

# Muscular System

## Head, Neck and Trunk Muscles

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# Muscles of the Neck

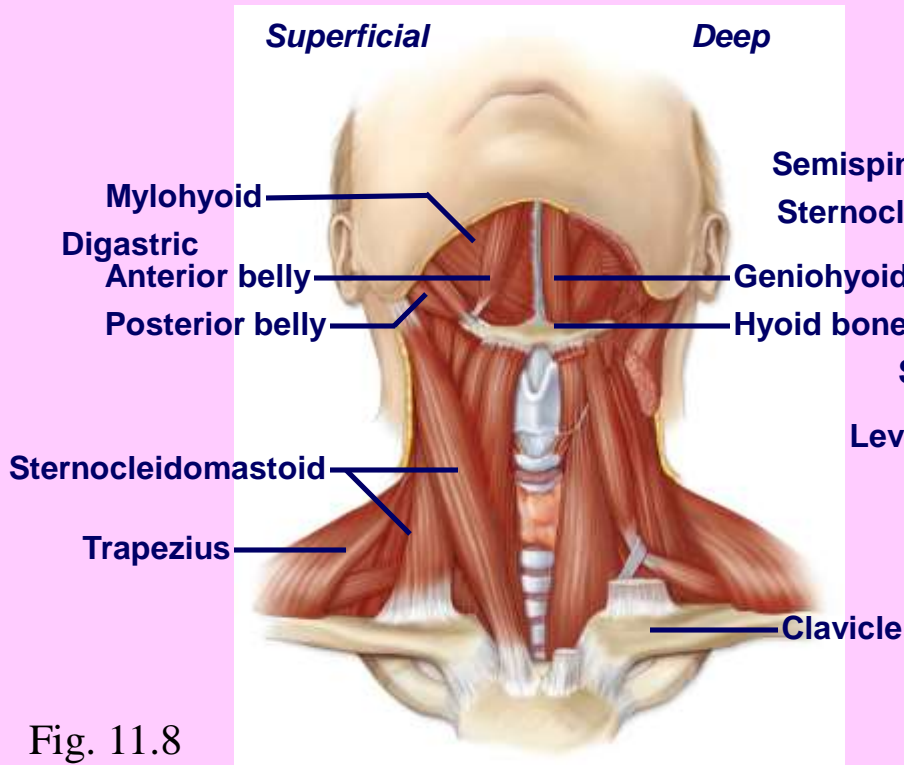


Fig. 11.8

## Anterolateral Neck Muscles

- Sternocleidomastoid
  - One or both may contract

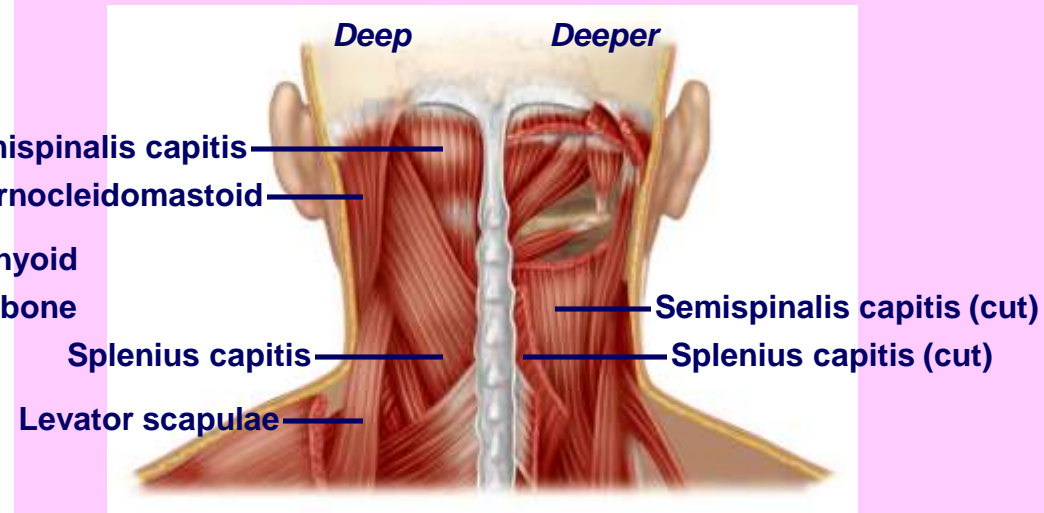


Fig. 11.10

## Posterior Neck Muscles

- Semispinalis capitis, Splenius capitis, Trapezius

# Muscles of Facial Expression

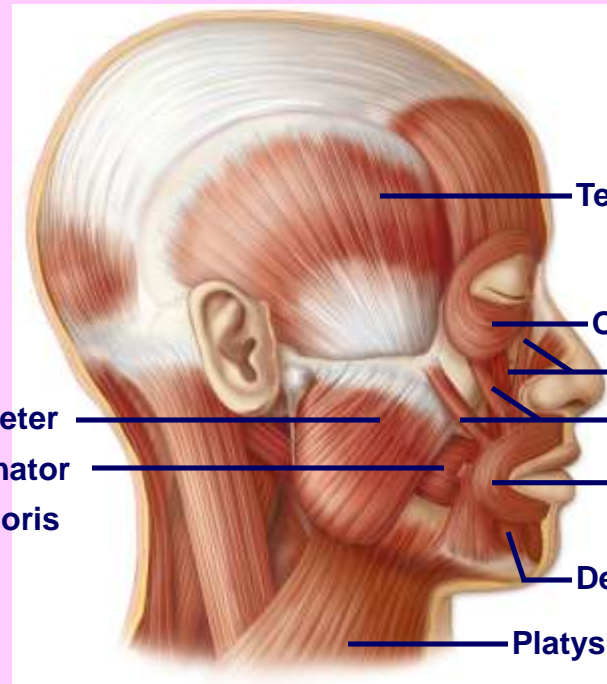
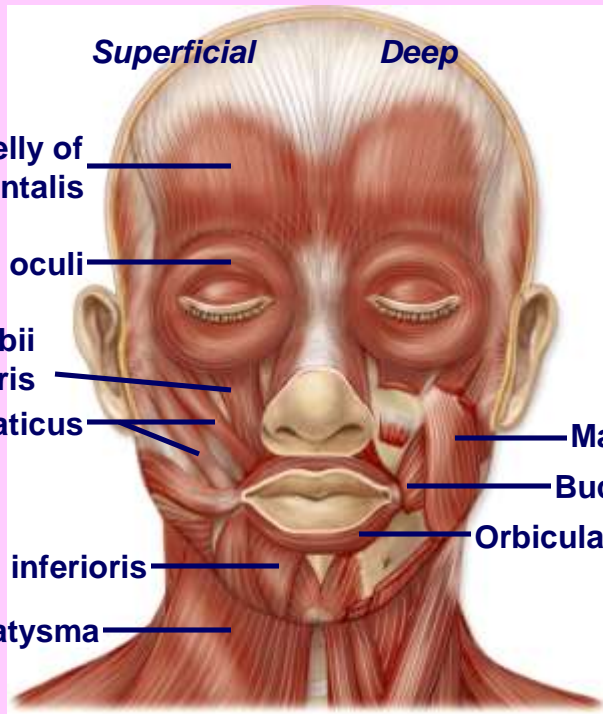


