

**The University of Jordan  
Faculty Of Medicine  
Anatomy Department**



# **Muscles of the upper limb**

**By**

**Dr. Ahmed Salman**

**Associate Professor of Anatomy**

REED ONLY

# Muscle Groups

---

- 1- Muscles connecting Upper Limb with Thoracic Wall (Muscles of pectoral region)
- 2- Muscles connecting Upper Limb with Vertebral column (Back muscles)
- 3- Muscles connecting Scapula with Humerus (Muscles of shoulder region)
- 4- Muscles of The arm (Anterior & Posterior)
- 5- Muscles of The Forearm (Anterior & Posterior)
- 6- Muscles of Hand

# Muscles connecting Upper Limb with Thoracic Wall

## **Muscles of the pectoral region**

# Pectoralis Major

## Origin

### Clavicular head:

Anterior border of medial 2/3 of clavicle.

### Sternocostal head:

- Anterior surface of the sternum.
- The upper 6 costal cartilages.

## Insertion

Lateral lip of the bicipital groove .

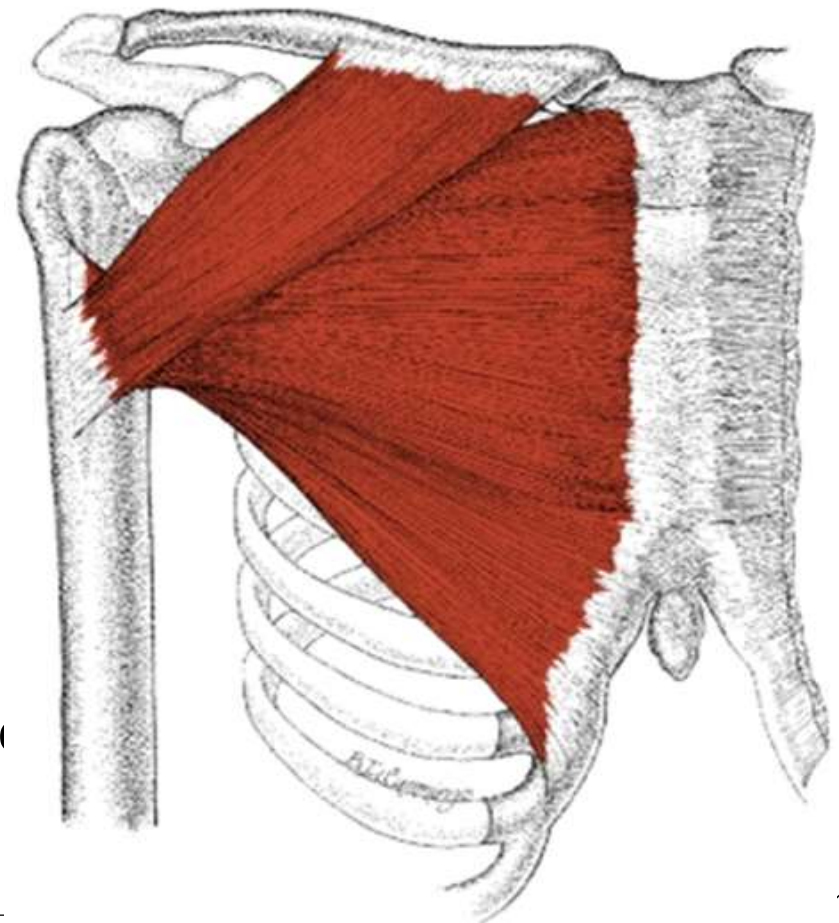
## Nerve supply:

Medial and lateral pectoral nerves

## Action:

- 1-Adduction and medial rotation of the arm.
- 2- flexion of the arm.

## Pectoralis Major



# Pectoralis Minor

## Origin

From outer surfaces of 3rd , 4<sup>th</sup> and 5<sup>th</sup> ribs close to their costal cartilages

## Insertion

Coracoid process of the scapula.

