the humerus.	<ul> <li>Posterior part of the radial tuberosity.</li> </ul>	Coronoid process of ulna.		
		<ul> <li>Bicipital aponeurosis into the deep fascia of the cubital fossa.</li> </ul>			
<ul> <li>Nerve supply</li> </ul>	Musculocutaneous nerve.		<ul> <li>Musculocutaneous nerve</li> </ul>		
			✓ radial nerve for its lateral part.		
Actions	<ul> <li>It helps in flexion</li> <li>adduction of the arm.</li> </ul>	Flexor of the elbow.	The muscle is the main <mark>flexor</mark> of elbow joint		
	✓ adduction of the arm.	Powerful supinator of the flexed forearm.			
		Long head helps in stabilization of shoulder joint.			
• Photo	Coracobrachialis	biteps brachti Dieges brachti EBCEPS BRACHTI Lorg Head Storer Head	Brachialis Humerus		
		Supraglenoid tubercle Glenoid fossa	Brachialis		
		Infraglenoid tubercle			

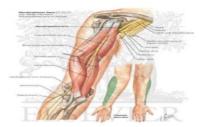
- > Changes that occur at the level of insertion of coracobrachialis:
  - 1- The ulnar nerve; pierces the medial intermuscular septum to reach the posterior compartment.
  - 2- The radial nerve & profunda brachii artery; descend on the back of humerus through the spiral groove.
  - 3- The median nerve, crosses in front of brachial artery from lateral to medial.
  - 4- The basilic vein; pierces the deep fascia to ascend medial to brachial artery.
  - 5- The medial cutaneous nerve of the arm and forearm; pierces the deep fascia to pass through the superficial fascia.
  - 6- The nutrient artery of the humerus enters into the bone.

\*\* Note to Biceps brachii muscle



- Musculocutaneous nerve (C5, 6, 7)
- Origin: It is a branch of the lateral cord of brachial plexus
- Course & relations:
  - The nerve descends lateral to 3rd part of axillary artery. then pierces
  - the coracobrachialis.
  - It pass between biceps and brachialis
  - Then pierce the deep fascia to be superficial
- Termination: It terminates by continuing as the lateral cutaneous nerve of the forearm
- Branches:
- Muscular branches to:
  - 1. 2 heads of biceps brachii.
  - 2. Coracobrachialis.
  - 3. The greater part of brachialis.

From where	POSTERIOR COMPARTMENT OF THE ARM				
	Triceps muscle				
• Origin	<ul> <li>Long head; from the infraglenoid tubercle.</li> <li>Lateral head; from back of humerus above the spiral groove.</li> <li>Medial head; from back of humerus below the spiral groove.</li> </ul>				
•Insertion	Olecranon process of ulna.       Anterior:       Lateral:       Image: Olecranon process       Image: Olecranon process         Image: Image				
Nerve supply	Radial nerve.				
Actions	♣ Main extensor of the elbow.				
	Long head shares in stability of shoulder.				
	♣ The long head helps in adduction of abducted arm.				
• Photo	Long head of tricept Lateral head of triceps Medial head of triceps				



From where	CUBITAL FOSSA	
Def	a triangular depression in the front of the elbo	w.
• Boundaries	<ul> <li>Medial boundary; pronator teres muscle.</li> <li>Lateral boundary; brachioradialis muscle.</li> </ul>	- Kalendar
• Base	<ul> <li>Directed upwards (superior)</li> <li>Formed by an imaginary line connecting the 2 humeral epicondyles.</li> </ul>	Brachialis Cubital fossa
• Арех	<ul> <li>Directed downwards (inferior)</li> <li>Formed by the point of overlap of brachioradialis over pronator teres.</li> </ul>	Line between lateral and medial epicondyles Brachioradialis
• Roof	<ul> <li>is formed by:</li> <li>Skin.</li> <li>Superficial fascia Containing: <ol> <li>median cubital vein</li> <li>parts of basilic and cephalic veins</li> <li>medial and lateral cutaneous nerves of forearm.</li> </ol> </li> <li>Deep fascia.</li> <li>Bicepital aponeurosis.</li> </ul>	New York the many of the second secon
• Floor	<ul> <li>Brachialis muscle (medially)</li> <li>supinator muscle (laterally)</li> </ul>	
• Contents	From lateral to medial Biceps tendon. Brachial artery. Median nerve. Radial nerve	Redit orany Redit