Fig. 11.2

## Elevators

- Levator labii superioris, Occipitofrontalis, Zygomaticus

## Depressors

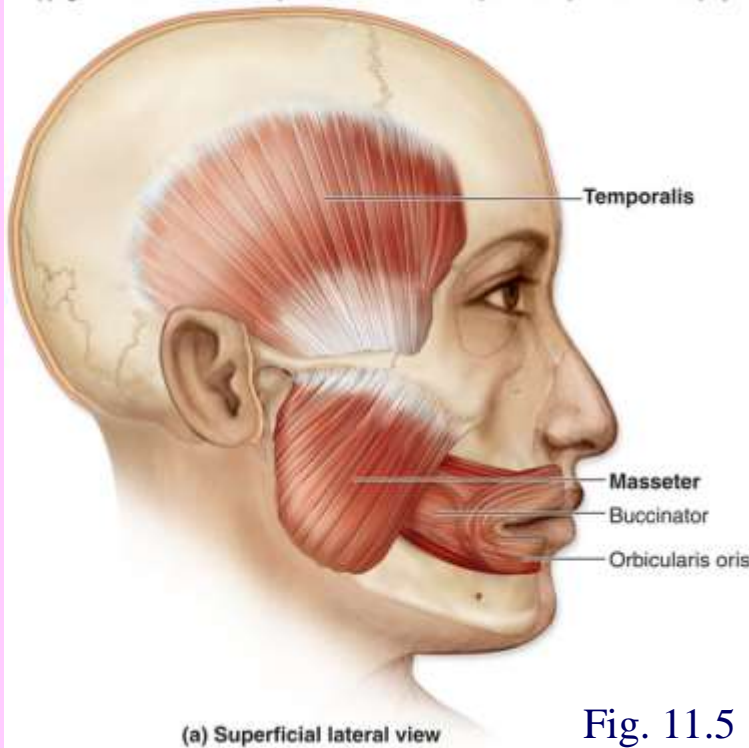
- Depressor labii inferioris, Platysma

## Other actions

- Buccinator, Orbicularis oculi, Orbicularis oris

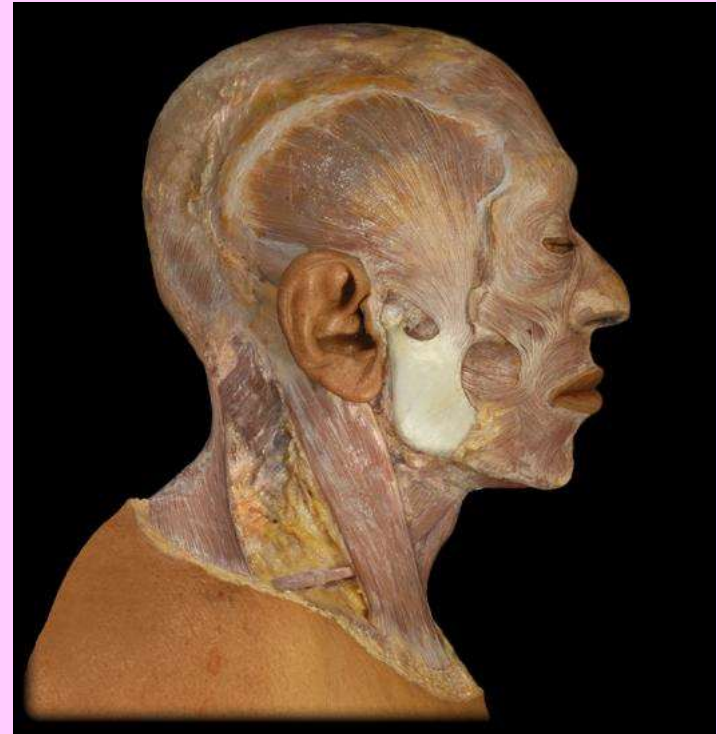
# Muscles of Mastication

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## Major Muscles

