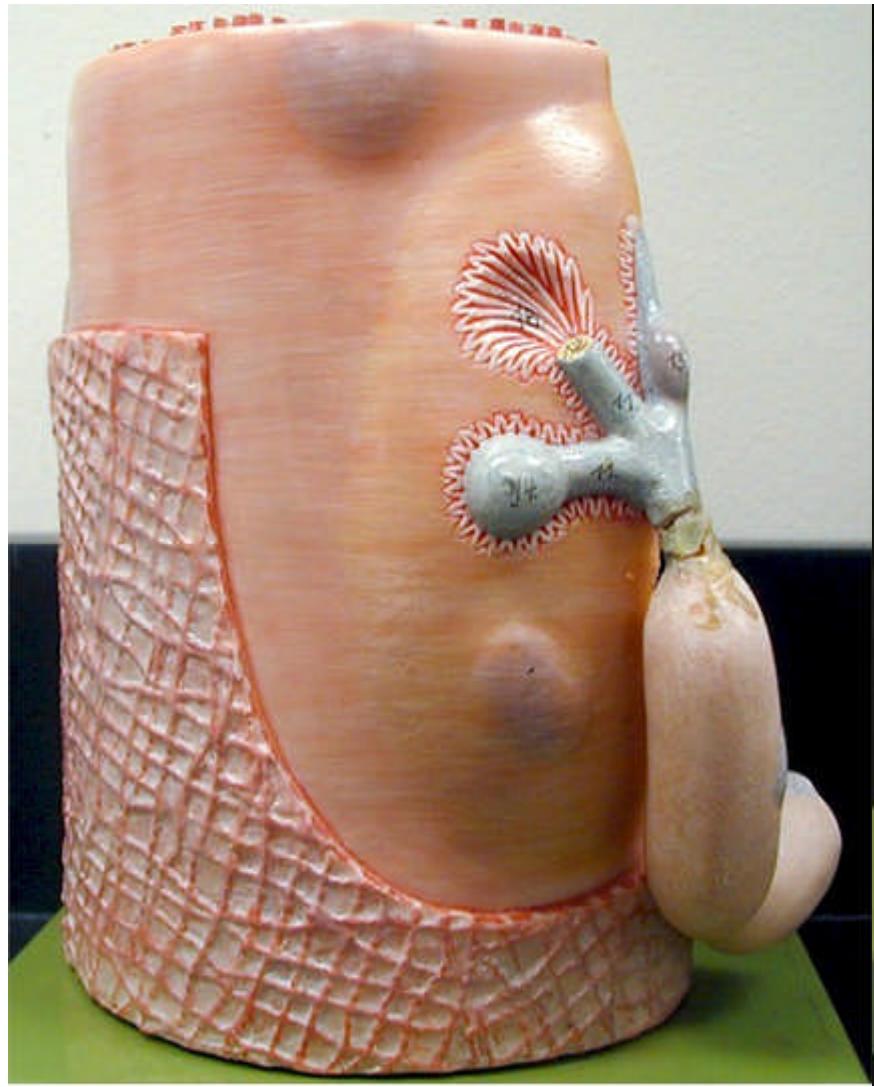
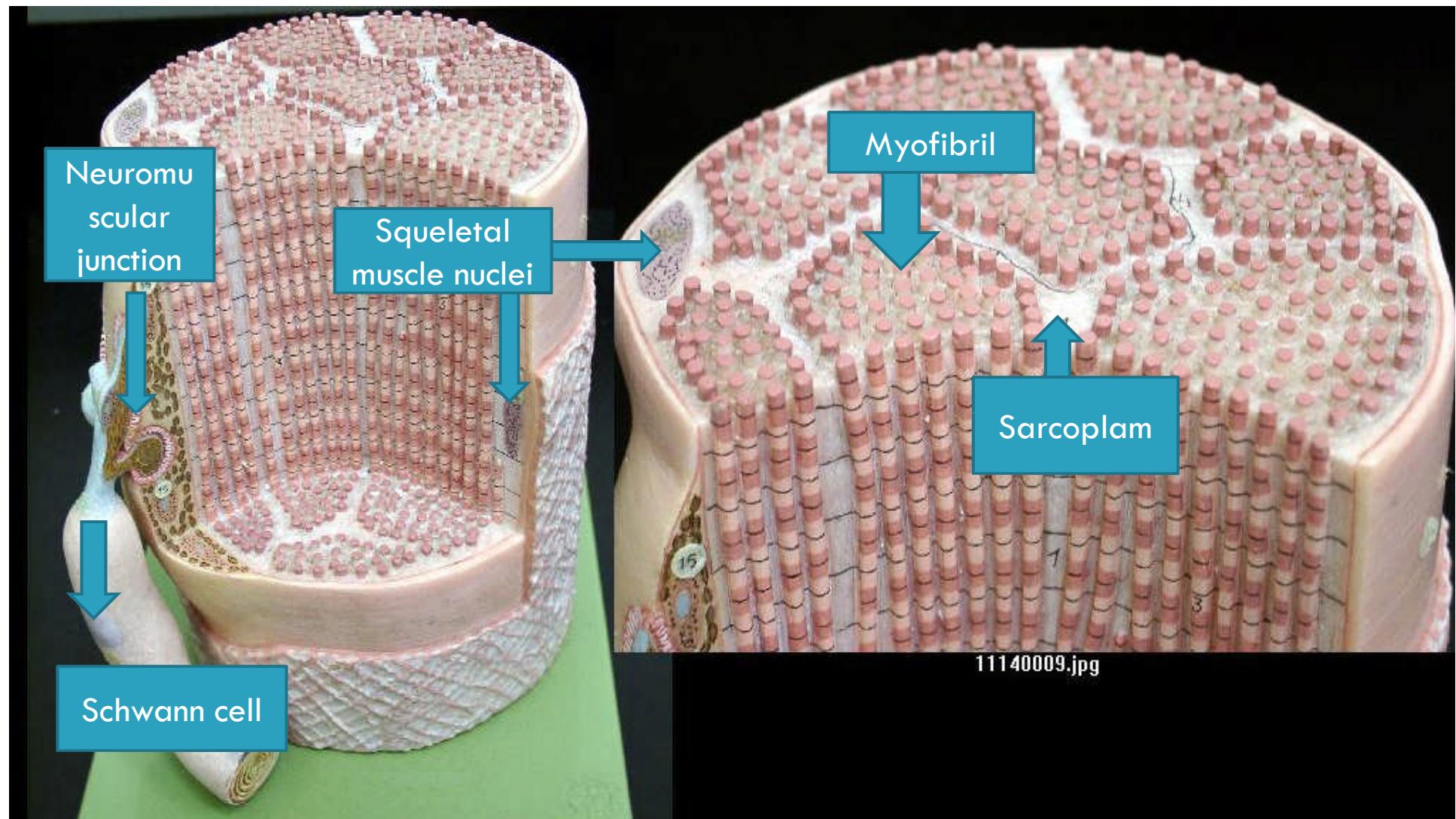


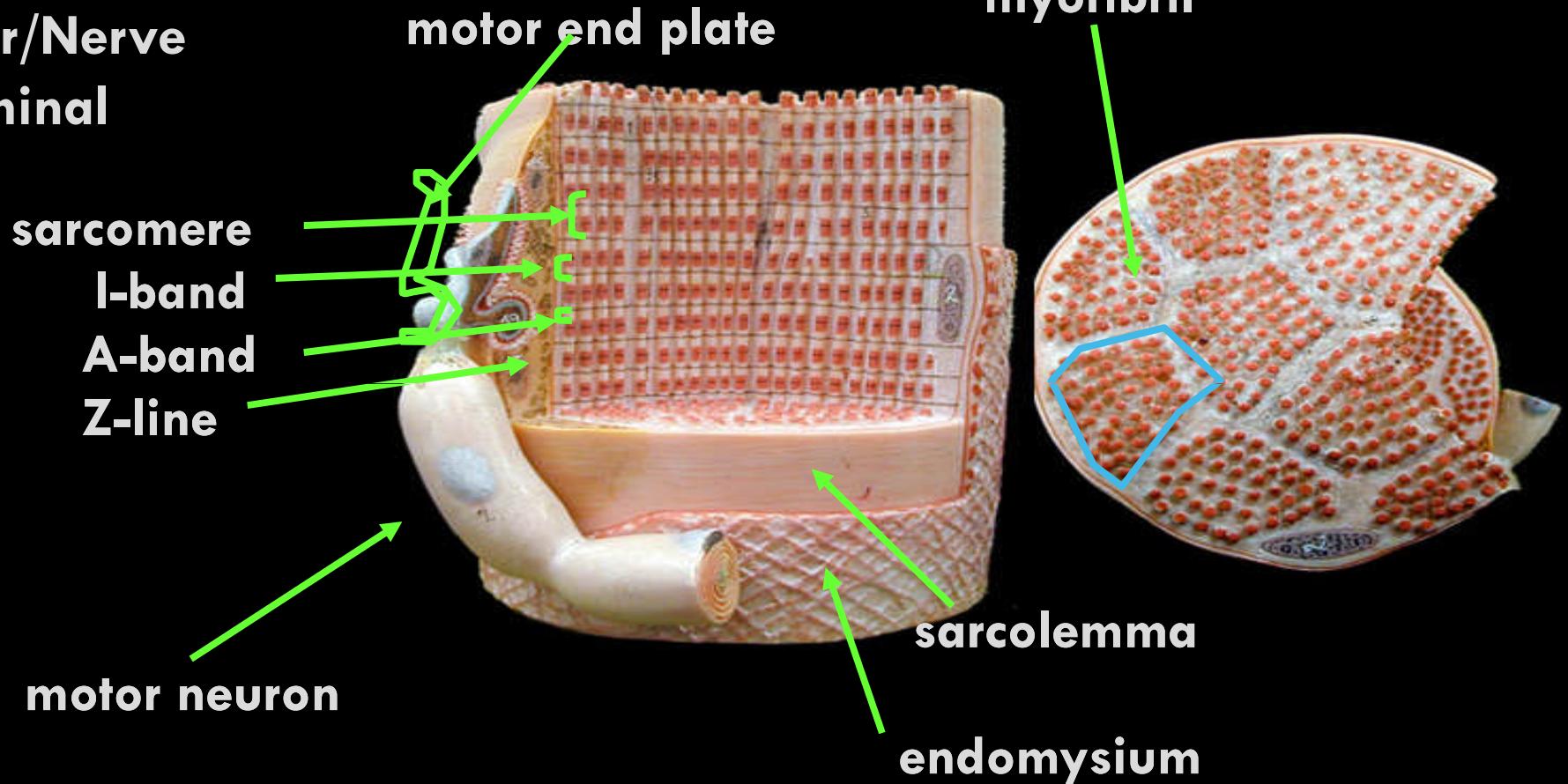
THE MUSCLE BONE MODELS

D.HAMMOUDI.MD





**Muscle
Fiber/Nerve
Terminal**



Muscle	Origin/Insertion	Action
Epicranius:frontalis	O: galea aponeurotica I: skin around eyes	raises eyebrows; surprised
Epicranius:occipitalis	O: occipital bone I : galea aponeurotica	pulls scalp back; surprised
Orbicularis oculi	O: maxillary & frontal bones I: eyelids	closes eyelids; blinking
Orbicularis oris	O: muscle fibers around mouth I: skin around mouth	closes lips; kissing
Buccinator	O: maxilla & mandible I: orbicularis oris	compresses cheek; whistling
Platysma	O: fascia in upper chest I: mandible & corner of mouth	lowers mandible; opens mouth
Mentalis	O: mandible I: skin of chin	protrudes lower lip; pouting
Risorius	O: fascia on masseter muscle I: skin at corner of mouth	lateral movement of lips; grimacing

