



MED439



جامعة
الملك سعود
King Saud University

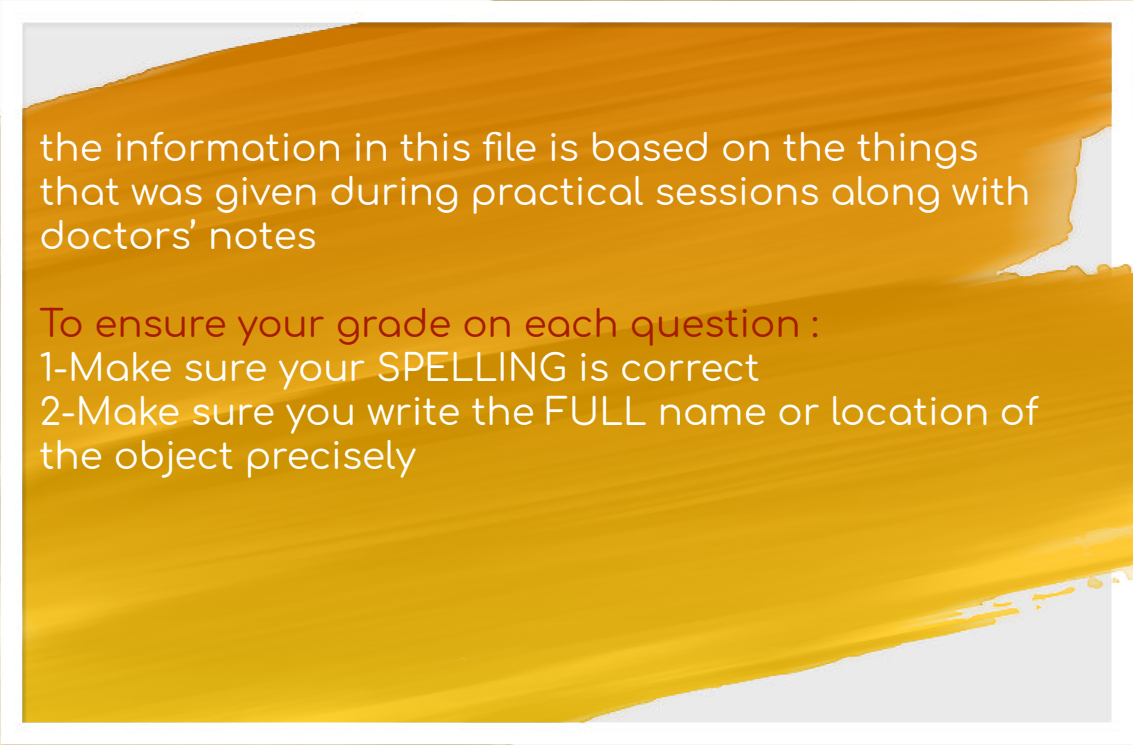


Muscles and bones of the upper limb

Musculoskeletal Block

Anatomy Practical team - Med 439





the information in this file is based on the things that was given during practical sessions along with doctors' notes

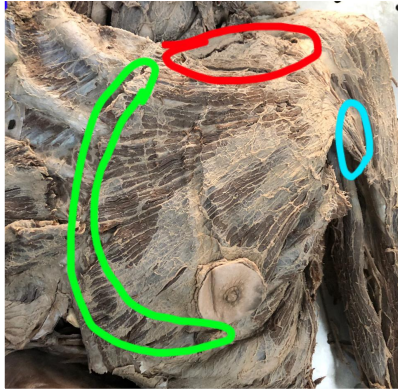
To ensure your grade on each question :