- Temporalis and Masseter



## Temporalis:

Origin - temporal lines of parietal

Insertion - coronoid process

## Masseter:

Origin - zygomatic arch

Insertion - lateral side of mandible

# Hyoid Muscles

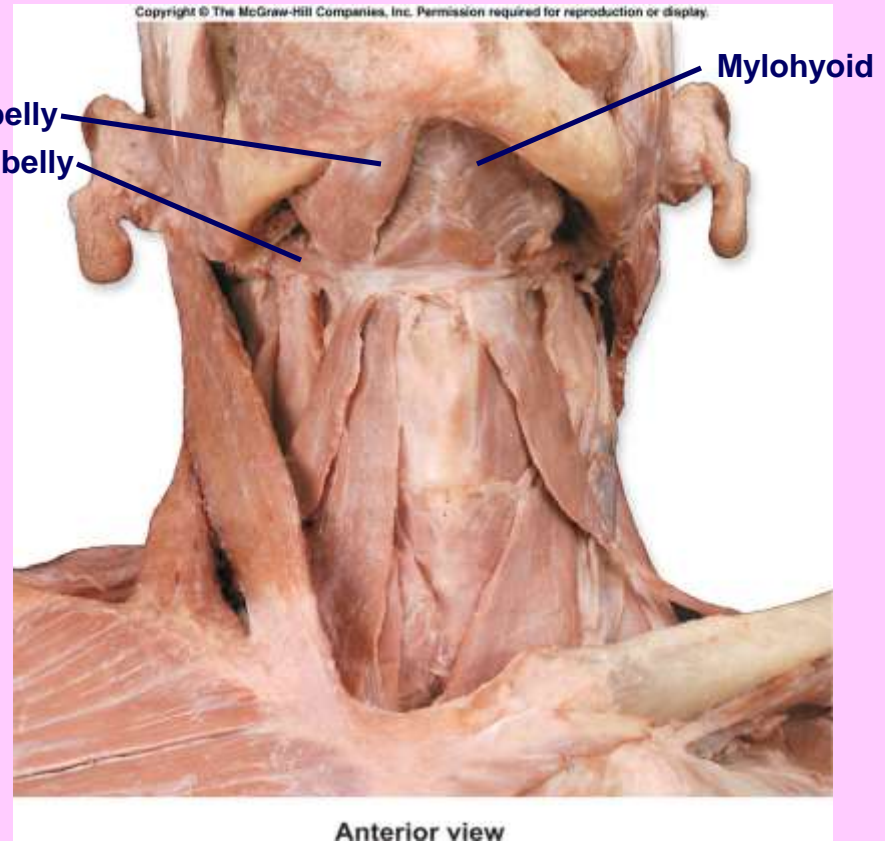
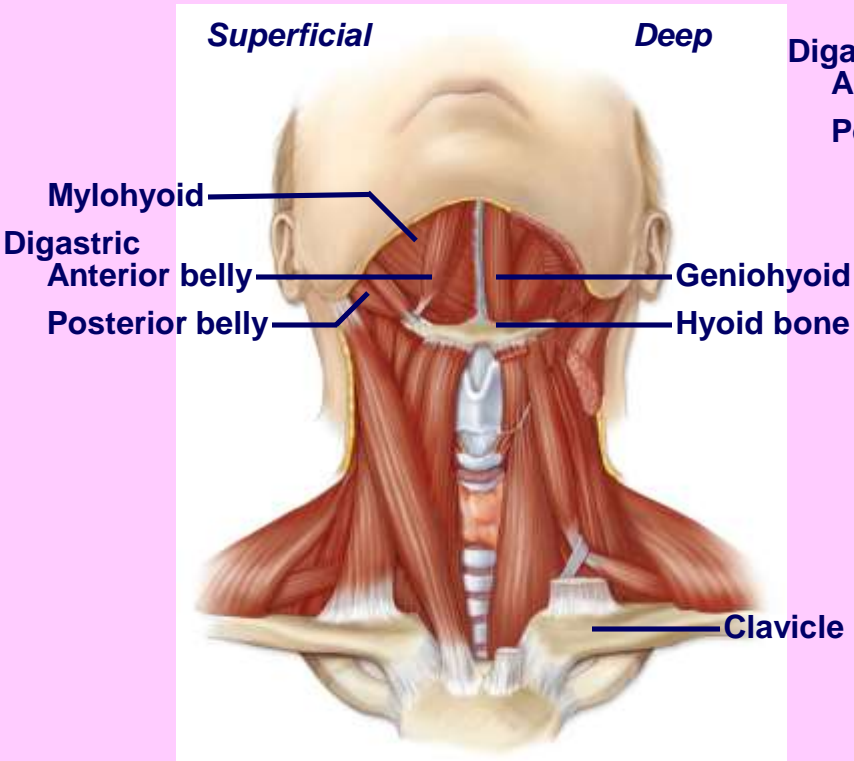
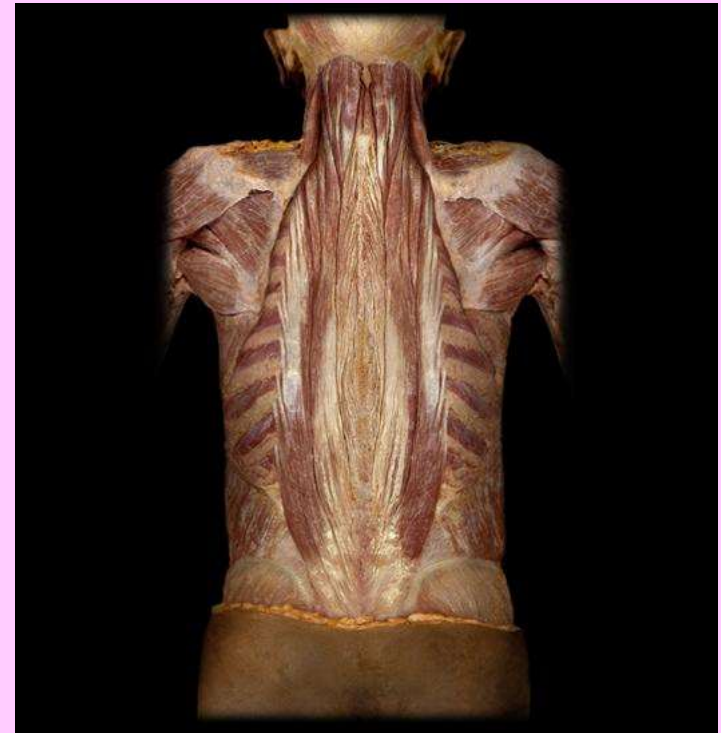
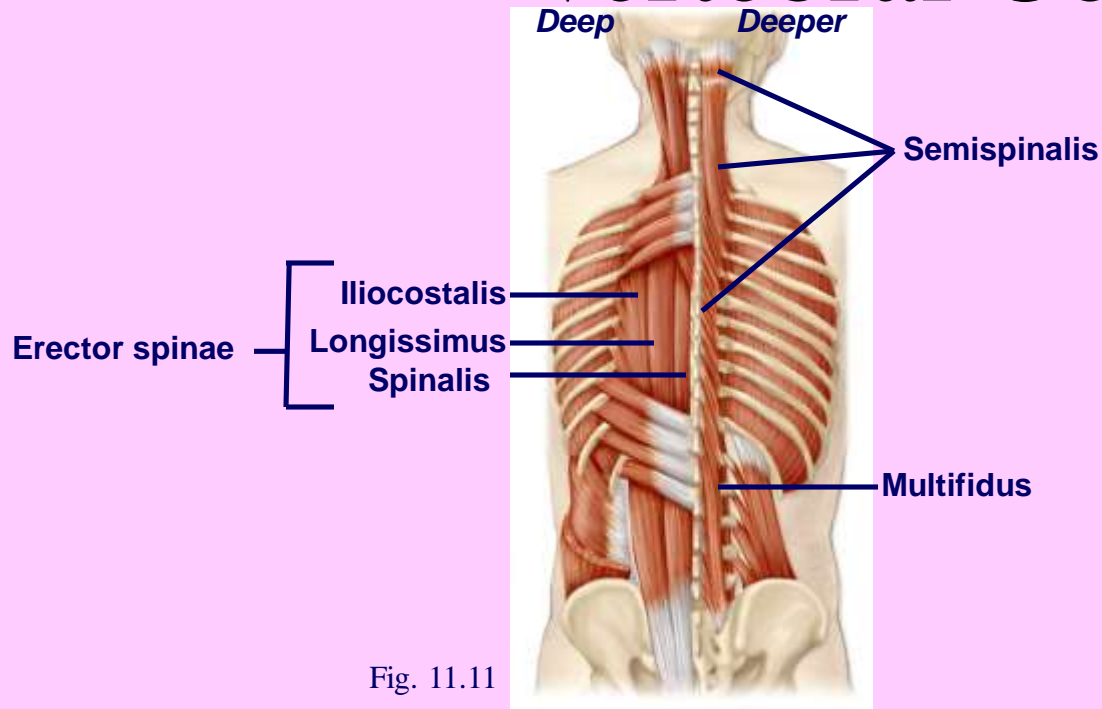