Zygomaticus	O: zygomatic bone I: skin around mouth	raises edges of mouth; smiling
Levator labi superioris	O: infroorbital margin of maxilla I: skin of upper lip	raises upper lip; as in disgust
Depressor labi inferioris	O: mandible I: skin of lower lip	lowers lower lip
Temporalis	O: parietal bone I: mandible	raises mandible; closes mouth
Masseter	O: zygomatic arch I: mandible	raises mandible; closes mouth
Medial pterygoid	O: sphenoid & maxilla I: mandible	raises mandible; side-to-side mouth motion
Lateral pterygoid	O: sphenoid & maxilla I: mandible	raises mandible; side-to side mouth motion
Sternocleidomastoid	O: sternum & clavicle I: temporal bone	flexes & rotates head
Splenius capitis	O: cervical & thoracic vertebrae I: temporal bone	rotates, bends, or extends head

Semispinalis capitis	O: cervical & thoracic vertebrae I: occipital bone	rotates or extends head
Longissimus	O: cervical & thoracic vertebrae I: temporal bone	rotates, bends, or extends head
Omohyoid	O: scapula I: hyoid bone	depresses hyoid bone
Sternohyoid	O: sternum & clavicle I: hyoid bone	depresses hyoid bone

Muscles of the Neck, Shoulder, Thorax, and Abdominal Wall

Muscle	Origin/Insertion	Action
Semispinalis capitis	O: cervical & thoracic vertebrae I: occipital bone	extends & rotates head
Splenius capitis	O: c & t vertebrae I : occipital & temporal bone	extends and rotates head
Deltoid	O: clavicle & scapula I: humerus	abducts, flexes, extends, & rotates arm
Pectoralis major	O: clavicle, sternum, ribs I: humerus	flexes, adducts, & rotates arm
Infraspinatus	O: scapula I: humerus	rotates arm
Teres major	O: scapula I: humerus	extends, rotates arm
Latissimus dorsi	O: vertebrae, ribs, ilium I : humerus	extends, adducts, rotates arm
Levator scapulae	O: cervical vertebrae I: scapula	elevates scapula
Pectoralis minor	O: ribs I: scapula	stabilizes scapula, elevates ribs
Serratus anterior	O: ribs I: scapula	stabilizes scapula, elevates ribs
Trapezius	O: occipital bone & c & t vertebrae; I : scapula & clavicle	elevates, adducts, & rotates scapula

Rhomboideous major/Rhomboideus minor	O: c & t vertebrae I: scapula	adducts & rotates scapula
Rectus abdominis	O: pubic crest & symphysis I: xiphoid process & ribs	flexes vertebral column, compresses abdomen
External oblique	O: ribs I : linea alba, ilium	compresses abdomen, rotates trunk
Transverse abdominis	O: ilium, ribs I: linea alba, xiphoid process	compresses abdomen
External intercostals	O: lower border of rib above I: upper border of rib below	elevates ribs, aids inspiration
Internal intercostals	O: upper border of rib below I: lower border of rib above	pulls ribs together, aids expiration

Diaphragm	O: lower ribs, sternum I: central tendon	aids inspiration
Spinalis	O: lumbar & thoracic vertebrae I: thoracic & cervical vertebrae	extends vertebral column
Longissimus	O: lumbar & cervical vertebrae I : temporal bone, vertebrae	extends vertebral column
Iliocostalis	O: ilium, ribs I: ribs	extends vertebral column

Muscles of the Arm and Forearm

Muscle	Origin/Insertion	Action
Coracobrachialis	O: scapula I: humerus	flexes & adducts arm
Biceps brachii	O: scapula, glenoid cavity I: radius	flexes arm, flexes forearm, & rotates hand
Brachialis	O: humerus I: ulna	flexes forearm
Brachioradialis	O: humerus I: radius	flexes forearm
Triceps brachii	O: humerus I: ulna	extends forearm
Anconeus	O: humerus I: ulna	extends forearm
Pronator teres	O: humerus, ulna I: radius	rotates forearm
Pronator quadratus	O: ulna I: radius	rotates forearm
Supinator	O: ulna I: radius	rotates forearm
Flexor carpi radialis	O: humerus I : metacarpals	flexes & abducts wrist
Flexor carpi ulnaris	O : humerus, ulna I : carpals, metacarpals	flexes & abducts wrist
Flexor digitorum superficialis	O: humerus, ulna, radius I: phalanges	flexes finger 2–5

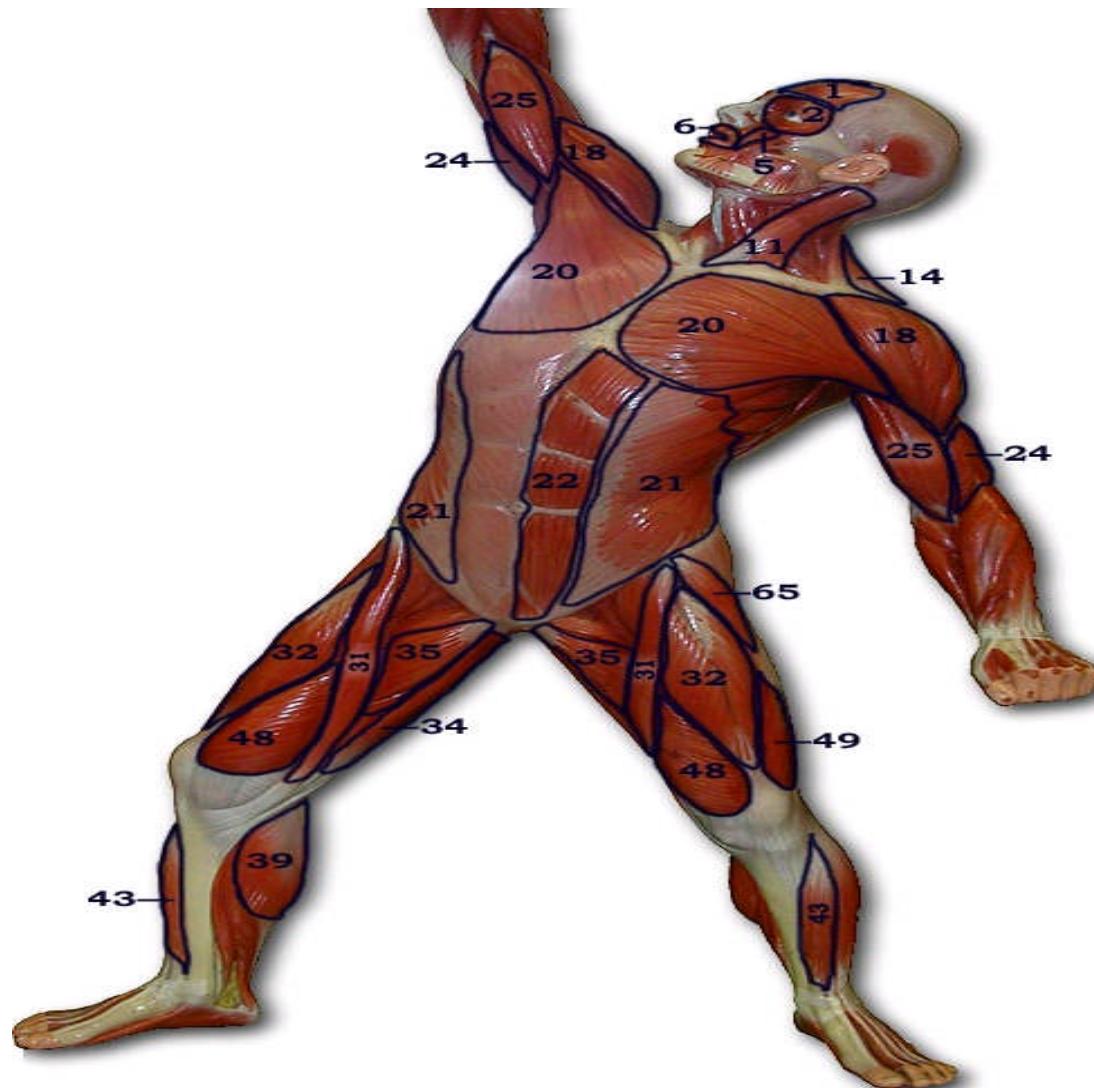
Flexor digitorum profundus	O: ulna I: phalanges	flexes distal fingers 2–5
Palmaris longus	O: humerus I : flexor retinaculum	flexes wrist
Extensor carpi radialis longus	O : humerus I : second metacarpal	extends & abducts wrist
Extensor carpi ulnaris	O: humerus, ulna I: fifth metacarpal	extends & adducts wrist
Extensor digitorum	O: humerus I: distal phalanges	extends fingers 2–5

Extensor pollicis brevis	O: radius I: phalanx of thumb thumb	extends
Extensor pollicis longus	O: radius I: phalanx of thumb	extends thumb
Extensor indicis	O: ulna I: index finger	extends index finger
Abductor pollicis longus	O: radius & thumb I: first metacarpal	abducts & extends thumb