## Nerve supply:

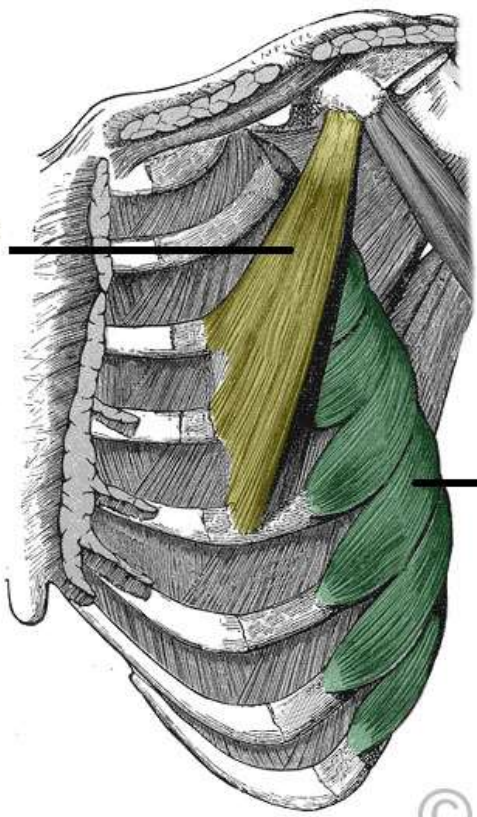
Medial pectoral nerve

## Action:

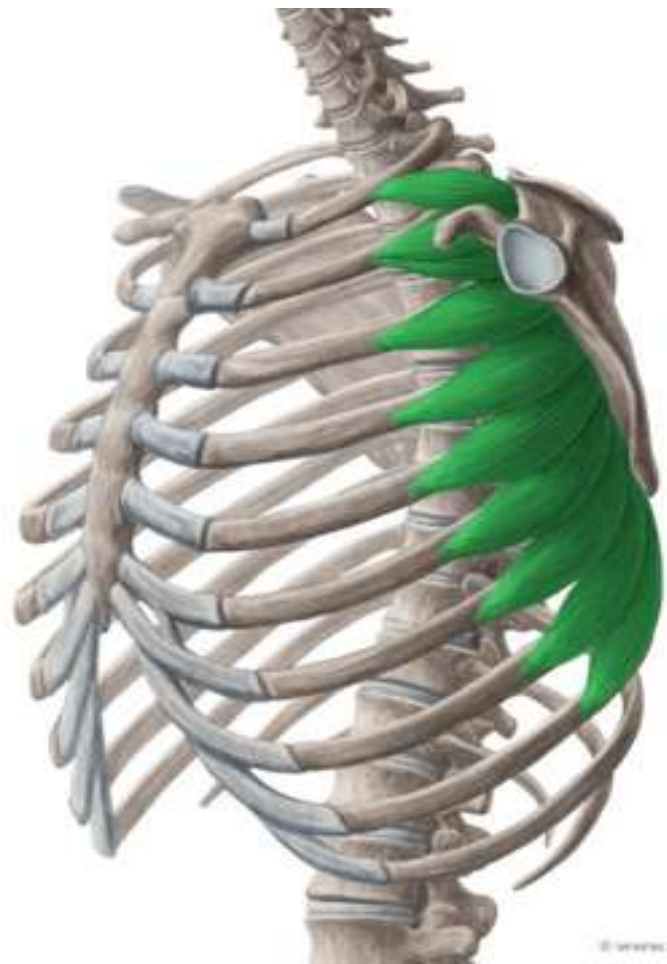
- Protraction of the scapula.
- Depresses the shoulder