1-Make sure your SPELLING is correct

2-Make sure you write the FULL name or location of the object precisely



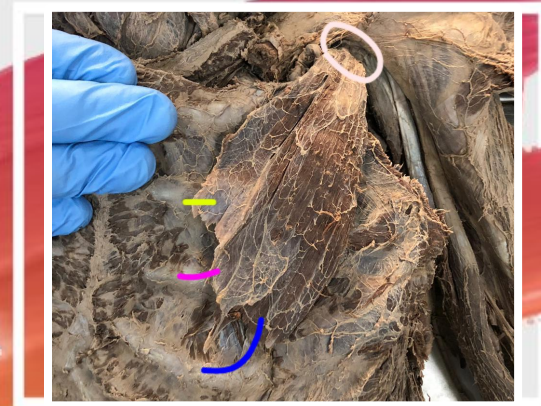
Pectoral
region



Pectoralis Major

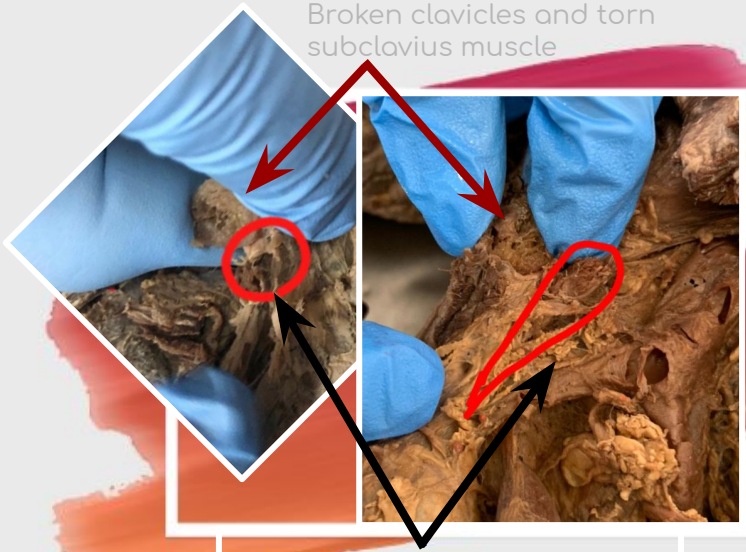
Origin	<p>clavicular head: medial ½ of the front of clavicle.</p> <p>Sternocostal head: lateral border of sternum, upper 6 costal cartilages & aponeurosis of the external oblique muscle</p>
Insertion	Lateral lip of bicipital groove of humerus
Nerve supply	<u>Lateral</u> & <u>Medial</u> pectoral nerves
Action	<ul style="list-style-type: none"> - Adduction + medial rotation of arm. - Clavicular head helps in flexion of arm (shoulder)

Origin	Ribs 3, 4, 5 close to their costal cartilages
Insertion	Coracoid process of the scapula
Nerve supply	<u>Medial</u> pectoral nerve
Action	<ul style="list-style-type: none"> - Depression of the shoulder - Drawing the ribs upwards & outwards during deep inspiration.



Pectoralis Minor

Broken clavicles and torn subclavius muscle



Subclavius

Origin	Junction of 1st rib with its costal cartilage
Insertion	Subclavian groove at middle $\frac{1}{3}$ of inferior surface of clavicle
Nerve supply	Nerve to subclavius
Action	Fixes the clavicle during movement of shoulder joint



Serratus Anterior

Origin	Upper eight ribs
Insertion	Anterior aspect of the <u>medial border</u> and <u>inferior angle</u> of scapula
Nerve supply	Long thoracic nerve
Action	<ul style="list-style-type: none"> - Draws the scapula forward - Rotates scapula outward in raising the arm above 90 degrees



Shoulder
region

Teres minor below the infraspinatus + the long head of triceps is between teres minor and major



Important	Deltoid
Origin	Lateral 1/3 of clavicle , acromion & spine of scapula
Insertion	Deltoid tuberosity of the humerus
Nerve supply	Axillary nerve
Action	<u>Anterior fibers:</u> medial rotation & flexion <u>Middle fibers:</u> Abduction (15-90) <u>Posterior fibers:</u> lateral rotation,extension All these actions of humerus

	Teres minor	Teres major
Origin	The lateral (Axillary) border of scapula	
Insertion	Greater tubercle of the humerus	Medial lip of bicipital groove of humerus
Nerve supply	Axillary nerve	Lower supscalper nerve
Action	Lateral rotation of humerus	medial rotation ,extension, adduction of humerus

كلهم لاصقين على العظم نفسه



Subscapularis

Origin Subscapular fossa of the scapula

Insertion Lesser tubercle of the humerus

Nerve supply Lower and upper subscapular nerve

Action Medial rotation

Supraspinatus

Origin Supraspinous fossa of the scapula

Insertion Greater tubercle of the humerus

Nerve supply Suprascapular nerve

Action Abduction (0-15) of humerus

Infraspinatus

Origin Infraspinous fossa of the scapula

Action Lateral rotation of humerus

Example of question:
Identify this part of bone, and what is the muscle attached to?