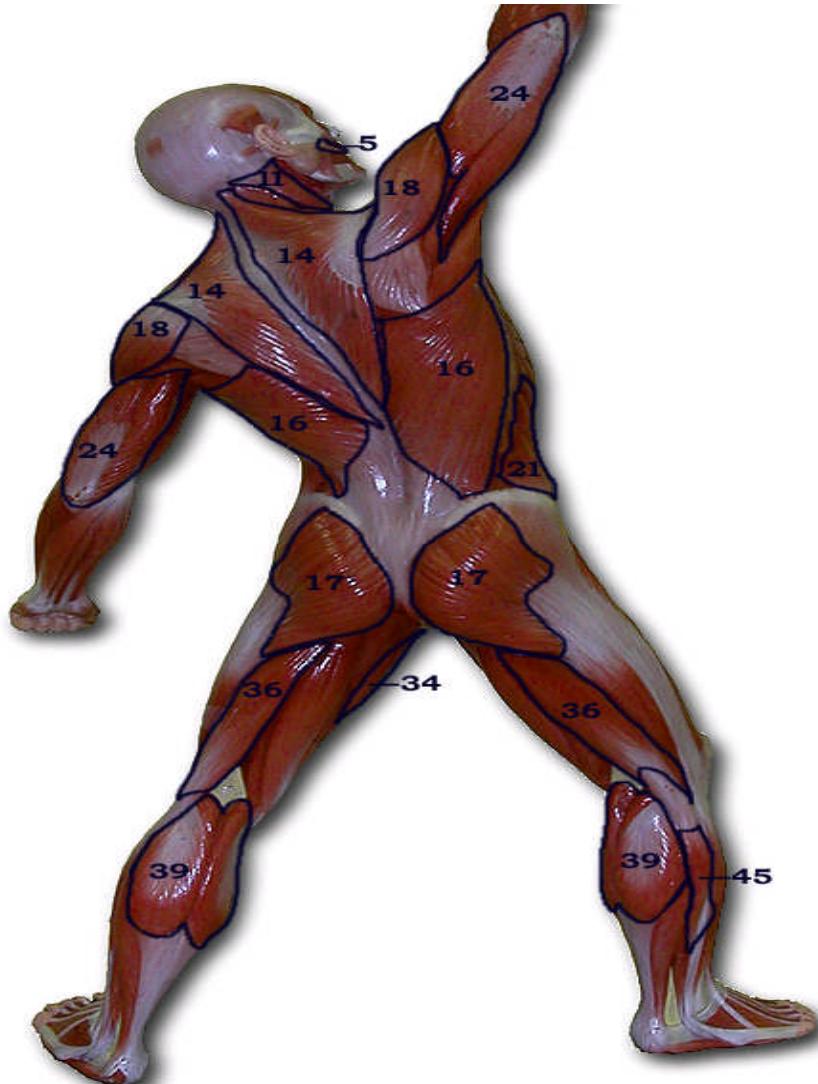
Muscles of the Thigh and Leg

Muscle	Origin/Insertion	Action
Gluteus maximus	O: ilium, sacrum, coccyx I: femur	extends & rotates thigh
Gluteus medius	O: ilium I: femur	abducts & rotates thigh
Pectineus	O: pubis I: femur	adducts & flexes thigh
Adductor longus	O: pubis I: femur	adducts, flexes, & rotates thigh
Adductor brevis	O: pubis I: femur	adducts, flexes, & rotates thigh
Adductor magnus	O: pubis, ischium I: femur	adducts, flexes, & rotates thigh
Gracilis	O: pubis I: tibia	adducts thigh & flexes leg
Sartorius	O: ilium I: tibia	flexes & rotates thigh, flexes leg
Quadriceps femoris: rectus femoris	O: ilium, femur I: patella, tibia	extends leg, flexes thigh
Quadriceps femoris: vastus lateralis	O: ilium, femur I: patella, tibia	extends leg
Quadriceps femoris: vastus medialis	O: ilium, femur I: patella, tibia	extends leg
Quadriceps femoris: vastus intermedius	O: ilium, femur I: patella, tibia	extends leg

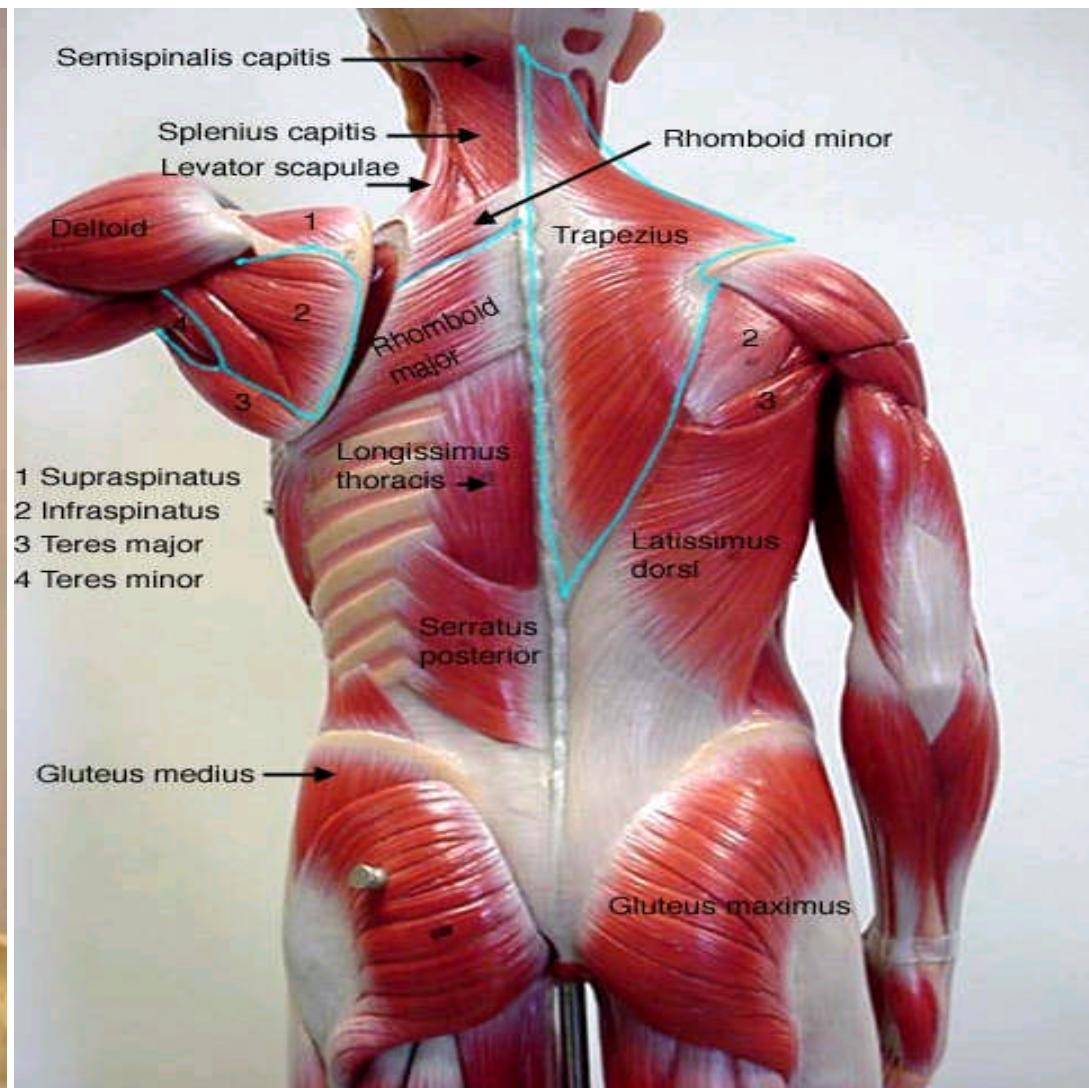
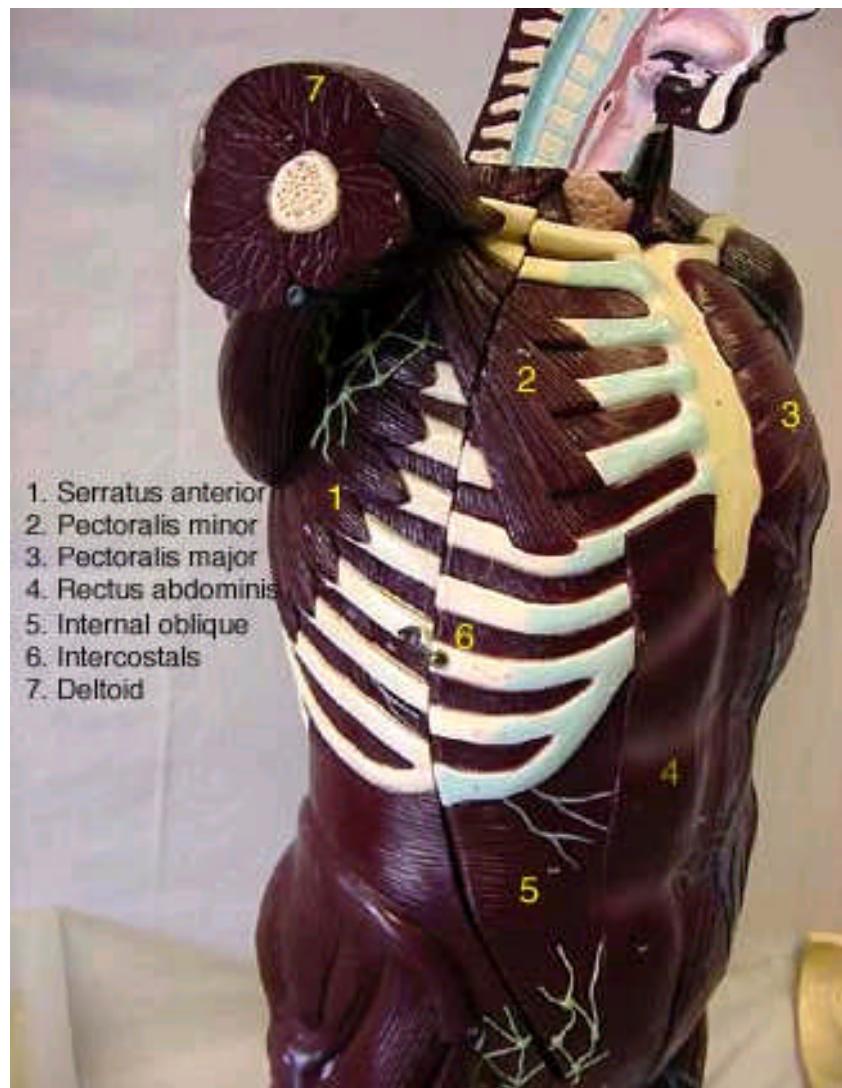
Biceps femoris (hamstrings)	O: ischium, femur I: fibula	flexes & rotates leg, extends thigh
Semitendinosus (hamstrings)	O: ischium I: tibia	flexes & rotates leg, extends thigh
Semimembranosus	O: ischium I: tibia	flexes & rotates leg, extends thigh
Tibialis anterior	O: tibia I: 1 st metatarsal & cuneiform	dorsiflexes & inverts foot
Extensor digitorum longus	O: tibia, fibula I: phalanges of toes	dorsiflexes & everts foot, extends toes
Gastrocnemius	O: femur I: calcaneus	plantar flexes foot, flexes leg
Soleus	O: tibia, fibula I: calcaneus	plantar flexes foot