**Pectoralis minor**



**Serratus anterior**



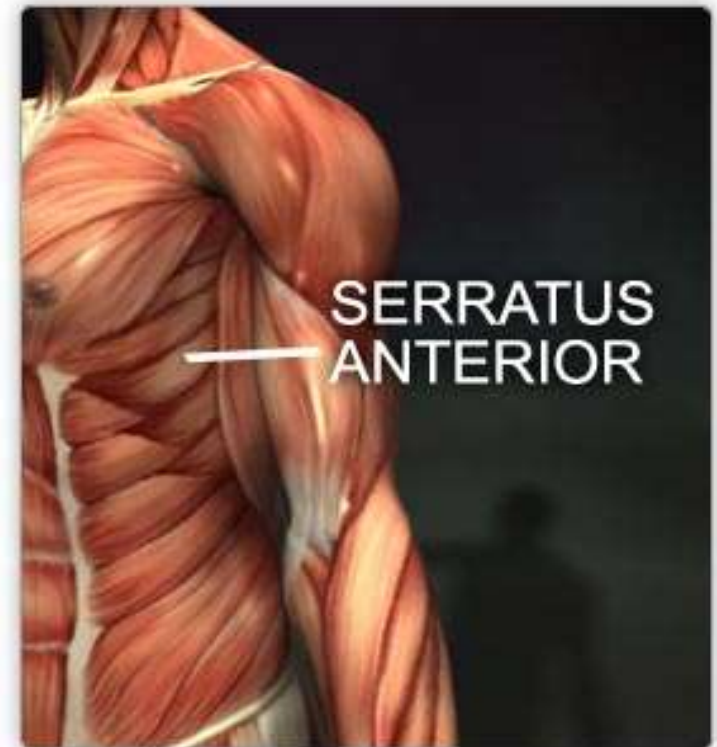
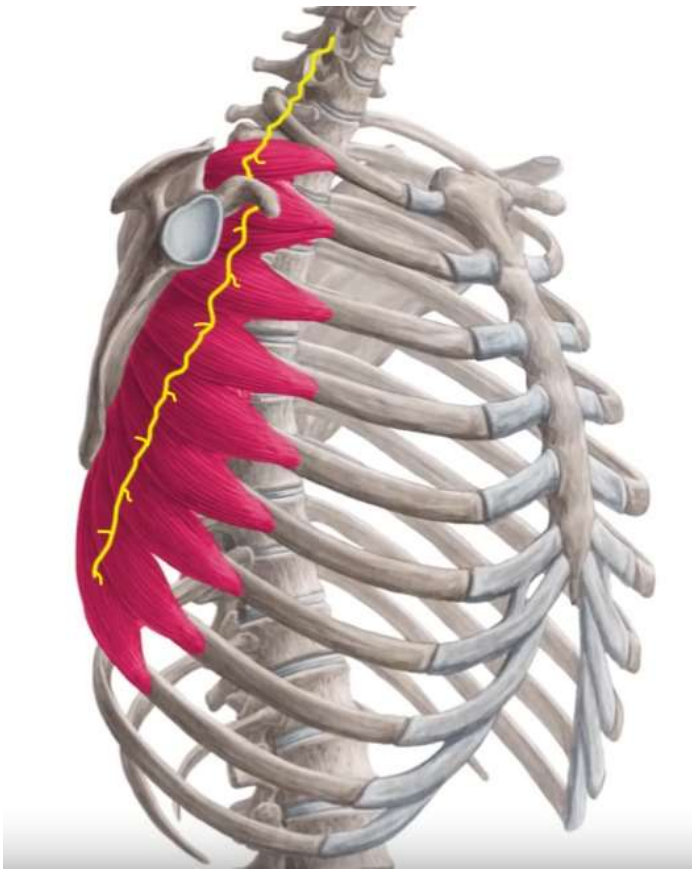
## Serratus Anterior

### **Nerve supply:**

Nerve to serratus anterior (long thoracic nerve)

### **Action:**

- Protraction of the scapula.
- Rotate the scapula upward during raising the arm above the head.



