



ANATOMY TEAM

Lecture 09

(FOREARM)

OBJECTIVES

- *At the end of the lecture the students should be able to:*

- At the end of this lecture, the student should be able to :
- List the names of the Flexors Group of Forearm (superficial & deep muscles).
- Identify the common flexor origin of flexor muscles and their innervation & movements.
- Identify supination & pronation and list the muscles produced these 2 movements.
- List the names of the Extensor Group of Forearm (superficial & deep muscles).
- Identify the common extensor origin of extensor muscles and their innervation & movements.

FOREARM

Anatomy Team 432

تنويه : هذا الملف لا يعتبر مرجع أساسي للمذاكره وإنما هو للمراجعة فقط ، المرجع الاساسي هو السلايد ولا يوجد أي اختلاف بين سلايد الاولاد والبنات

SOME IMPORTANT NOTES:

- The common Flexor origin is **front of medial epicondyle** of humerus and The common Extensor origin is **front of lateral epicondyle** of the humerus.
- The function of interosseous membrane :
 - It's a strong sheath connecting (radius and ulna) to allow movement of Pronation and Supination.
 - Gives attachment "origin" of deep muscles.
- Flexor digitorum superficialis is divide into 4 tendinous to form medial 4 fingers and it end at the base of middle phalanges
- Flexor Digitorum Profundus ends at the base of distal phalanges of medial 4 digits (finger)
- The flexor group muscles form (fleshy masses)in proximal and become (tendinous) in distal of forearm.
- All of superficial flexor muscles supplied by median nerve except one flexor carpi ulnaris (FEU)
- All of superficial flexor muscles cross the wrist joint except one pronator teres (PT)
- The action of flexor carpi radials is flexion of (elbow and hand "or wrist ")and adduction of (hand)
- The insertion of palmaris longus into the flexor retinaculum and plamar **aponeurosis (triangular in shape)**

- **Deep flexor** do not take origin from common flexor origins.
- Flexor Digitorum Profundus → above ulna
- Flexor pollicis longus → above radius
- Pronator Quadratus(the place of watch)→ origin from ulna and end by radius.
- Biceps brachii is **powerful supinator** muscle and it is make a screwing movement.
- **All Superficial extensors muscles cross the wrist except brachioradialis**
- **Supinator** : becomes active in supination of the **extended** arm.
- **Biceps brachii** : becomes active in supination of the **flexed** arm.

فقط عند الأولاد

NB. Brachioradialis put the forearm in midprone-supine position, (initiates pronation and supination).

Quick Review:

- The **forearm** extends from:
 - elbow to wrist
- The **interosseous membrane** allows movement of
 - Pronation and Supination while the two bone are connected together
- **Superficial flexor group of the forearm consist of :**
 - **Pronator teres**
 - **Flexor carpi radialis**
 - **Palmaris longus**
 - **Flexor carpi ulnaris**
- What is the common flexor origin ?
 - **front of medial epicondyle**
- **What is the common extensor origin ?**
 - **front of lateral epicondyle**
- All of **superficial flexor muscles** supplied by median nerve **except** one
 - flexor carpi ulnaris (FEU)
- The action of **Flexor Carpi Radialis** is
 - **Flexion & abduction of the hand**
- **The insertion of Flexor Pollicis Longus** is
 - **Base of distal phalanx of thumb**
- **What is the intermediate Flexors that take a part from** anterior surface of the radius :

- **It is Flexor Digitorum superficialis**
- What is the powerful supinator muscle
 - It is Biceps brachii
- **Superficial Lateral group of posterior compartment of forearm consist of**
 - **Brachioradialis**
 - **Extensor carpi radialis longus**
- **All Superficial extensors muscles cross the wrist except**
 - **Brachioradialis**
- **All Superficial extensors muscles supplied by deep branch of radial nerve except**
 - A, anconeus
 - B, Brachioradialis
 - E, Extensor carpi radialis longus

✘ **IMPORTANT LINKS :**

- http://anatomy.uams.edu/anatomyhtml/muscles_upperlimb.html
- <http://www.rad.washington.edu/academics/academic-sections/msk/muscle-atlas/upper-body>
- http://www.med.umich.edu/lrc/coursepages/m1/anatomy2010/html/musculoskeletal_system/forearm_questions.html

Quiz:

1) What is the powerful supinator muscle:

- A. Pronator teres
- B. Extensor digitorum
- C. Brachioradialis
- D. Biceps brachii

2) Which one from the below is insertion from Base of distal phalanx of thumb:

- A. Pronator Quadratus
- B. Flexor Pollicis Longus
- C. Flexor Digitorum Profundus
- D. Flexor Digitorum Superficialis

3) What is the action of Flexor Carpi Ulnaris :

- A. Flexion and adduction of the hand.
- B. pronation & flexion of hand.
- C. Flexion & abduction of the hand.
- D. Extends and abducts hand at wrist joint.

4) What is the origin of Brachioradialis :

- A. Medial supracondylar ridge of humerus.
- B. Lateral supracondylar ridge of humerus.
- C. superior radioulnar joints.
- D. inferior radioulnar joints.

5) The Common Extensor Origin is

- A. front of lateral epicondyle
- B. front of medial epicondyle
- C. back of medial epicondyle
- D. back of lateral epicondyle

6) Deep extensor group has :

- A. 2 to thumb+ 2 to index + supinator
- B. 1 to thumb+ 3 to index + supinator
- C. 3 to thumb+ 1 to index + supinator
- D. 3 to thumb+ 1 to index + Pronator

7) Muscles produce supination are

- A. Pronator teres and Pronator quadratus.
- B. Extensor carpi ulnaris and Anconeus.
- C. Flexor Digitorum Profundus and Flexor Pollicis Longus.
- D. Biceps brachii and Supinator.

8) All Superficial extensors arises from the common extensor origin,(front of lateral epicondyle of the humerus), EXCEPT

- A. 2 (BR & ECRL)
- B. 3(**ECRL**, BR& **ECU**)
- C. **2(ECU& BR)**
- D. **1(BR)**

9) All back muscles of forearm are supplied by posterior interosseous nerve except

- A. **EPL** by Radial nerve
- B. ABE by Radial nerve.
- C. **EI** by ulnar nerve.
- D. **EPL** by ulnar nerve.

10) **Which muscle is related to common flexor origin ?**

- A. Flexor digitorum profundus.
- B. Flexor pollicis longus.
- C. Pronator quadratus.
- D. Pronator teres.

11) Which muscle is supplied by median nerve?

- a. Anconeus.
- b. Brachioradialis.
- c. Extensor carpi radialis longus.
- d. Flexor digitorum superficialis.

12- Person fixes the bulb (lamp) in the roof of his room, his arm is flexed (he move his hand from right to left) which the main muscle produce supination in this situation:

- a- Supinator
- b- Biceps brachii
- c- pronator quadratus
- d- Brachioradialis

13- Man open the lock of the door by right hand, he use the Biceps brachii muscle to open it , which movement occurs:

- A- Supination
- B- pronation
- C- Inversion
- D- Eversion

14- Tennis elbow injury usually occurs at:

- A- front of medial epicondyle
- B- Lateral supracondylar
- C- medial supracondylar
- D- front of lateral epicondyle

N.Q	ANSWER
1	D
2	B
3	A
4	B
5	A
6	C
7	D
8	A
9	B
10	D
11	D
12	B
13	A
14	D

GOOD LUCK ;)