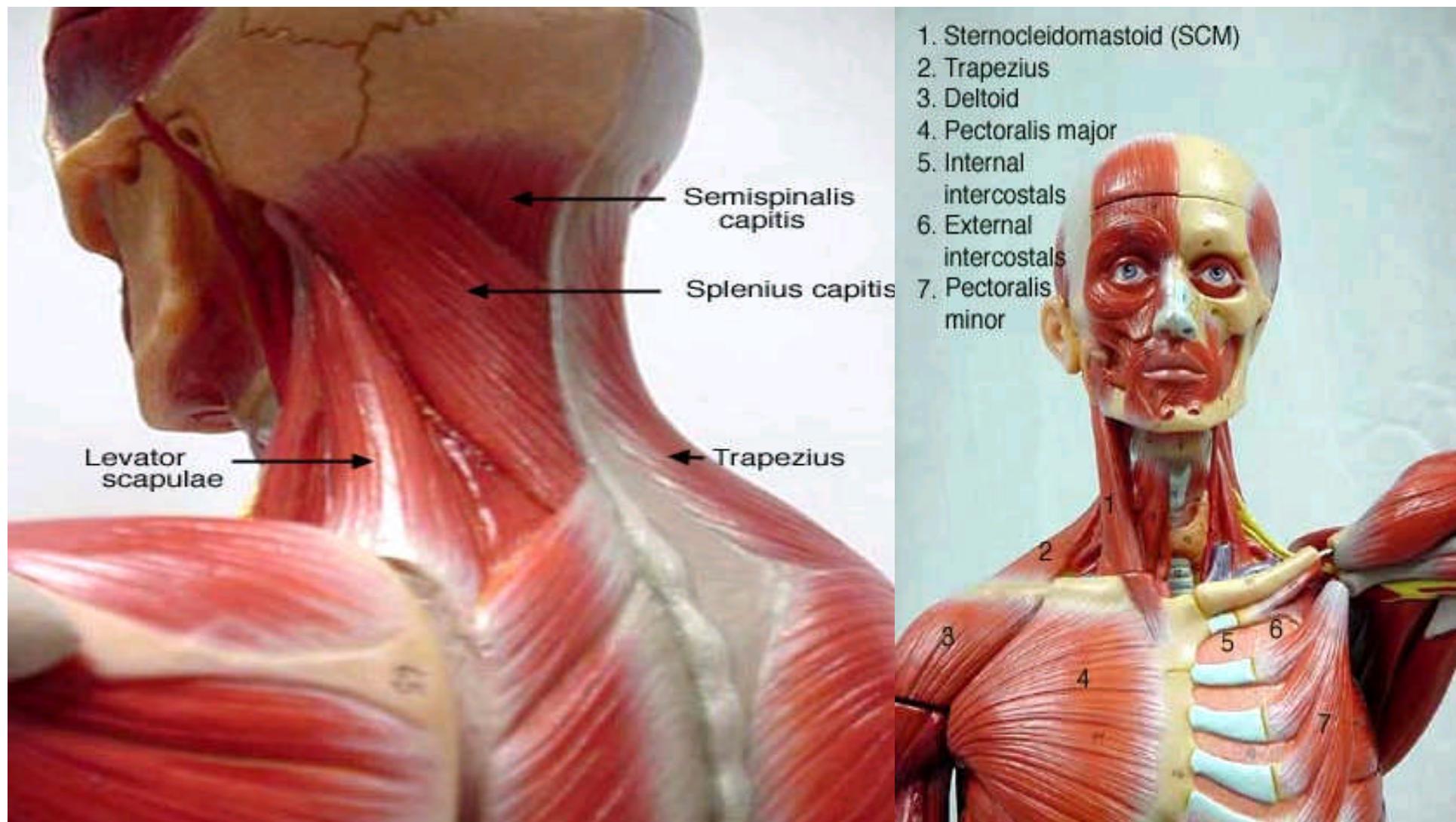


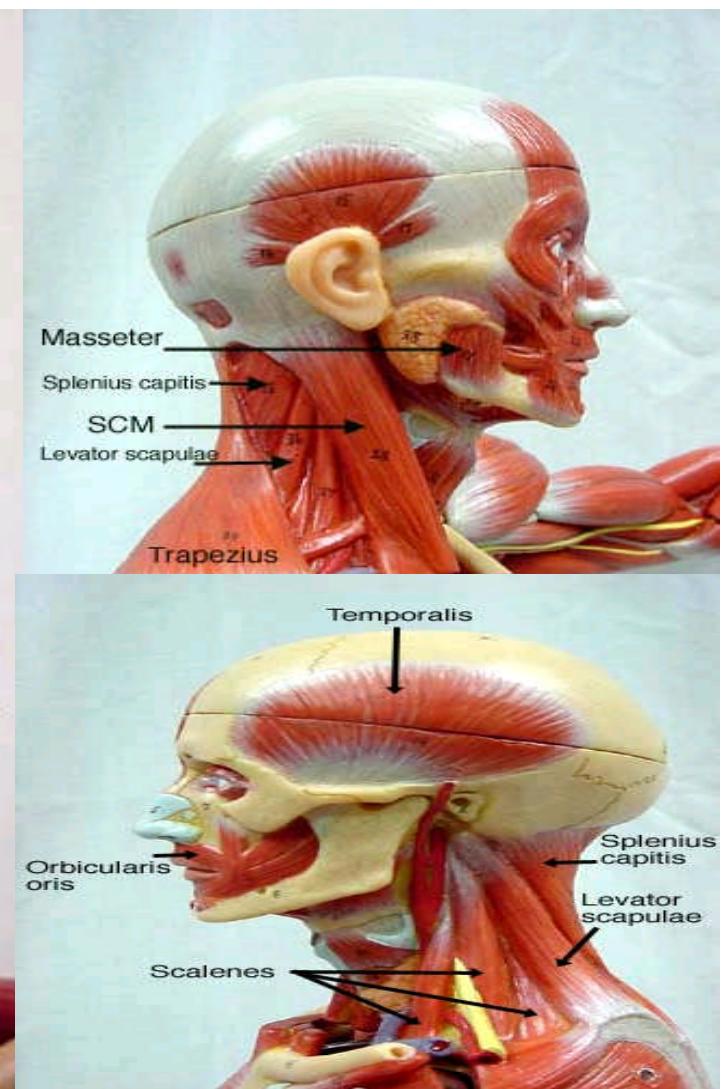
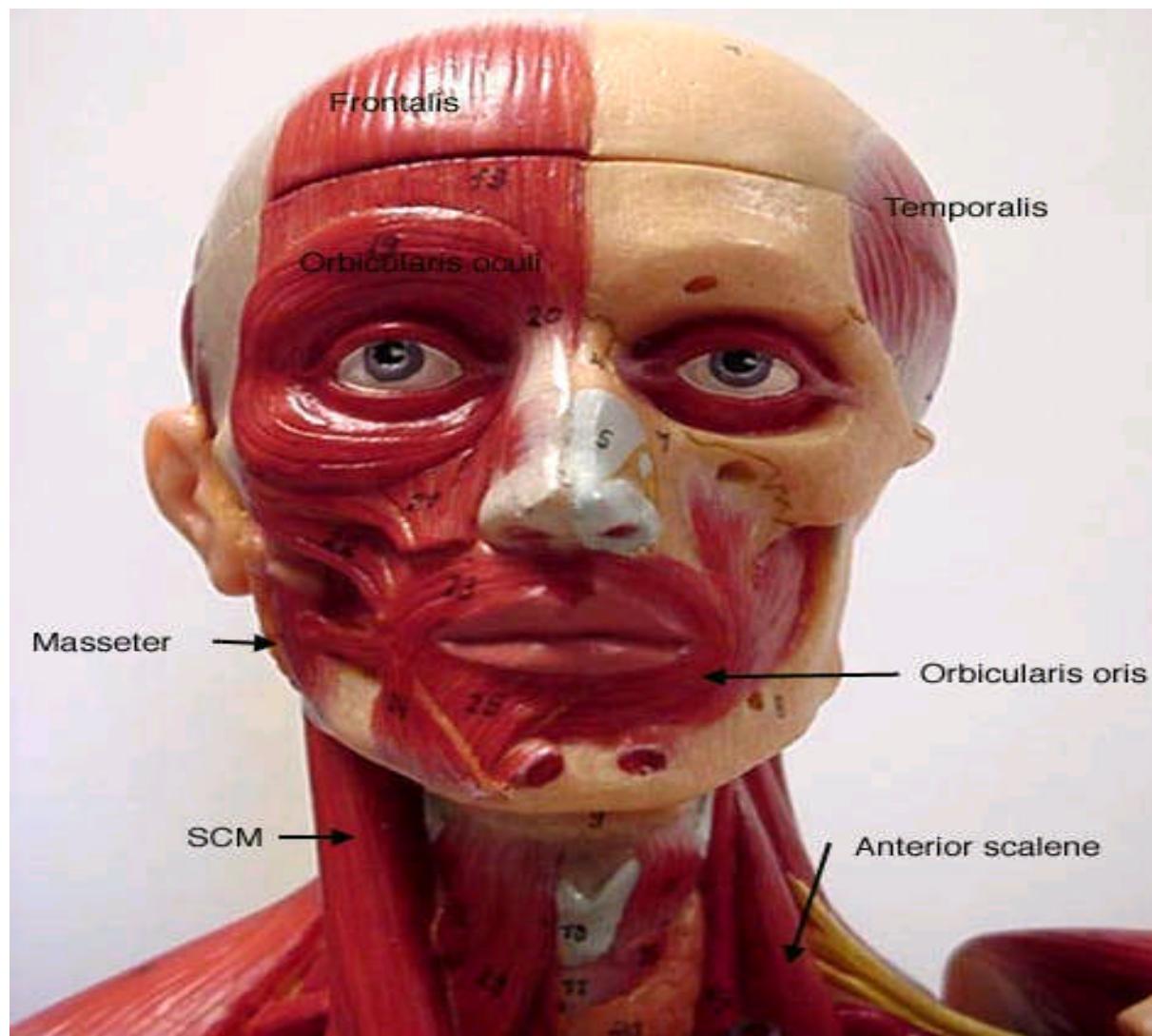
- 1.Frontalis
- 2.Orbicularis Oculi
- 5.Zygomaticus
- 6.Orbicularis Oris
- 11.Sternocleidomastoid
- 14.Trapezius
- 16.Latissimus Dorsi
- 17.Gluteus Maximus
- 18.Deltoid
- 20.Pectoralis Major
- 21.External Oblique
- 22.Rectus Abdominis
- 24.Triceps Brachii
- 25.Biceps Brachii
- 31.Sartorius
- 32.Rectus Femoris
- 34.Gracilis
- 35.Adductor Longus
- 36.Biceps Femoris
- 39.Gastrocnemius
- 43.Tibialis Anterior
- 45.Fibularis (Peroneus)
Longus
- 48.Vastus Medialis
- 49.Vastus Lateralis
- 65.Tensor Fasciae Latae