# Serratus anterior Paralysis



**Winging of Scapula**



# Muscles connecting Upper Limb with Vertebral column

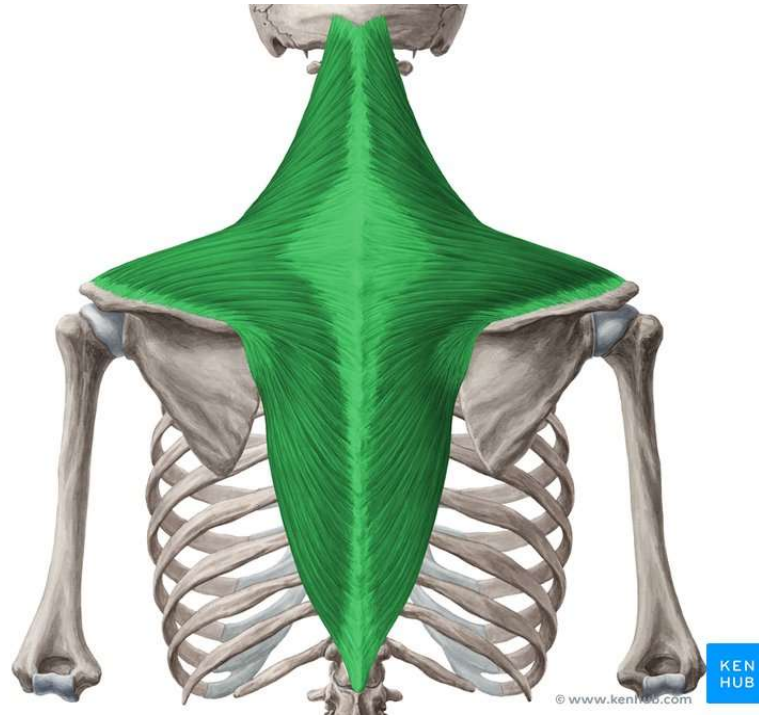
## Trapezius

### **Nerve supply:**

Spinal accessory Nerve

### **Action**

Elevates of the shoulder



**Muscles connecting Scapula with Humerus  
(Muscles of the shoulder)**

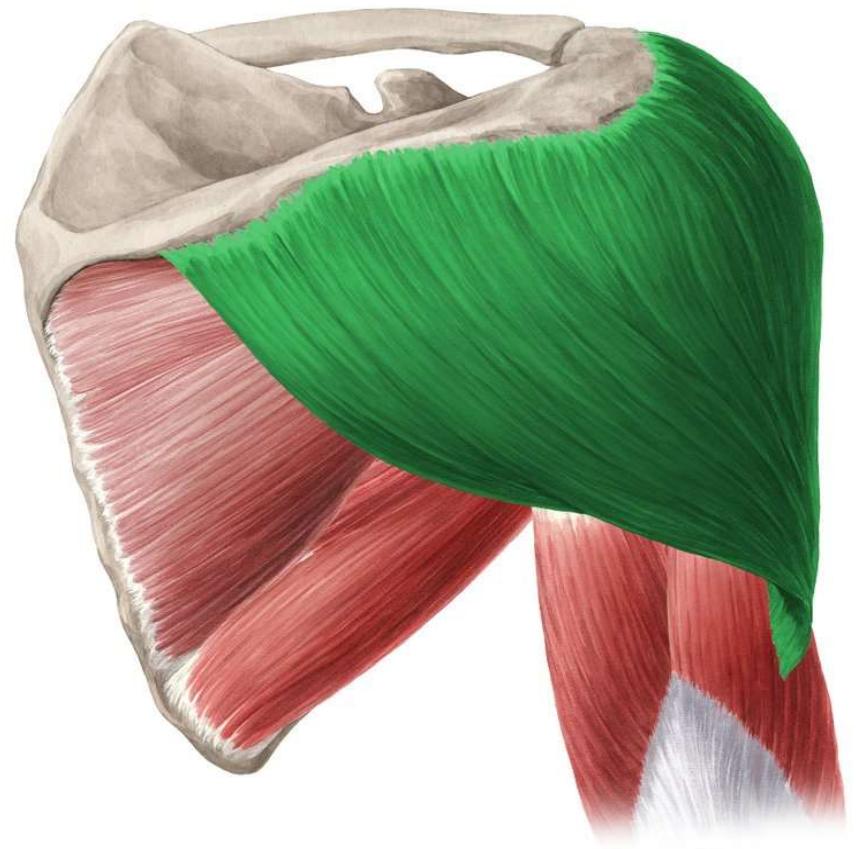
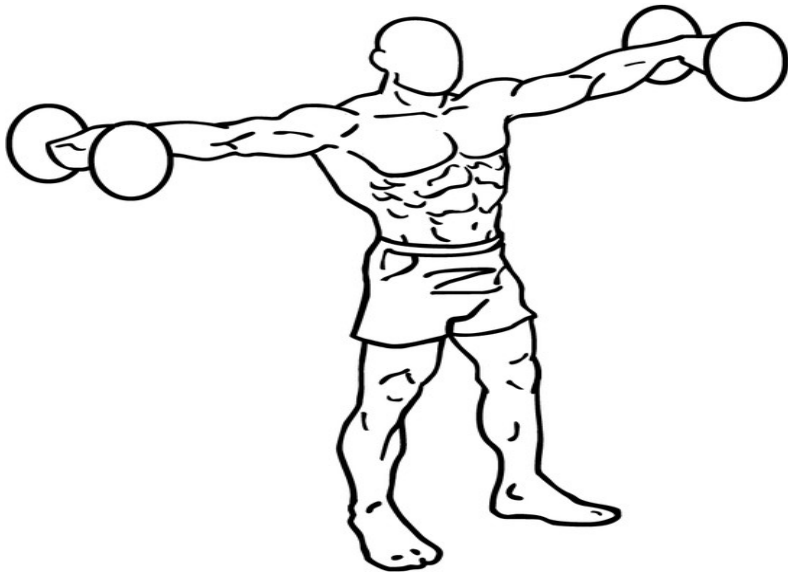
## Deltoid

### **Nerve supply:**

Axillary nerve .