Muscles of the arm

Anterior of Arm



Short head

Long head

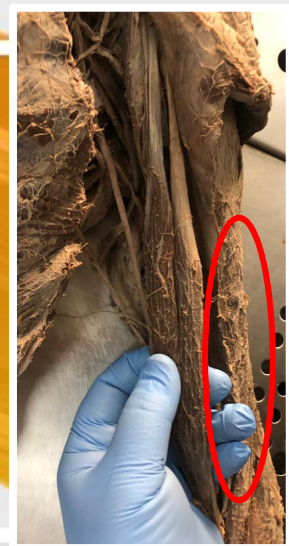
Biceps Brachii

Important



Coracobrachialis

In the same origin with short head of Biceps



Brachialis

Origin	2 heads: - long head → supraglenoid tubercle of scapula - short head → coracoid process of scapula
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Insertion	Posterior part of the radial tuberosity + into the deep fascia, medial of forearm through bicipital aponeurosis
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Nerve supply	Musculocutaneous nerve
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Action	- Strong supinator of forearm - Powerful flexor of elbow - Weak flexor of shoulder
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Origin	Tip of coracoid process of scapula
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Insertion	Middle of the medial side of humerus shaft
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Nerve supply	musculocutaneous nerve
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Action	- Flexor of shoulder - Weak adductor of arm
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Origin	Front of the lower half of humerus
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Insertion	Anterior surface of coronoid process of ulna
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Nerve supply	<u>Musculocutaneous & Radial nerves</u>
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Action	Strong flexor of the forearm
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Triceps Brachii

supraglenoid= long head of biceps
 Infraglenoid= long head of triceps



Origin	3 heads: Long head → infraglenoid tubercle of scapula Lateral head → posterior upper half of humerus shaft (above spiral groove) Medial head → posterior lower half of humerus shaft (below spiral groove)
Insertion	upper surface of the olecranon process of ulna
Nerve supply	Radial nerve
Action	Strong extensor of the elbow joint

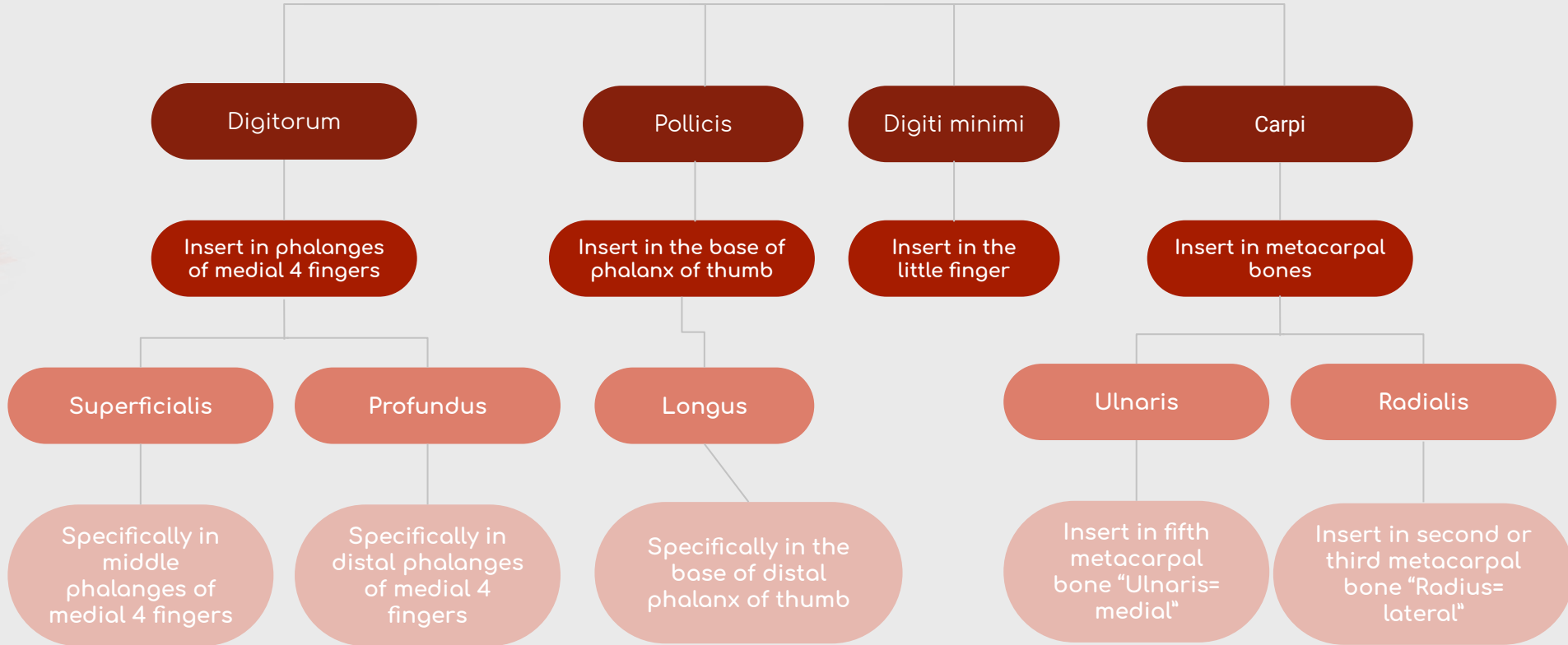
The spiral groove separates the humerus to two halves:
 above "Lateral head", Below "Medial head"