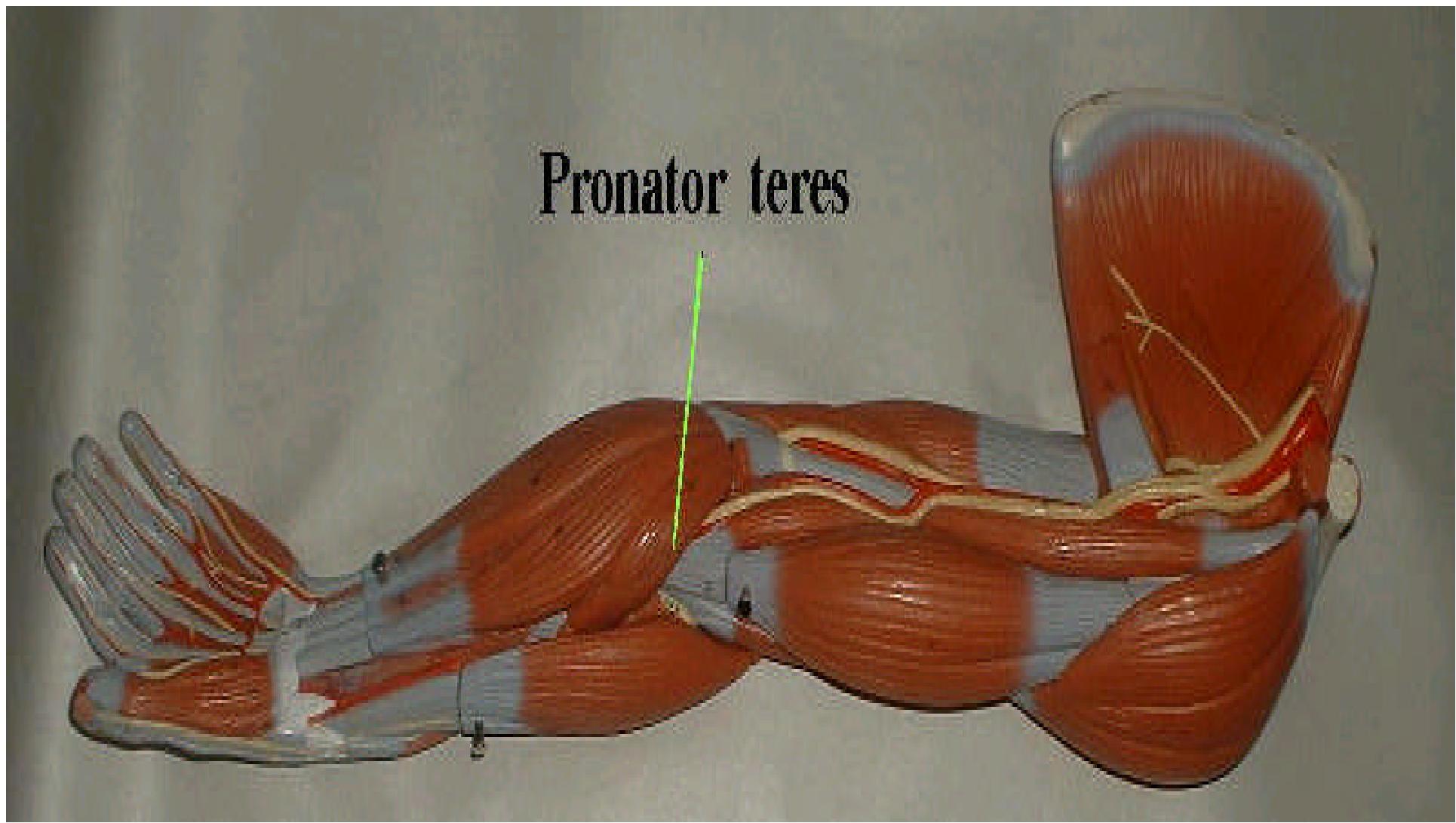
- 1. Frontalis
- 2. Orbicularis Oculi
- 5. Zygomaticus
- 6. Orbicularis Oris
- 11. Sternocleidomastoid
- 14. Trapezius
- 16. Latissimus Dorsi
- 17. Gluteus Maximus
- 18. Deltoid
- 20. Pectoralis Major
- 21. External Oblique
- 22. Rectus Abdominis
- 24. Triceps Brachii
- 25. Biceps Brachii
- 31. Sartorius
- 32. Rectus Femoris
- 34. Gracilis
- 35. Adductor Longus
- 36. Biceps Femoris
- 39. Gastrocnemius
- 43. Tibialis Anterior
- 45. Fibularis (Peroneus) Longus
- 48. Vastus Medialis
- 49. Vastus Lateralis
- 65. Tensor Fasciae Latae