### **Action:**

**Middle** fibers Abductor of the arm ( $15^{\circ}$ - $90^{\circ}$ ).



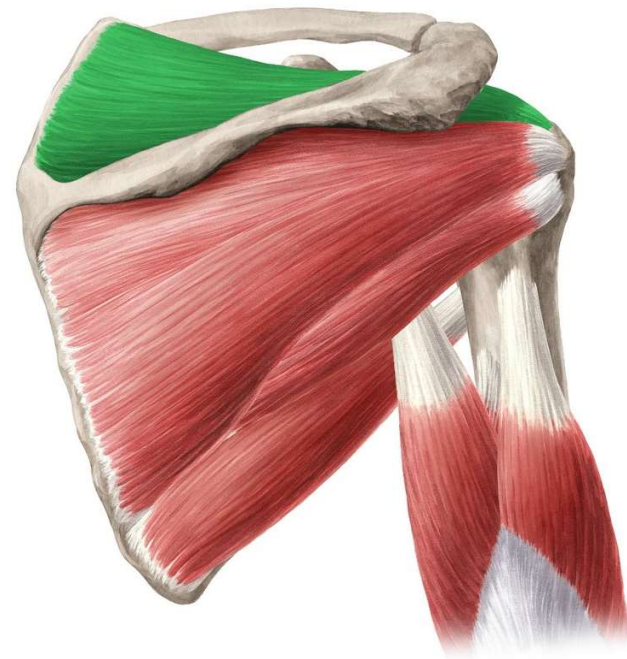
## Supraspinatus

**Nerve supply:**

Suprascapular nerve .

**Action:**

Initiates abduction of the arm (from 0-15°)



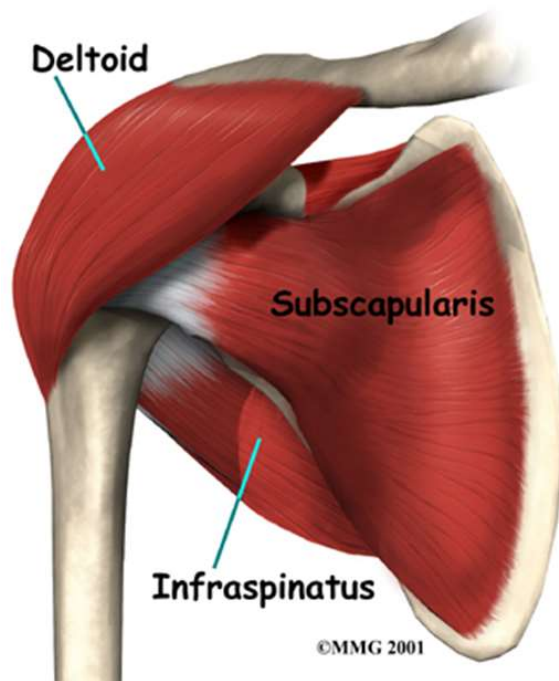
## Subscapularis

### **Nerve supply:**

Upper and lower subscapular nerves.

### **Action:**

Adduction and medial rotation of the arm.