Fig. 11.8

## Actions of hyoid muscles

- move mandible and hyoid

# Trunk Muscles - Muscles of Vertebral Column



Superficial:

- Erector spinae (Iliocostalis, Longissimus, Spinalis), Semispinalis, and Multifidus

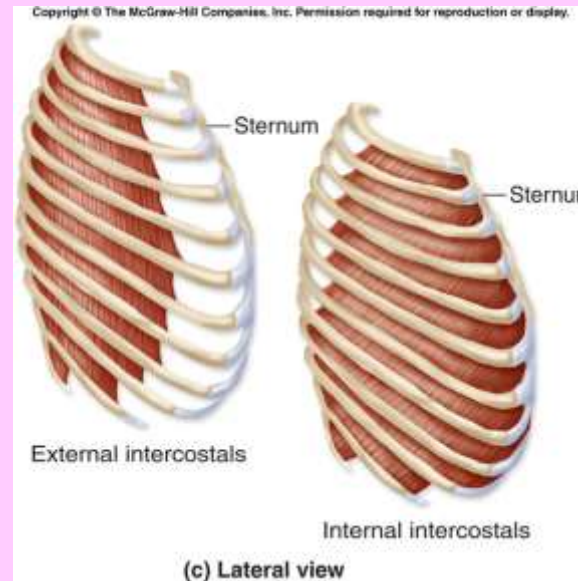
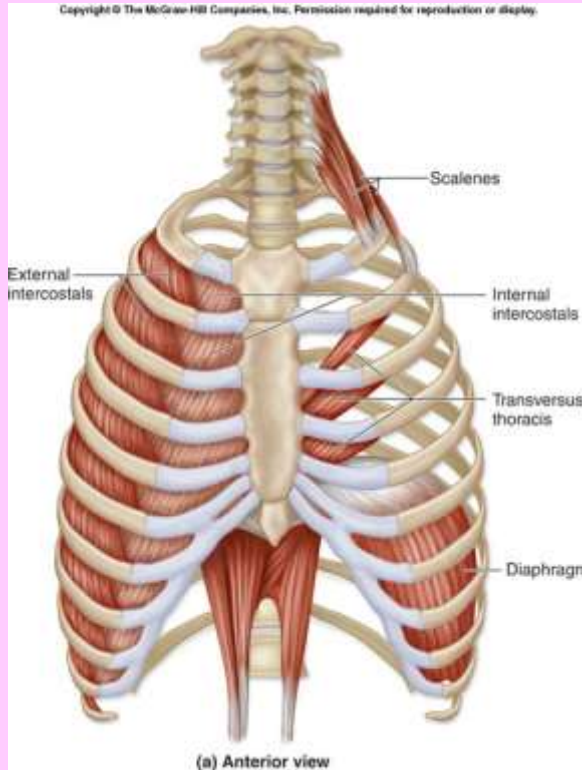
Deep:

- Interspinalis

Actions:

- Extension, rotation, lateral flexion of the back

# Muscles of Respiration



## Inspiration:

- Diaphragm is primary muscle of inspiration (depresses floor of thoracic cavity)
- External intercostals elevate ribs

## Expiration:

- Internal intercostals depress ribs

Fig. 11.13

# Points to Remember

- Muscles of the face move the skin rather than a joint allowing a vast range of facial expressions
- Muscles that move the mandible are also known as **muscles of mastication** because they provide the chewing action
- Complexity of muscles of the vertebral column required for flexibility and maintaining posture