Muscles of the forearm

Notes

to memorize the insertion of the muscles



Flexor group of forearm is IMPORTANT

Muscles of the Forearm (flexors)

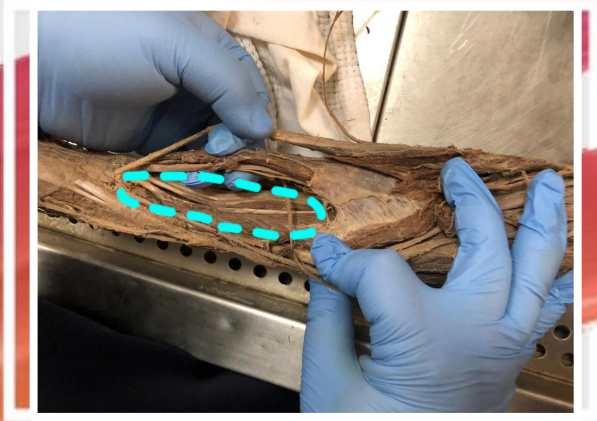
	Pronator Teres	Flexor carpi radialis	Palmaris longus	Flexor carpi ulnaris
Origin	Common flexor origin (front of medial epicondyle) → Important			
Insertion	Middle of lateral surface of radius	Base of 2nd metacarpal bone	Flexor retinaculum and palmar aponeurosis	Pisiform, hook of hamate & base of 5th metacarpal
Nerve supply	Median nerve			<u>Ulnar nerve</u>
Action	Pronation & flexion of forearm	Flexion & abduction of wrist	Flexes hand (wrist) & tightens the palmar aponeurosis	Flexion and adduction of the hand (wrist)

ما راح توصل للهاوند عشان تقدر تسوي الـ pronation

*Flexor carpi ulnaris has two heads one is at common flexor origin, the second is at the olecranon process



Muscles of the Forearm (flexors)



راح تكون تحت الأربعة
عضلات اللي انكورت في
السلايد اللي فات



Flexor digitorum superficialis

Origin	Multiple heads originating from common flexor origin, coronoid process of ulna and anterior surface of radius
Insertion	Base of middle phalanges of the medial 4 fingers
Nerve supply	Median nerve
Action	- Flexes middle & proximal phalanges of medial 4 fingers. - Flexion of hand (wrist)

Flexor digitorum profundus (deep)

Origin	In Front of ulna
Insertion	Bases of distal phalanges of medial four digits
Nerve supply	Anterior interosseous Nerve (branch of the median nerve), <u>medial half is supplied by the ulnar nerve</u>
Action	Flexes distal phalanges of medial four digits

Muscles of the Forearm (flexors) Deep



Flexor pollicis longus

Origin	In Front of radius
Insertion	Base of distal phalanx of thumb
Nerve supply	anterior interosseous nerve (branch of the median nerve)
Action	Flexes all joints of thumb

Pronator quadratus

Origin	In Front of lower ¼ of ulna
Insertion	Distal ¼ of anterior surface of radius
Nerve supply	anterior interosseous nerve (branch of the median nerve)
Action	- Pronator of forearm (primover) - Holds the 2 bones together