## **IMPORTANT NOTICE**

Regarding the muscles of the arm and the forearm

- Anterior muscles are flexors
- Posterior muscles are extensors

# Muscles of The Arm

## **Front (BBC)**

- 1-Corachobrachialis
- 2- Biceps Brachii
- 3- Brachialis

**All are supplied by Musculocutaneous nerve, and they are flexors**

## **Back**

- 1- Triceps

**Is supplied by radial nerve , and it is extensor**



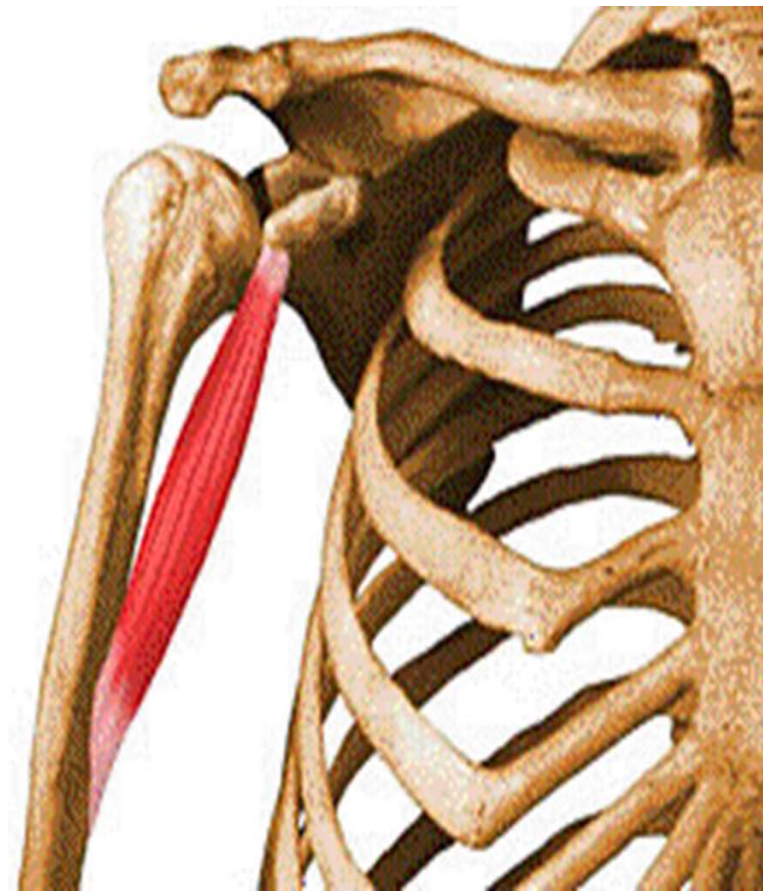
# Coracobrachialis

## **Nerve supply:**

Musculocutaneous nerve .

## **Action:**

Flexion of the arm.

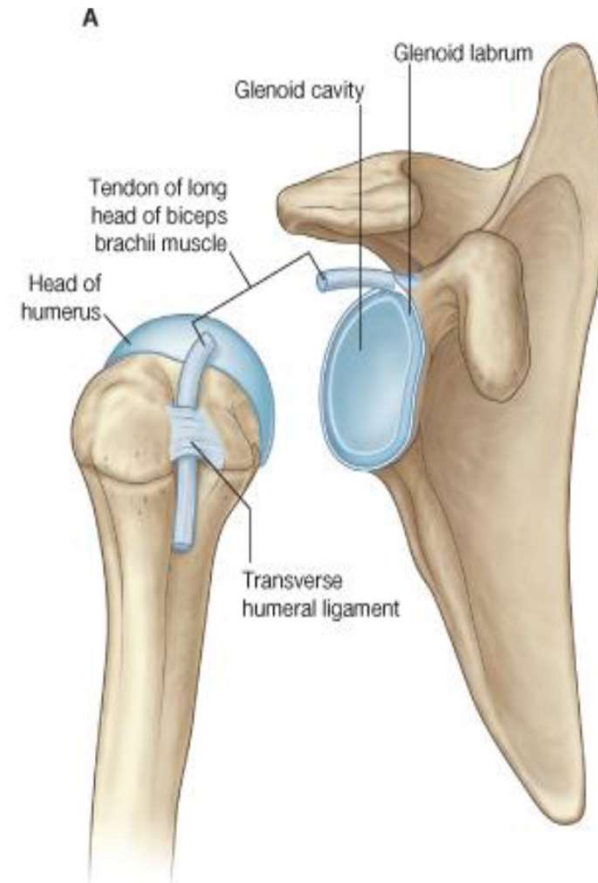
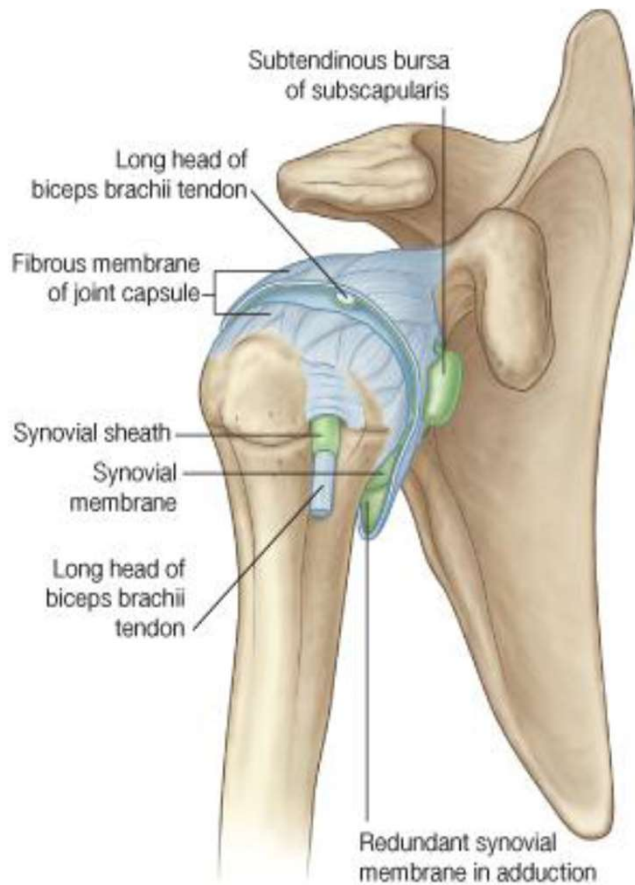


# Biceps brachii



## 1-Short (medial) head

## 2-Long (Lateral) head (*within the capsule of the shoulder joint*)



**Nerve supply:**

Musculocutaneous nerve .