# Muscular System

## Appendicular Muscles



# Muscles That Move the Pectoral Girdle

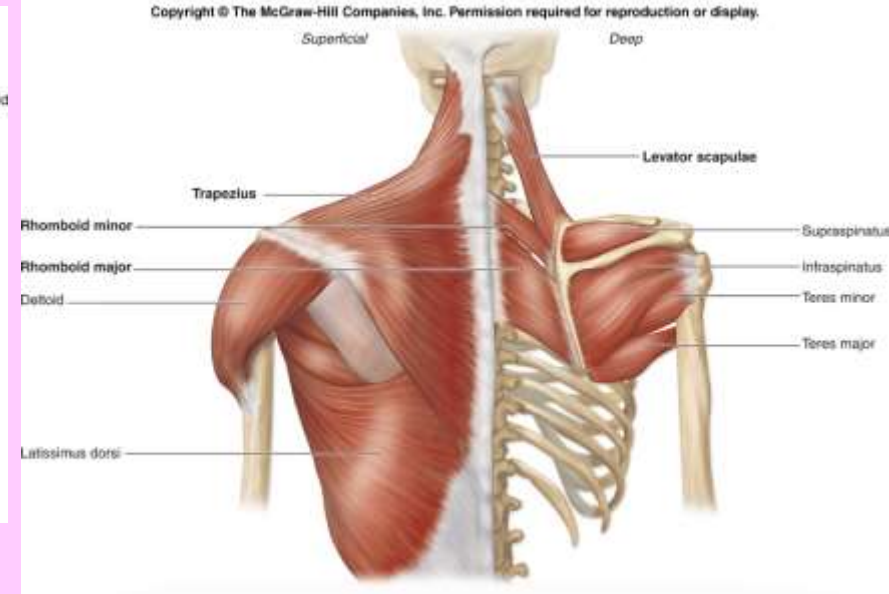
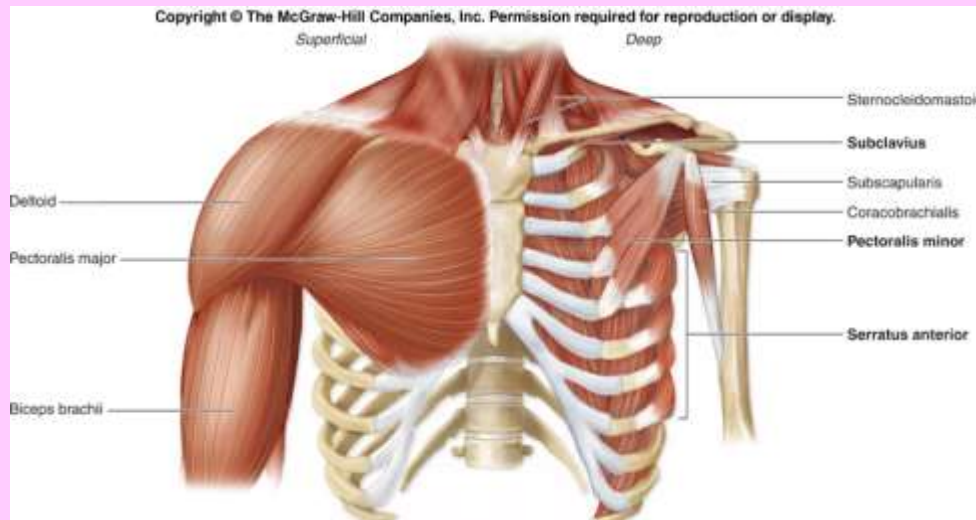


Fig. 12.4

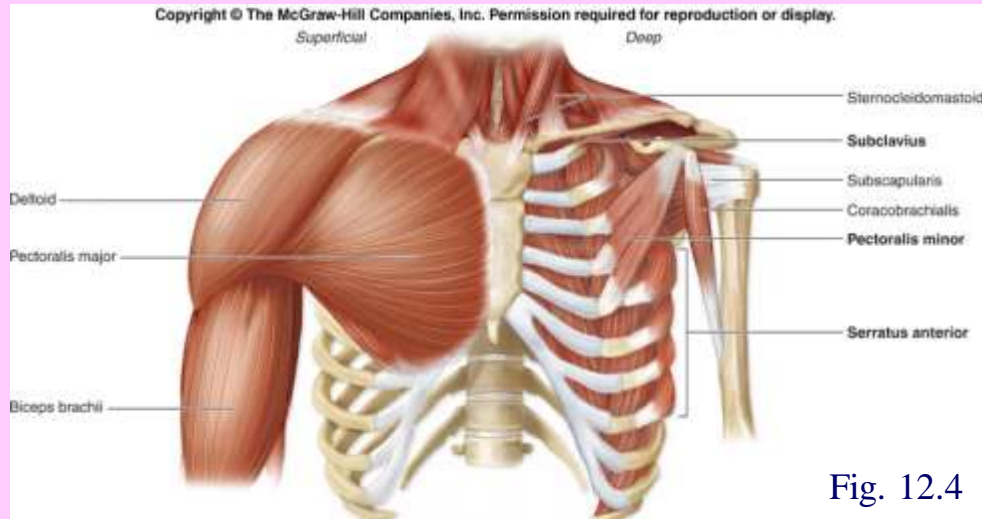
Origin - axial skeleton

Insertion - scapula and clavicle

Elevation - levator scapulae,  
trapezius (superior part),  
rhomboideus

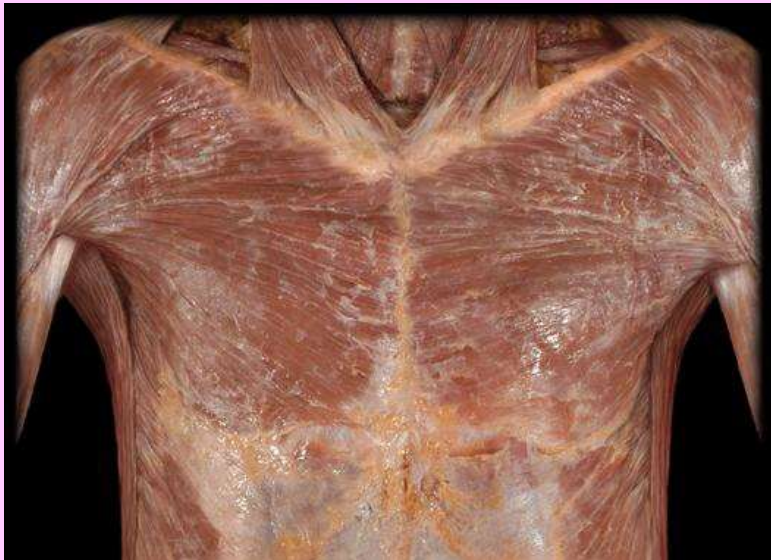
Depression - trapezius (inferior  
part), serratus anterior, pectoralis  
minor