Erom whore	Elbou	/ loint
From where	Elbow Joint	
- , , - , ,	1- Synovial 2- Uniaxial 3- Hinge	Coronoid fossa
• Articular	The elbow joint is a composite joint formed of 2	Lateral epicondyle Medial
surfaces	parts:	Capitulum Trochlea
	1- Humero-ulnar part: the articulation is between the trochlea and trochlear notch of the ulna.	Radial tuberosity Radial tuberosity Radial tuberosity Radial tuberosity Radial tuberosity Radial tuberosity
	2- Humero-radial part: articulation is between the capitulum and the upper surface of the head of the radius.	taken and taken a
• CAPSULE	• The capsule is attached to the margins of the articular parts of bones.	Fat pads
	<ul> <li>The capsule is attached inferiorly to the</li> </ul>	Pat pads
	annular ligament so the elbow joint is	and the second is a
	continuous with the superior radioulnar joint	Synovial
	(the 2 joints together form the cubital	Anular ligament of radius
	articulation).	
Synovial	<ul> <li>It lines all the structures inside the capsule of</li> </ul>	Sacciform recess
membrane	the elbow joint EXCEPT the articular	membrane
	cartilage.(hyaline cartilage)	
	<ul> <li>Inferiorly, it is continuous with the synovial</li> </ul>	Diake: Gray's Anatomy for Students, 2nd Edition.
	membrane of superior radioulnar joint.	Diake: Gray's Anatomy for Students, 2nd Edition. Copyright © 2009 by Cauchall Uniquitore, an imprint of Elsevie; Inc. All rights reserved. Figure 7.72 Synovial membrane of elbow joint (anterior view).
• LIGAMENTS	Ulnar collateral (medial) ligament:	Ulnar
RELATED TO	- Char:	collateral
ELBOW JOINT	1- thick triangular ligament	Lateral
	closely related to ulnar nerve. 2- attached to the medial	collateral ligament
	epicondyle superiorly and	
	the medial surface of upper end of	
	ulna.	
	▼ Radial collateral <u>(lateral)</u> ligament:	EXLIG 2008
	- Char: 1- triangular ligament	
		CMMG 2005
	2- connects the lateral epicondyle to the upper	
	border of annular ligament	
Movements of	• The joint is <u>uniaxial joint</u> , so it moves around	
	one transverse axis. The movements are	- CONTRACTOR
	<mark>flexion- extension</mark> .	solation signment Unnar
	<ul> <li><u>During flexion</u> of elbow the head of radius lies</li> </ul>	Anular ligament of radius Bacolform racess
	inside the radial fossa above the capitulum, and	or synovial
	the coronoid process of ulna lies inside the	
	coronoid fossa above the trochlea.	
	<ul> <li>While in extension, the olecranon process lies</li> </ul>	aur - Janes
	inside the olecranon fossa.	
	- Flexion: This movement is done by muscles:	Hand - Hand
	1- the brachialis 2- biceps	Parameter - Meria
	3- brachioradialis	State and a set of control of the state of the state of the state of the state and the state of the stateo
	- Extension: This movement is done by muscles 1- the triceps 2- anconeus	

\$Why the elbow joint is continuous with the superior radioulnar joint? Because The capsule is attached inferiorly to the annular ligament\$

&the cubital articulation: composed of the elbow joint is continuous with the superior radioulnar joint&