Not that important

Muscles of the Forearm (Extensors)

Laterally to Radial nerve

Brachioradialis → Important

Origin	Lateral supracondylar ridge of humerus
Insertion	base of styloid process of radius
Nerve supply	radial nerve
Action	flexion of forearm and midpron position

Extensor carbi radialis longus

Origin	Lateral supracondylar ridge of humerus
Insertion	base 2 metacarpal
Nerve supply	radial nerve
Action	Extends and abducts hand at wrist joint



Muscles of the Forearm (Extensors)

All arises from the common
extensor origin (front of lateral
epicondyle of the humerus)

Below ECRL

**Extensor carpi radialis
brevis:**

Insertion: Base of 3rd base
of metacarpal bone

Important



Extensor digitorum

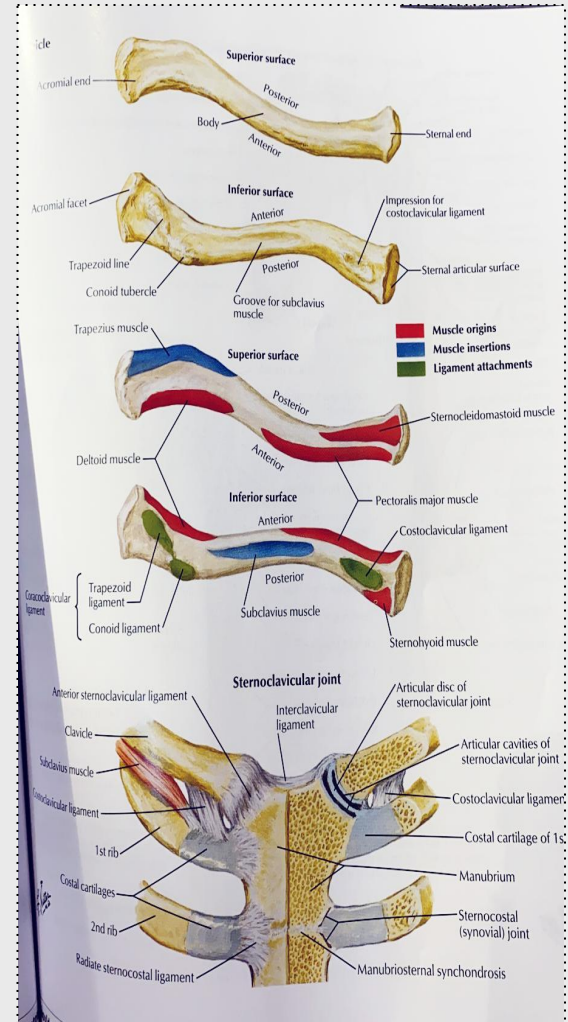
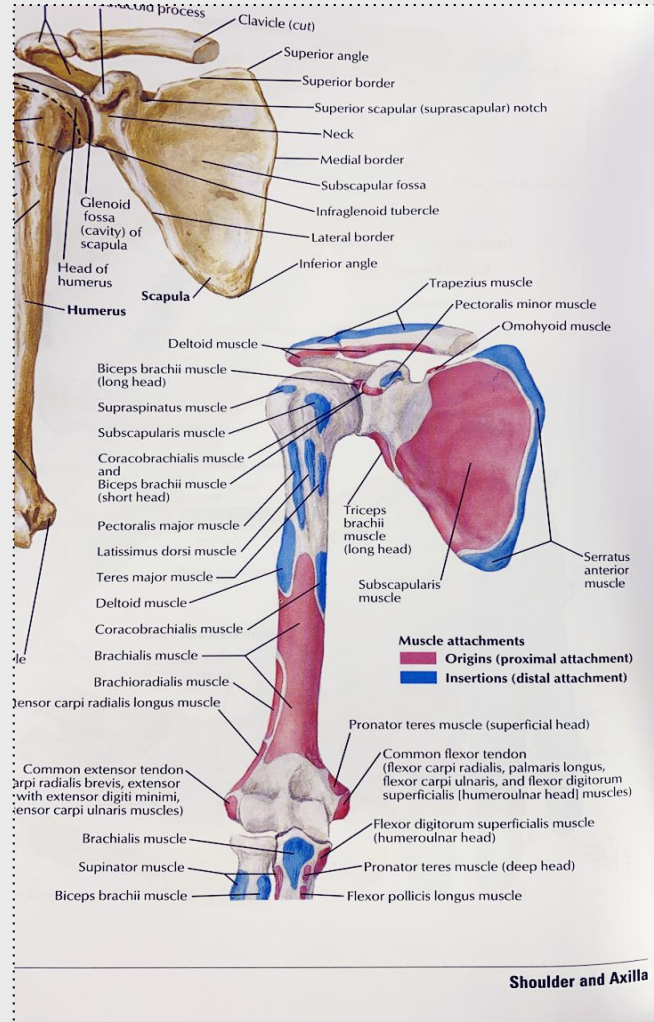
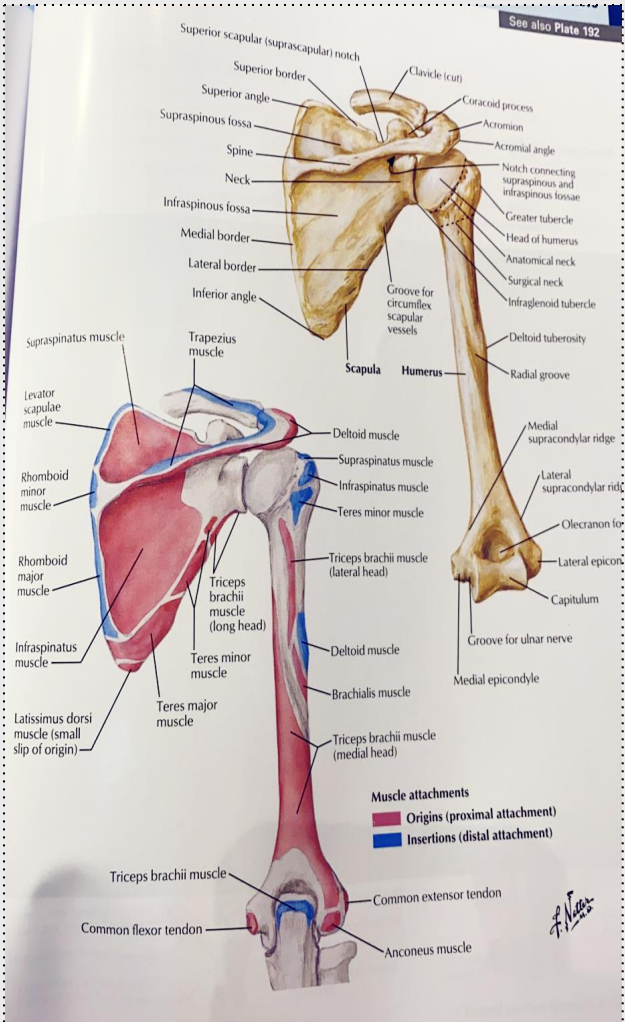
Insertion: extensor
expansion of the medial 4
fingers