# Muscles That Move the Glenohumeral Joint/Arm



Pectoralis major (flexes shoulder) and Latissimus dorsi (extends shoulder)

- antagonists



# Muscles of The Arm



Fig. 12.5

## Rotator cuff

- Supraspinatus, Infraspinatus, Teres minor, Subscapularis



## Deltoid

- abduction of shoulder
- antagonist of Pectoralis major and Latissimus dorsi

# Arm and Forearm Muscles

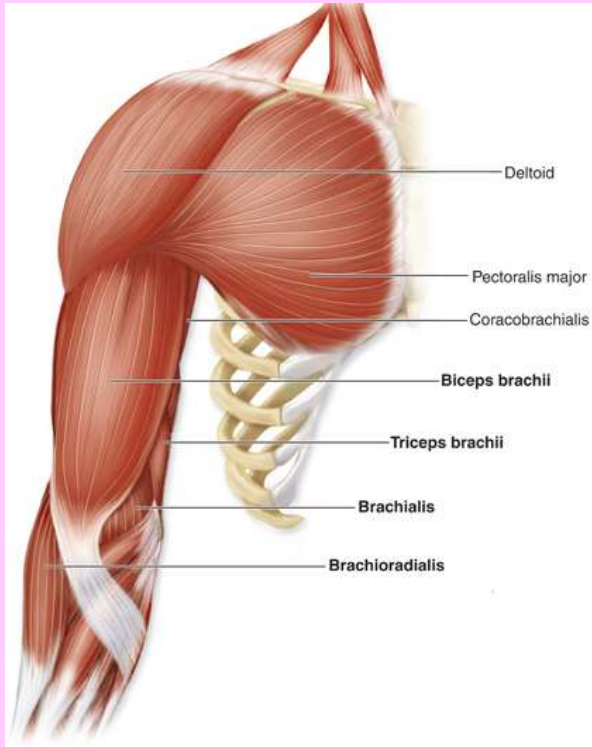


Fig. 12.7

Flexors on anterior side of humerus

- Biceps brachii, Brachialis
- Brachioradialis is a synergist in elbow flexion



Fig. 12.8

Extensors on posterior side of humerus

- Triceps brachii

# Forearm Muscles Acting on Wrist and Hand

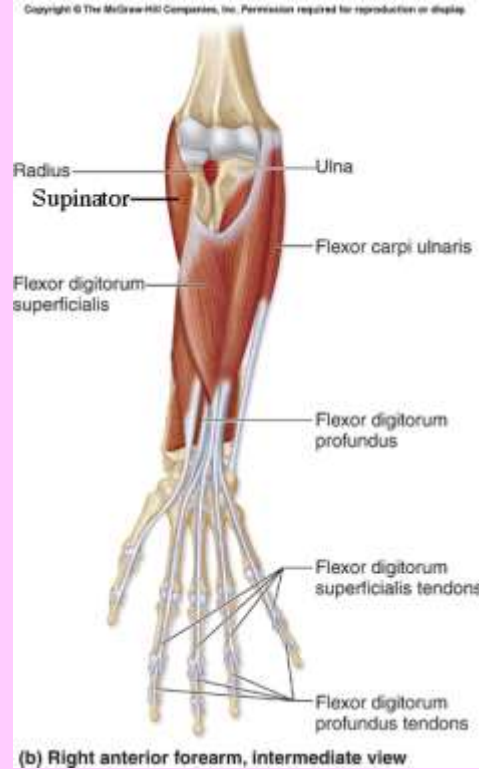
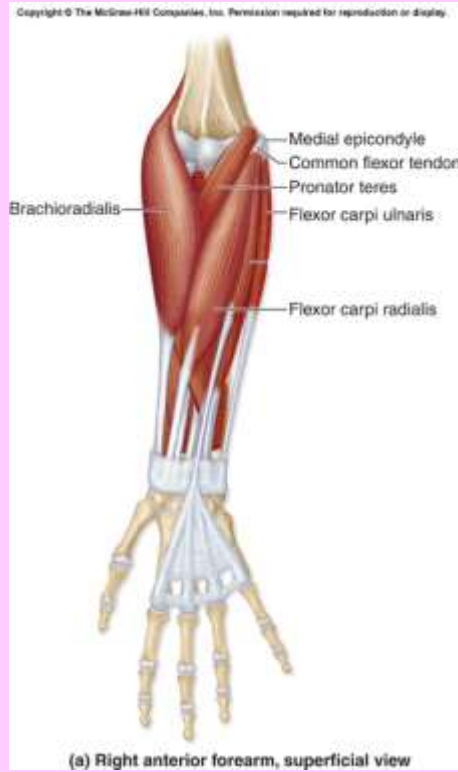


Fig. 12.11

Pronation - Pronator teres

Supination - Supinator & Biceps brachii

Flexors of wrist - Flexor carpi radialis & Flexor carpi ulnaris, Flexor digitorum