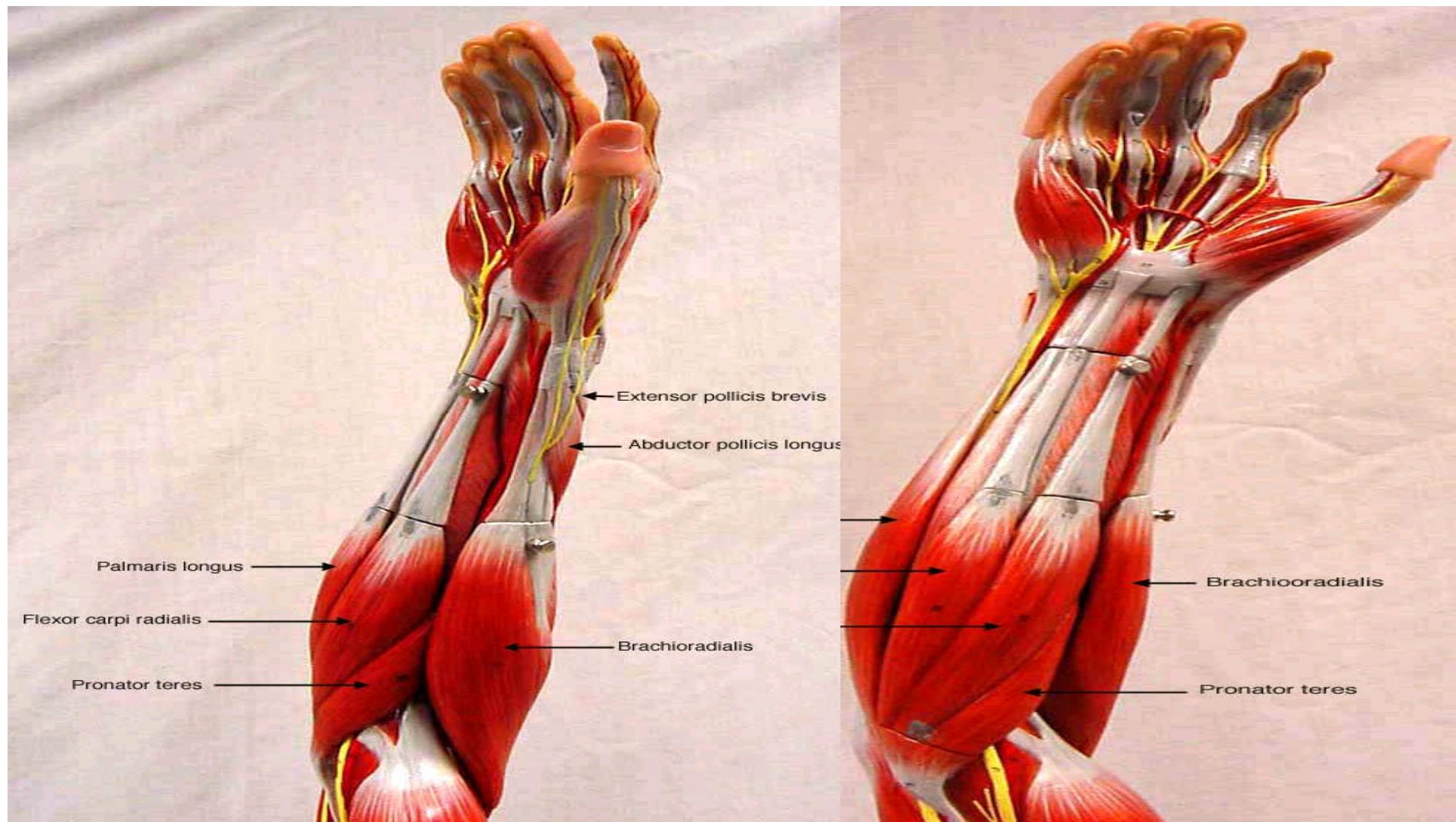


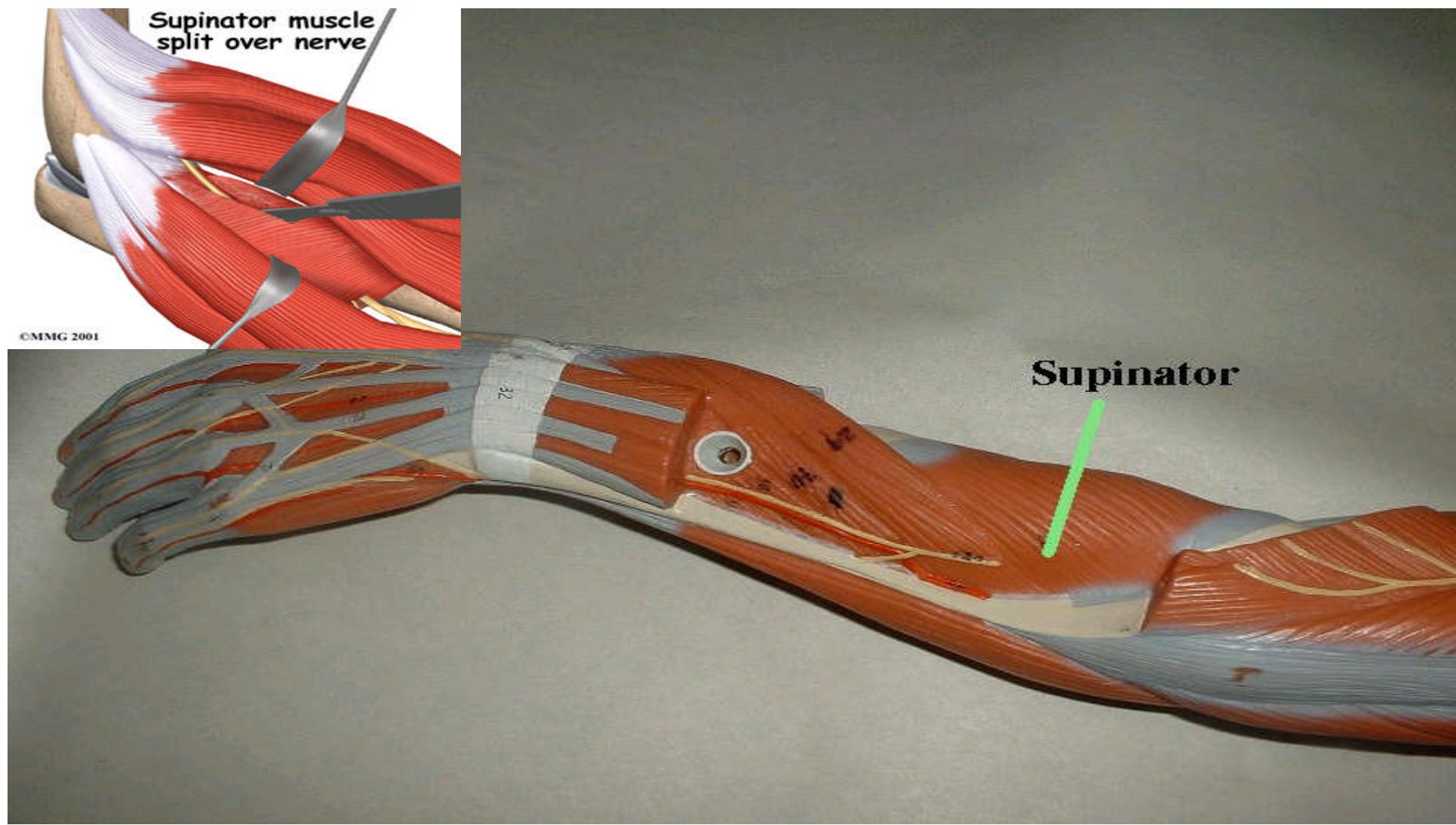




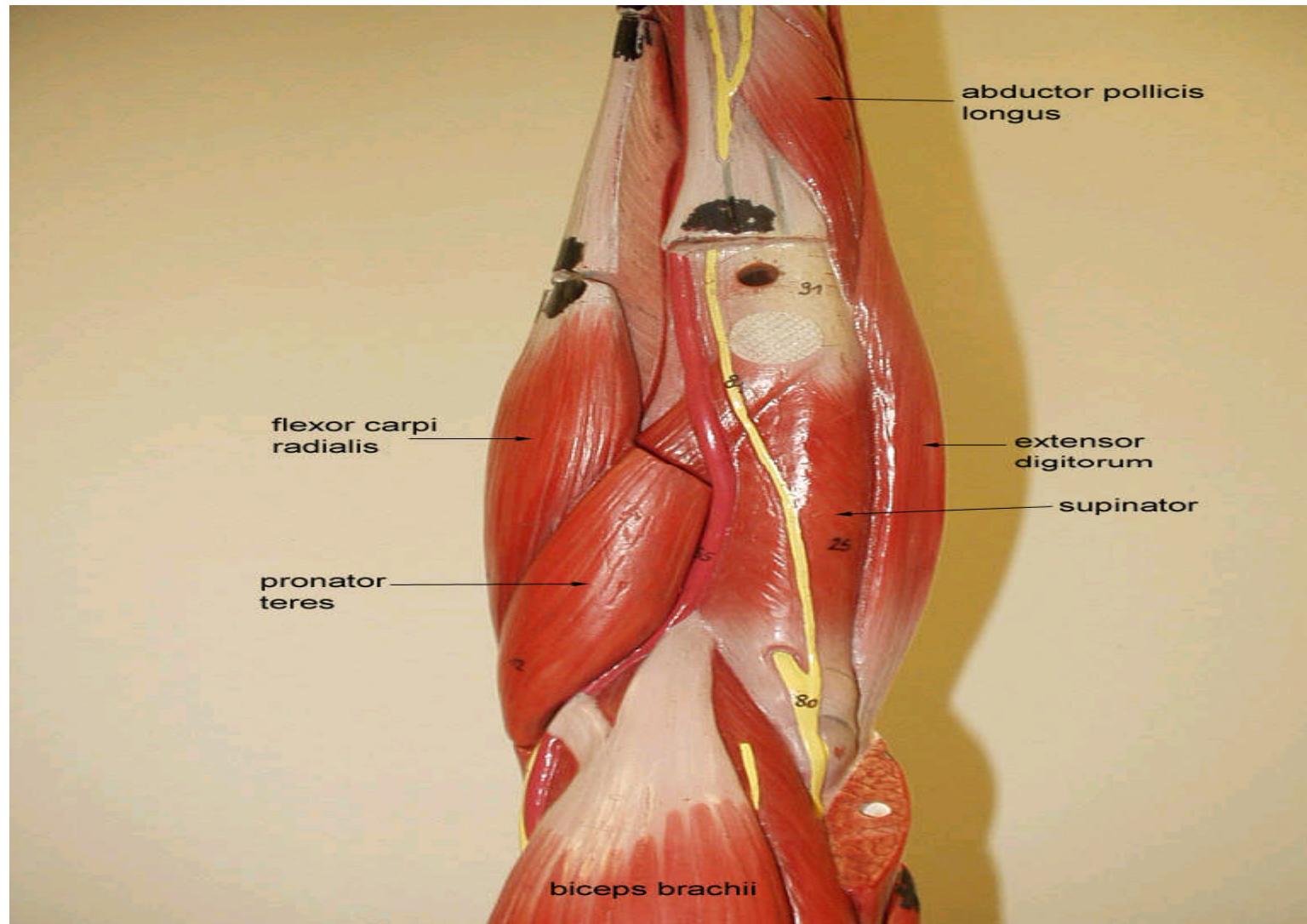