Extensor carpi ulnaris
Insertion: base of 5th metacarpal
bone

Extensor digiti minimi

Insertion: extensor expansion
of the little finger

All innervated by deep branch of
radial nerve
(Posterior interosseous)



Shoulder and Axilla

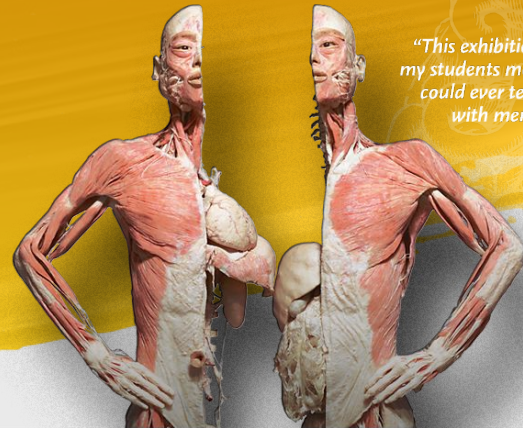
Don't stop until you are proud.

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- Arwa Alqahtani
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- Najd Alzahrani
- Mishal Althunayan
- Omar alhalabi
- Khalid Alosaimii
- **Hadi Alhemi**
- Nasser Alohal

Team Leaders:

- Renad Alhomaidi
- Bassam Alasmari



"This exhibition taught my students more than I could ever teach them with mere words."