# Forearm Muscles Acting on Wrist and Hand

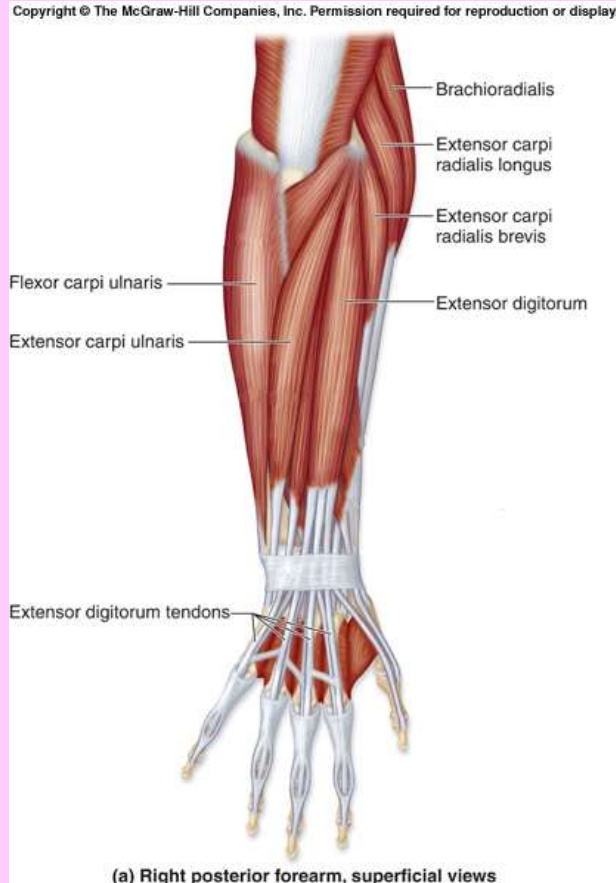
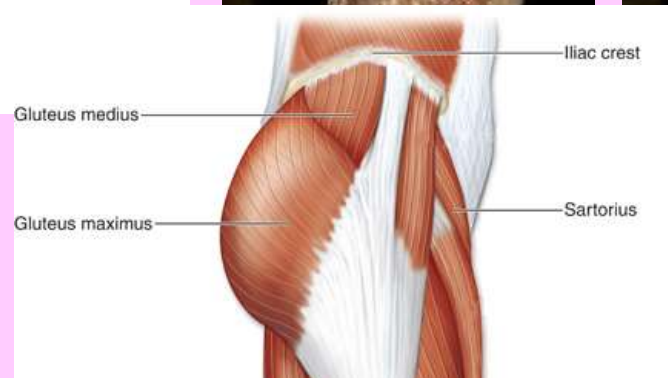
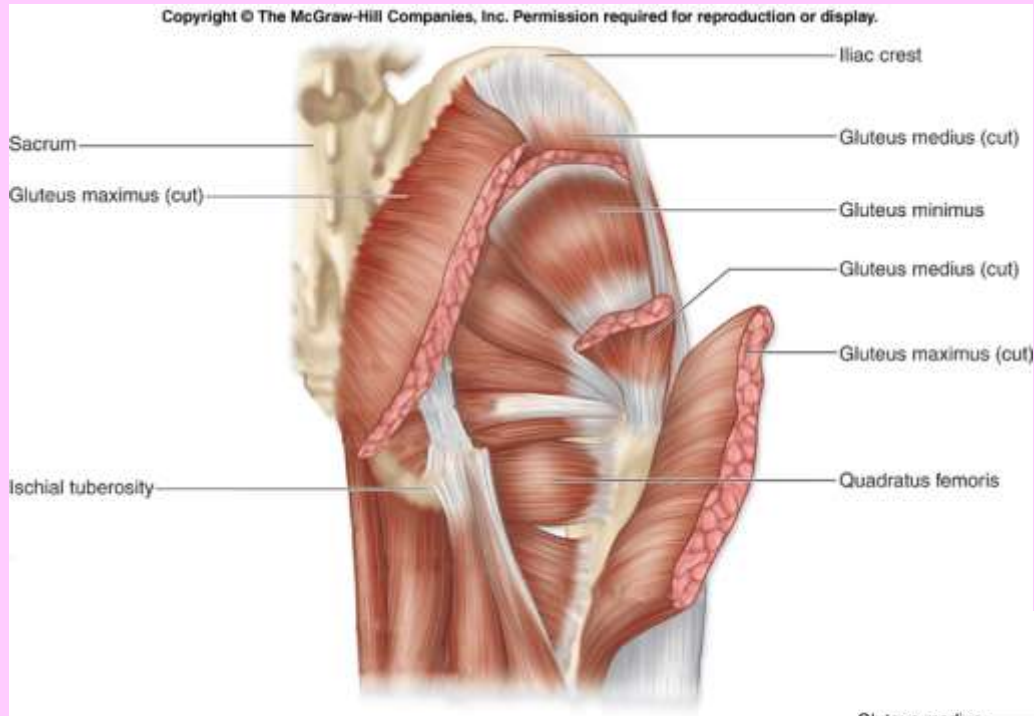


Fig. 12.13



Extensors of wrist - extensor carpi radialis & extensor carpi ulnaris, extensor digitorum

# Muscles of the Pelvic Girdle



## Gluteus maximus

- extensor of the hip
- backswing of leg during walking
- lift of leg when climbing stairs
- generates most force when thigh is flexed to trunk at 45°