Pronator teres

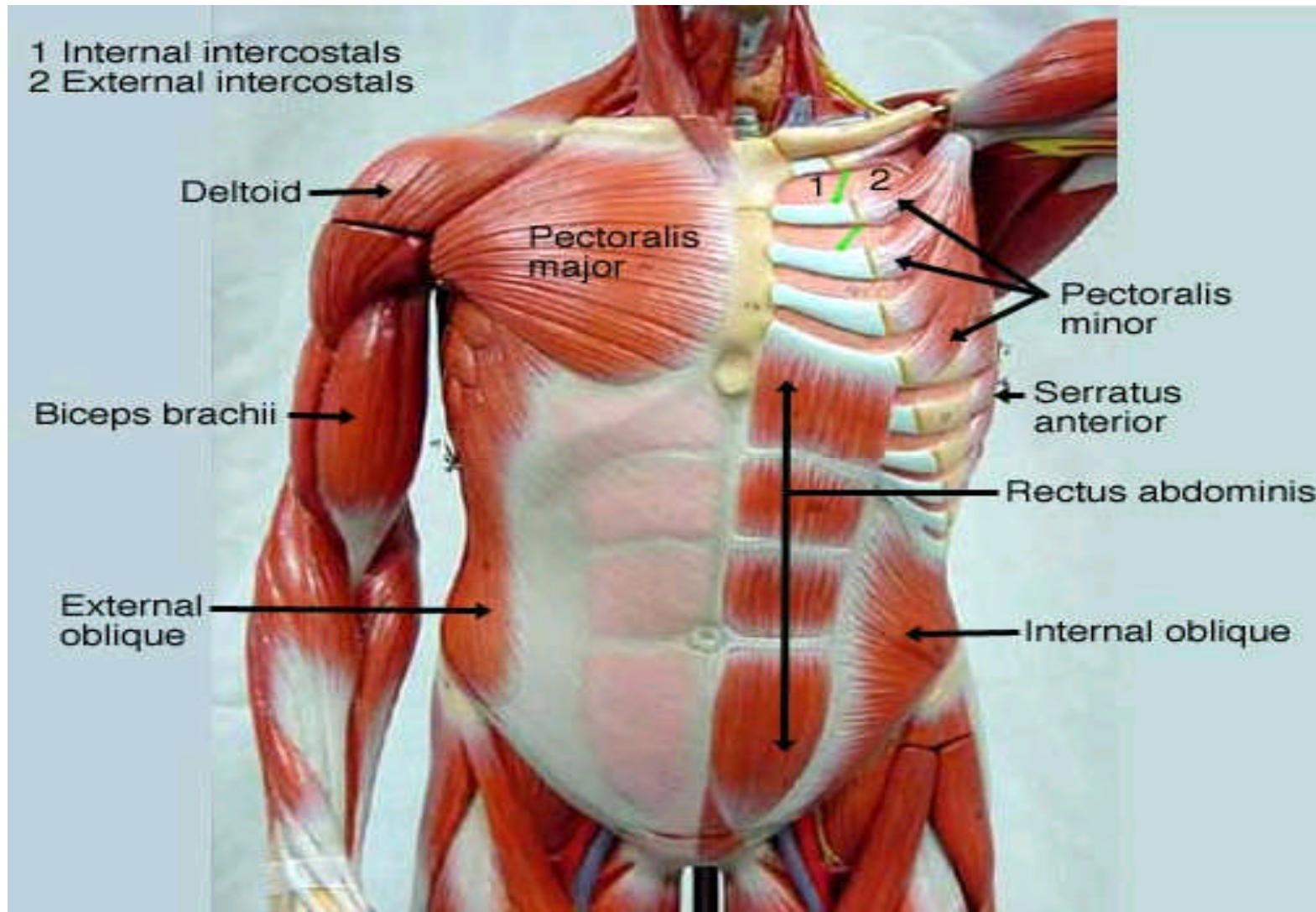


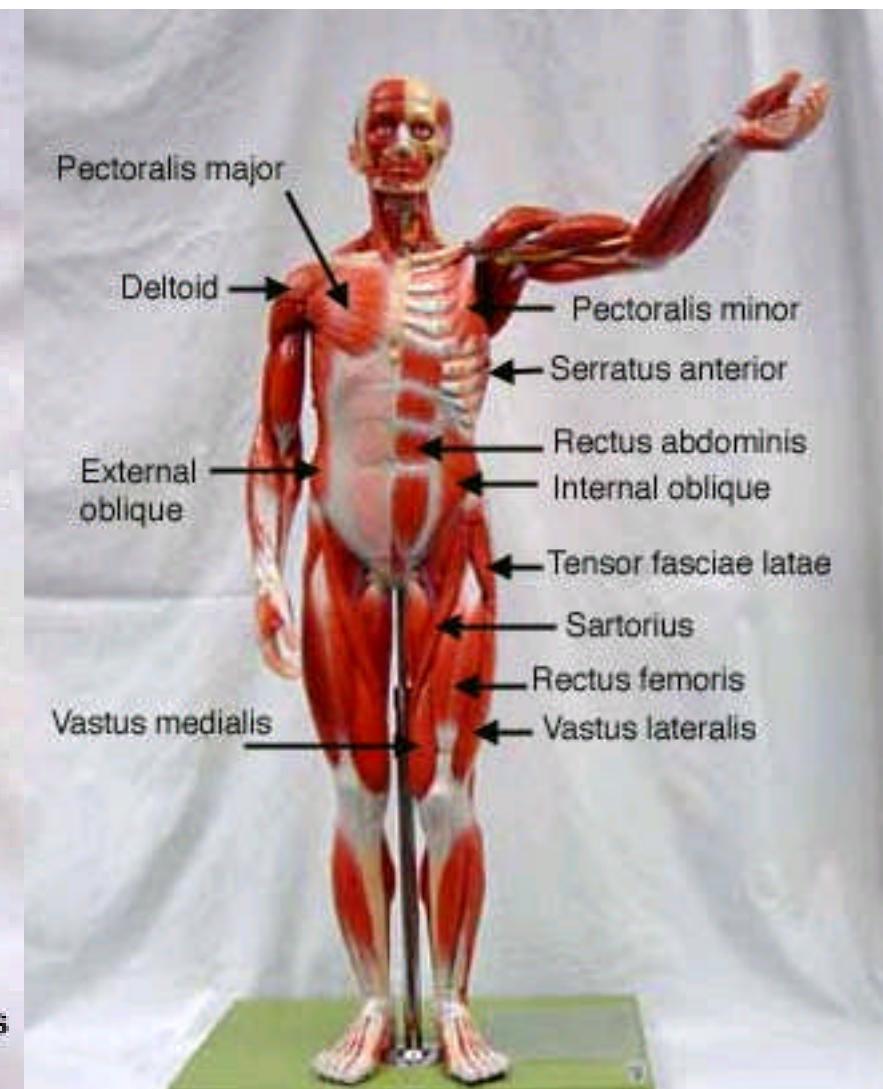
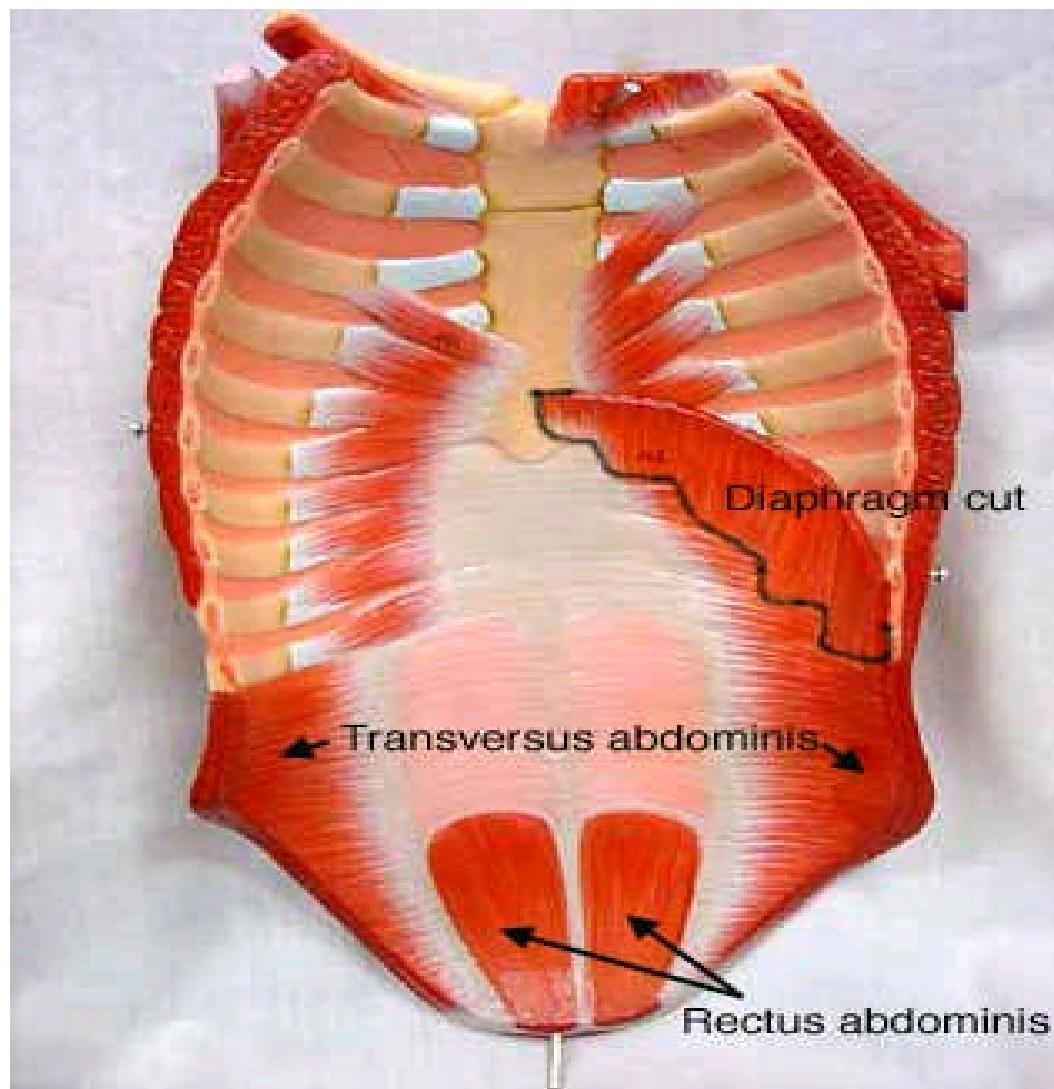