**Action:**

1. Flexion of the arm
2. Flexion of the elbow
3. Supinator of the semi-flexed forearm



# Brachialis

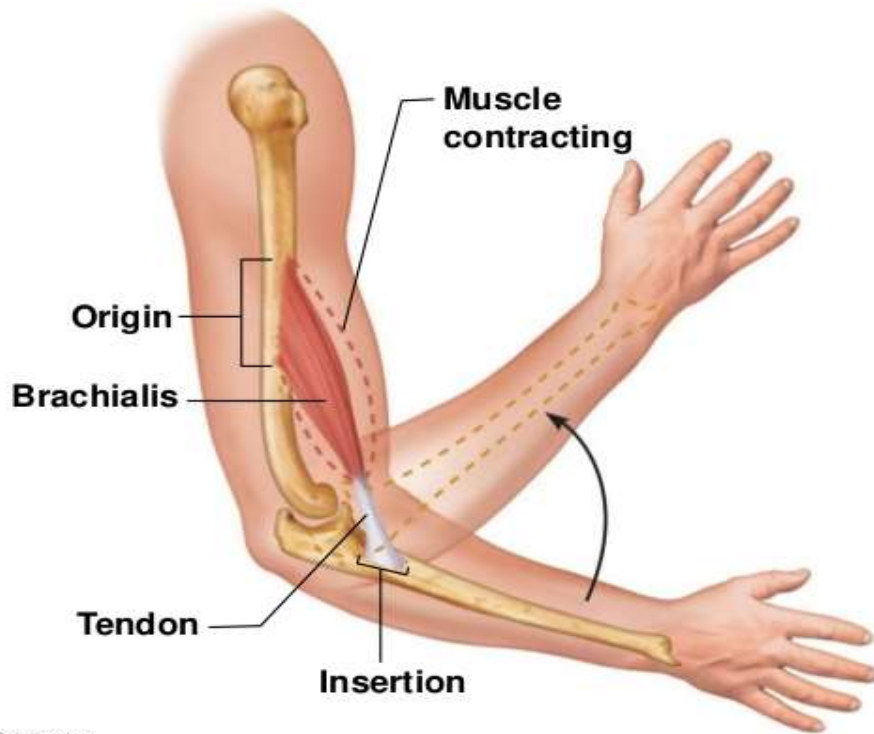
## Nerve supply:

Musculocutaneous nerve .

Its lateral fibers are supplied by the rac

## Action:

Main flexor the forearm.



## Triceps brachii

**It has 3 heads**

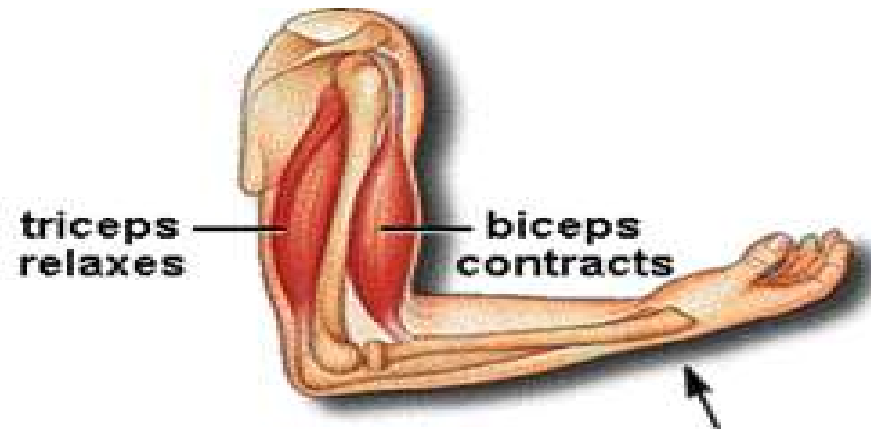
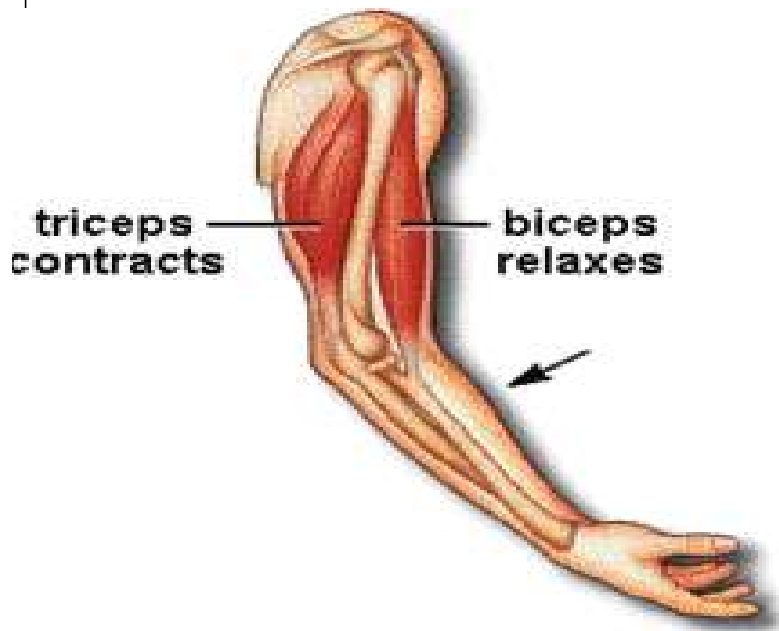
**Long , Lateral and Medial heads:**