Fig. 12.15



# Muscles of the Knee Joint/Leg

Fig. 12.17

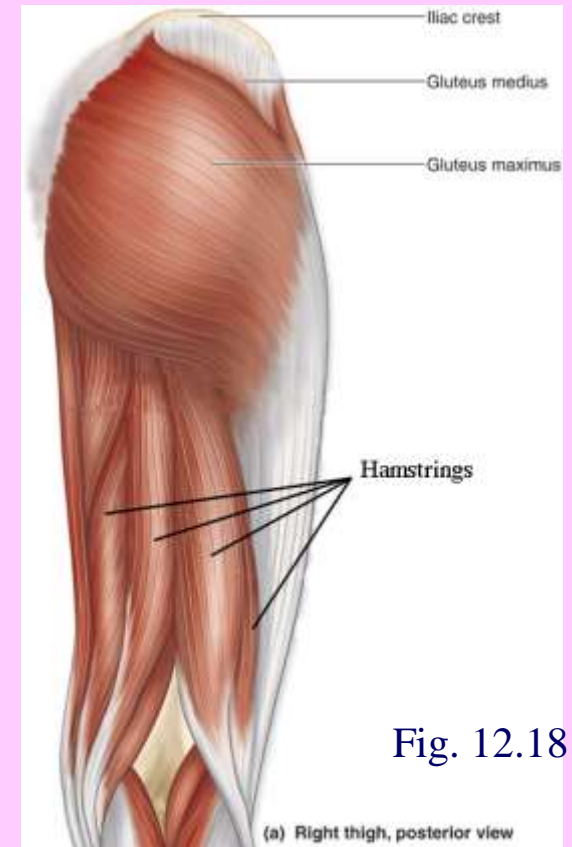
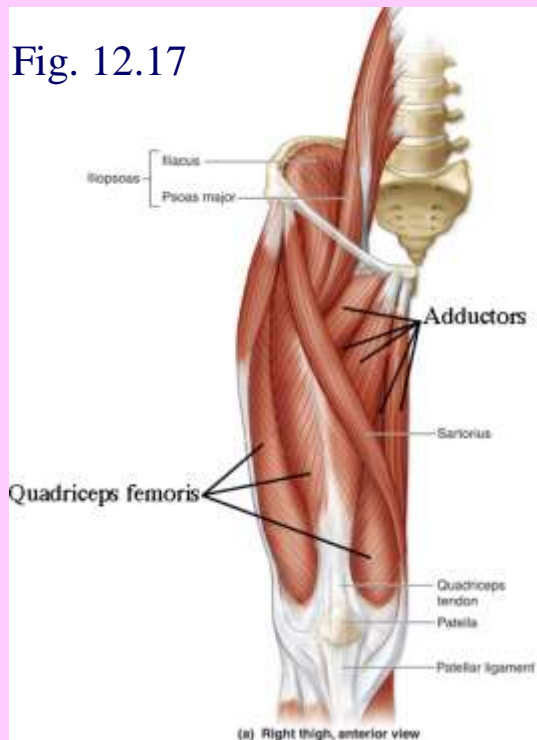


Fig. 12.18

## Iliopsoas

- flexor of hip

## Quadriceps femoris

- prime extensor of knee
- attaches to tibial tuberosity

## Adductors

- adductor of thigh
- laterally rotate thigh

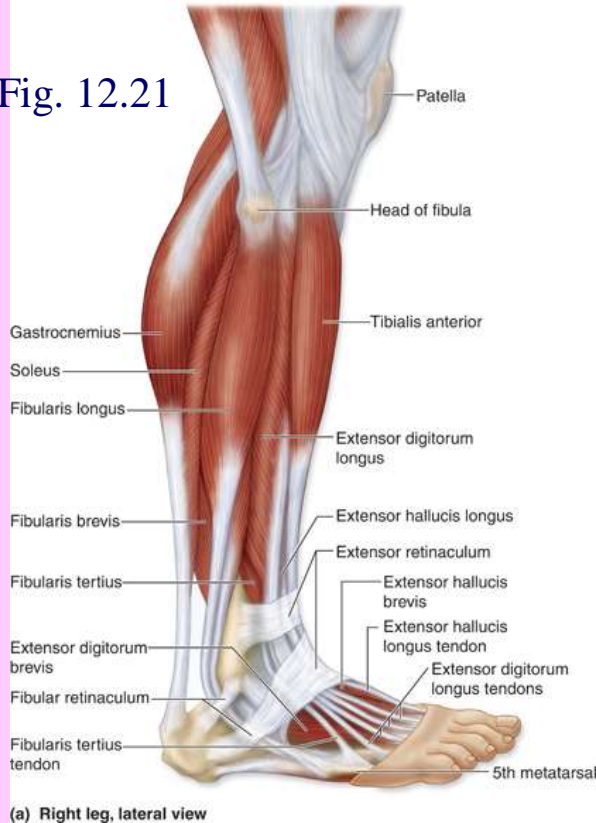
## Hamstrings

- flex knee
- extends hip with Gluteus maximus

# Muscles of the Leg

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Fig. 12.21



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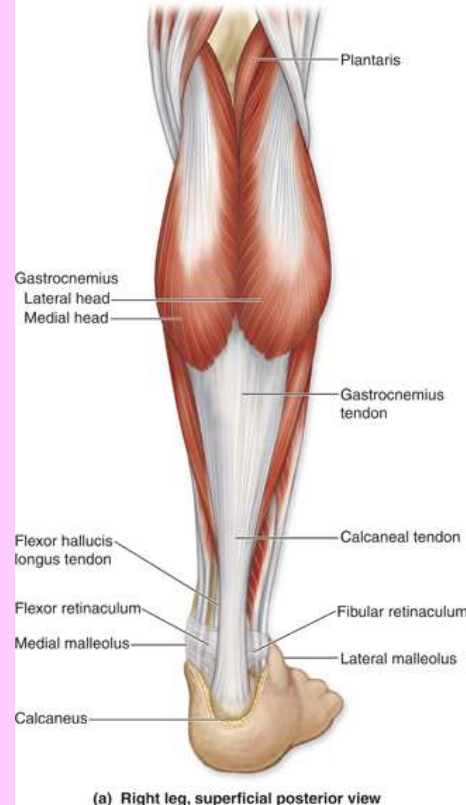


Fig. 12.22



## Gastrocnemius & Soleus

- calf muscles
- attach to calcaneus by Achilles tendon
- flex foot

# Points to Remember

- Muscles that move the pectoral girdle also stabilize it
- Muscles that move the humerus originate from the scapula and axial skeleton
- Muscles of the forearm that act as flexors and extensors are organized into flexor (anterior) and extensor (posterior) groups
- Most muscles that move the femur originate from the pelvic girdle
- Muscles that move the femur and tibia and fibula are organized into extensor (anterior), flexor (posterior) and adductor (medial) groups

THANK YOU