**Nerve supply:**

Radial Nerve.

**Action:**

**Main Extensor the forearm.**



## Muscles of Anterior compartment of the forearm

### **Superficial**

- 1- Pronator teres
- 2- Flexor carpi radialis
- 3- Palmaris longus
- 4- Flexor carpi ulnaris

### **Intermediate**

- 1- Flexor digitorum superficialis

### **Deep**

- 1- Flexor digitorum Profundus
- 2- Flexor pollicis longus
- 3- Pronator Quadratus

**REED ONLY**

## Insertion

- ❖ Carpi means muscle attached to carpal or metacarpal bone
- ❖ Digitorum means inserted into the medial four fingers
- ❖ Pollicis means inserted into the thumb

## Action

The function is mainly flexion / pronation

Radialis : Abduction of the hand

Ulnaris : Adduction of the hand

## Nerve Supply

All **superficial and intermediate muscles** are supplied by

***Median nerve***

**EXCEPT** (Flexor carpi ulnaris ) by ***Ulnar nerve***



**Nerve supply:**

Median Nerve.

**Action:**

1. Pronation of the forearm.

**Pronator teres**



**Flexor carpi radialis**

**Nerve supply:**

Median Nerve.

**Action:**

1-Flexion of the wrist joint

2- Abduction of the hand



## Flexor digitorum superficialis

### Nerve supply:

Median Nerve.

### Action:

- 1-Flexion of the of the medial 4 fingers
- 2-Flexion of the wrist.

## Flexor carpi ulnaris

### Nerve supply:

Ulnar Nerve.

### Action:

- 1-Flexion of the wrist joint.
- 2-Adduction of the hand .



## Pronator Quadratus

### Action:

**It is the main pronator of the forearm.**



## Muscles lateral and Posterior

### Lateral compartment

1. Brachioradialis
2. Extensor carpi radialis longus.

**SUPPLIED BY RADIAL NERVE**

### Posterior compartment

#### Superficial

1. Extensor carpi radialis brevis.
2. Extensor digitorum.
3. Extensor digiti minimi.
4. Extensor carpi ulnaris.

**SUPPLIED BY deep branch of radial nerve**

#### Deep

1. Supinator
2. Abductor pollicis longus.
3. Extensor pollicis brevis.
4. Extensor pollicis longus.
5. Extensor indicis.

**REED ONLY**

# Brachioradialis

## **Nerve supply:**

Radial Nerve.

## **Action:**

Flexes the elbow joint when the forearm is in the midprone position.



## Extensor carpi radialis longus

**Nerve supply:**

**Radial Nerve.**

**Action:**

1. Extension of the wrist.
2. Abduction of the hand

## Extensor carpi radialis Brevis

**Nerve supply:**

**Deep branch of Radial Nerve.**

**Action:**

1. Extension of the wrist.
2. Abduction of the hand.



## Extensor Digitorum

### Nerve supply:

Deep branch of Radial Nerve.

### Action:

- 1.It extends the medial 4 fingers.
- 2.It helps in extension of the wrist.



## Extensor Carpi Ulnaris

### Nerve supply:

Deep branch of Radial Nerve.

### Action:

- 1.Extension of the wrist.
- 2.Adduction of the hand.



Thank You