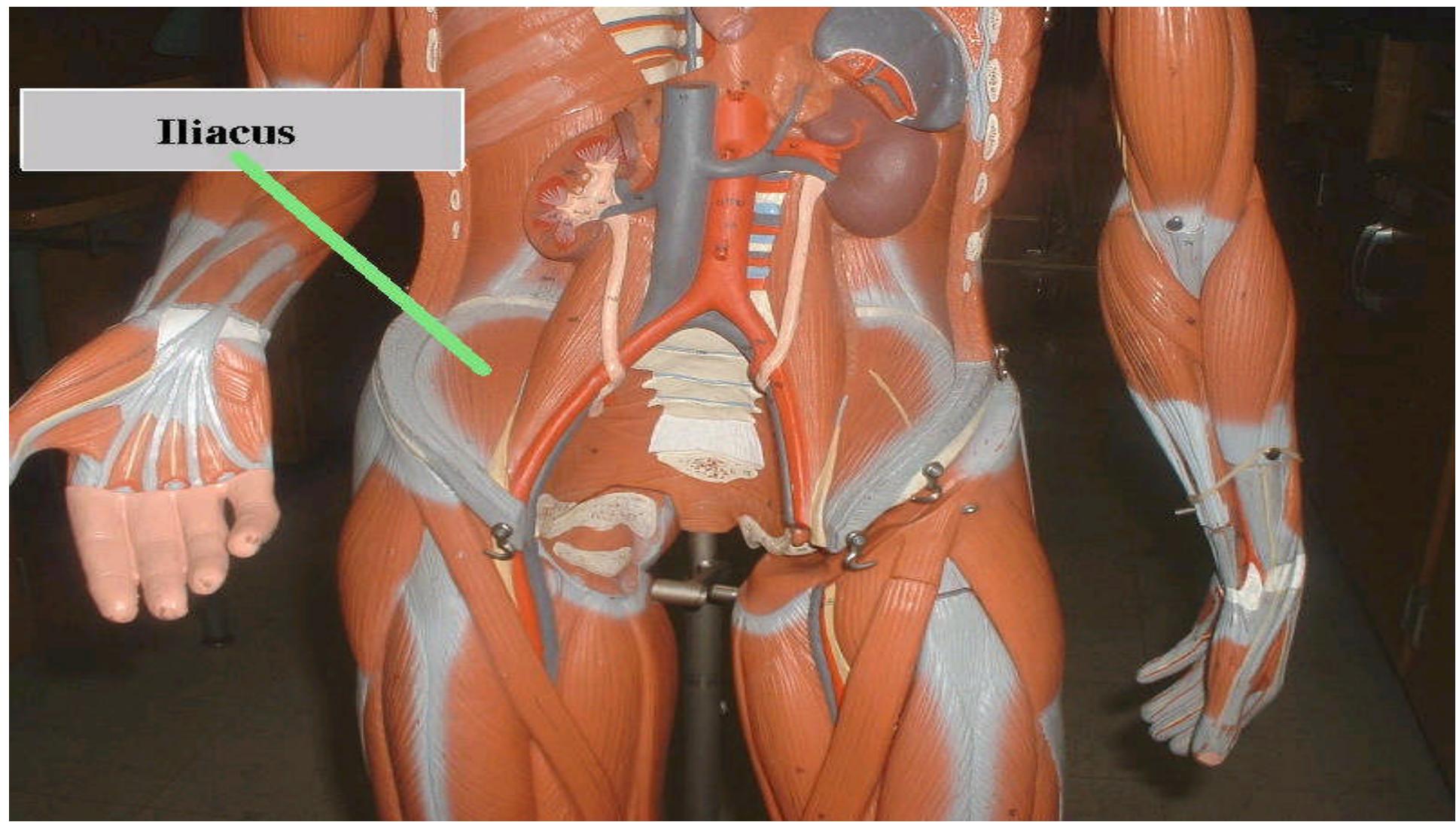


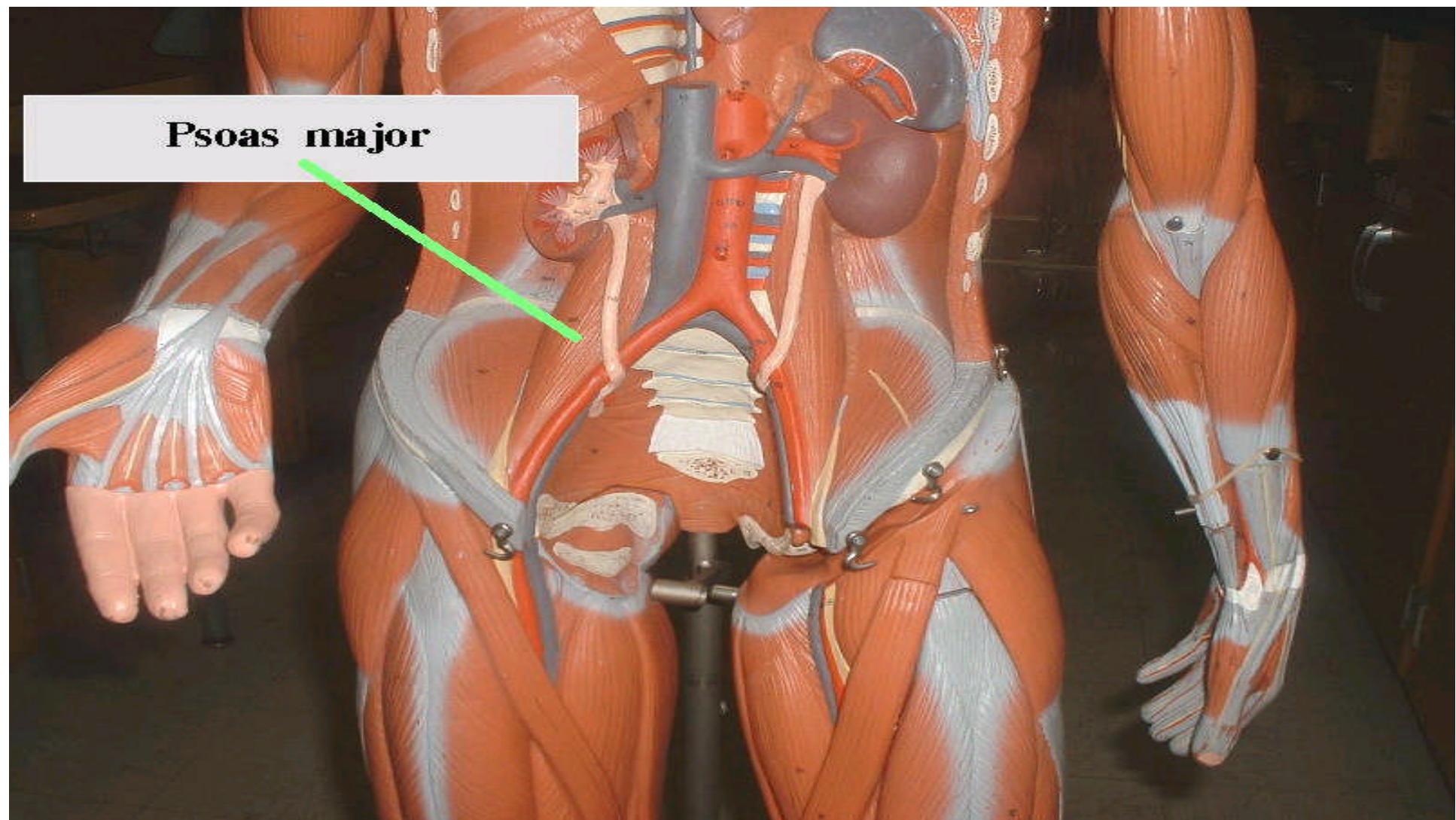
CMMG 2001

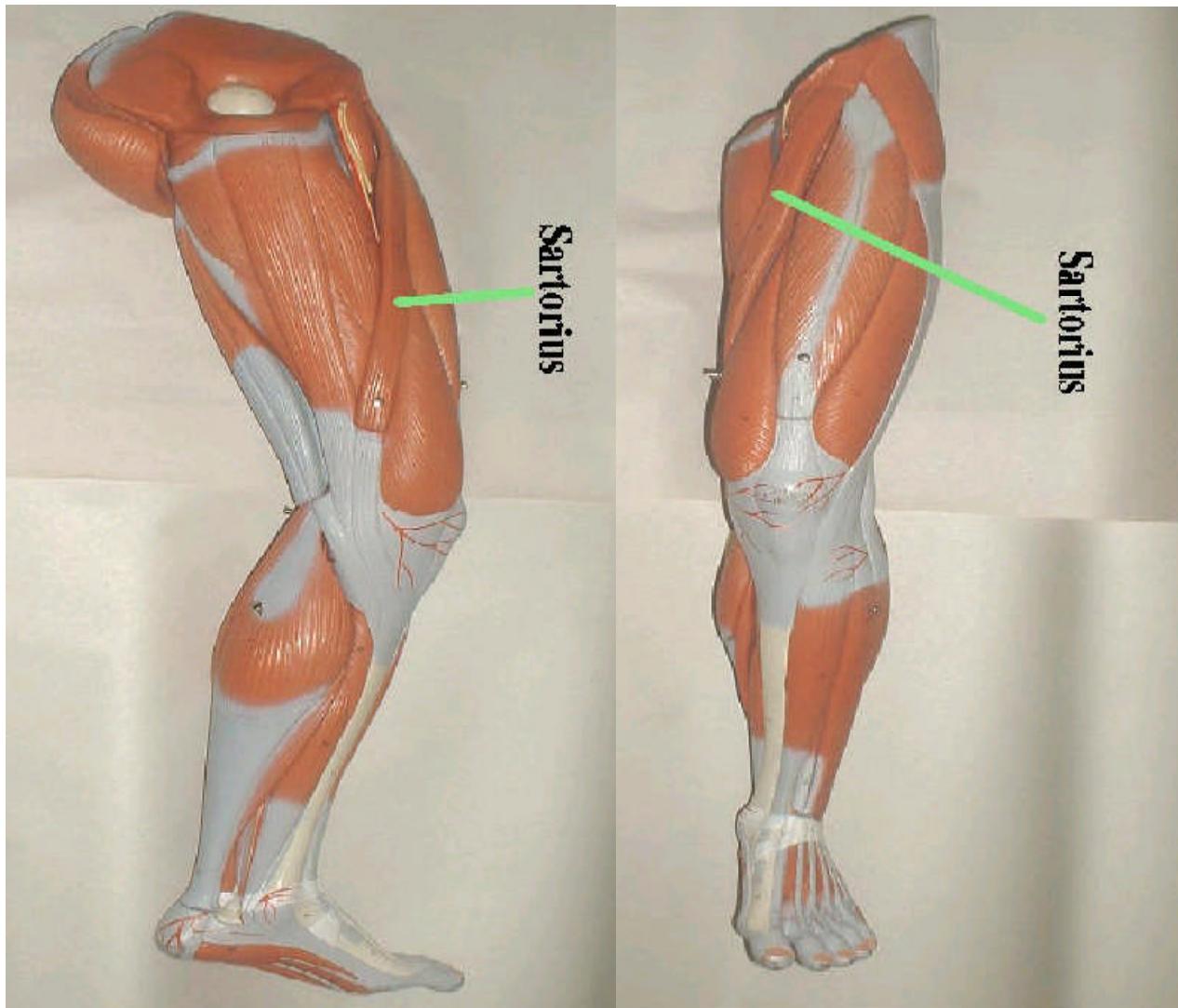










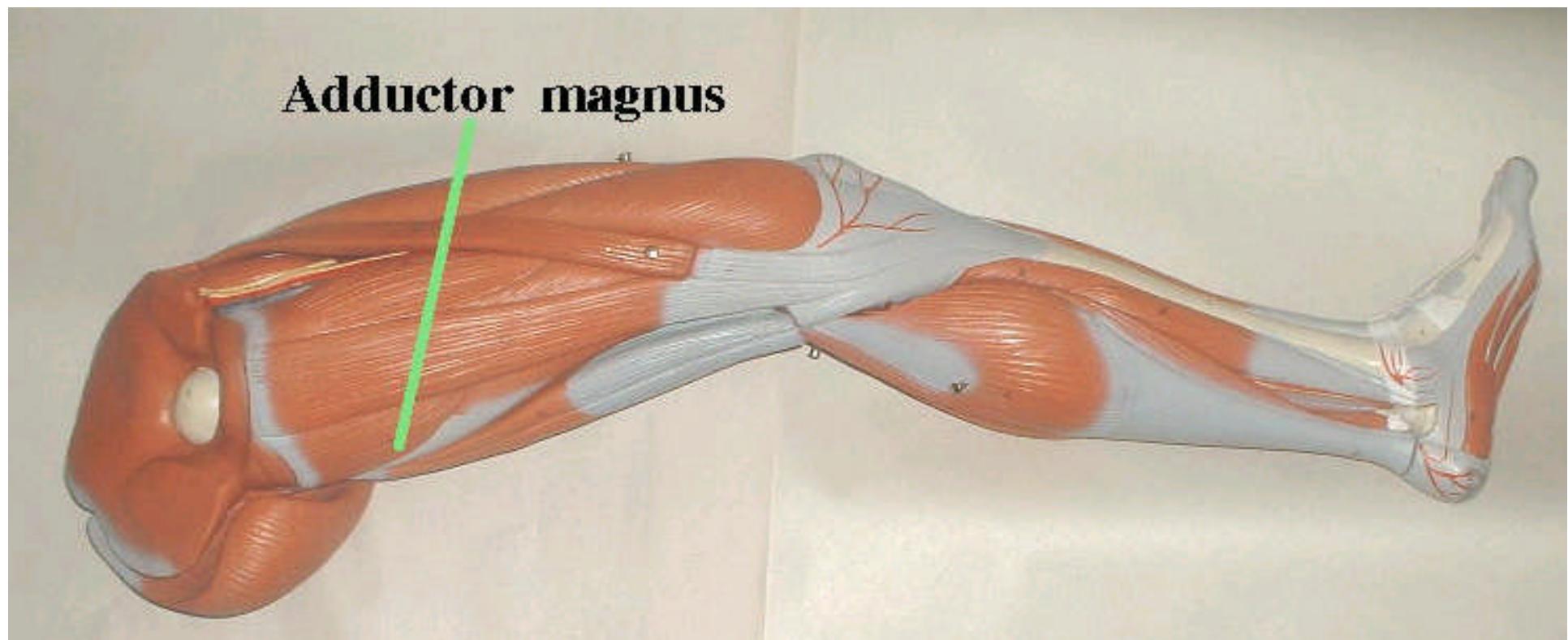


Sartorius.

As this muscle contracts, the
thigh flexes and rotates
[knee and tigh flexors]

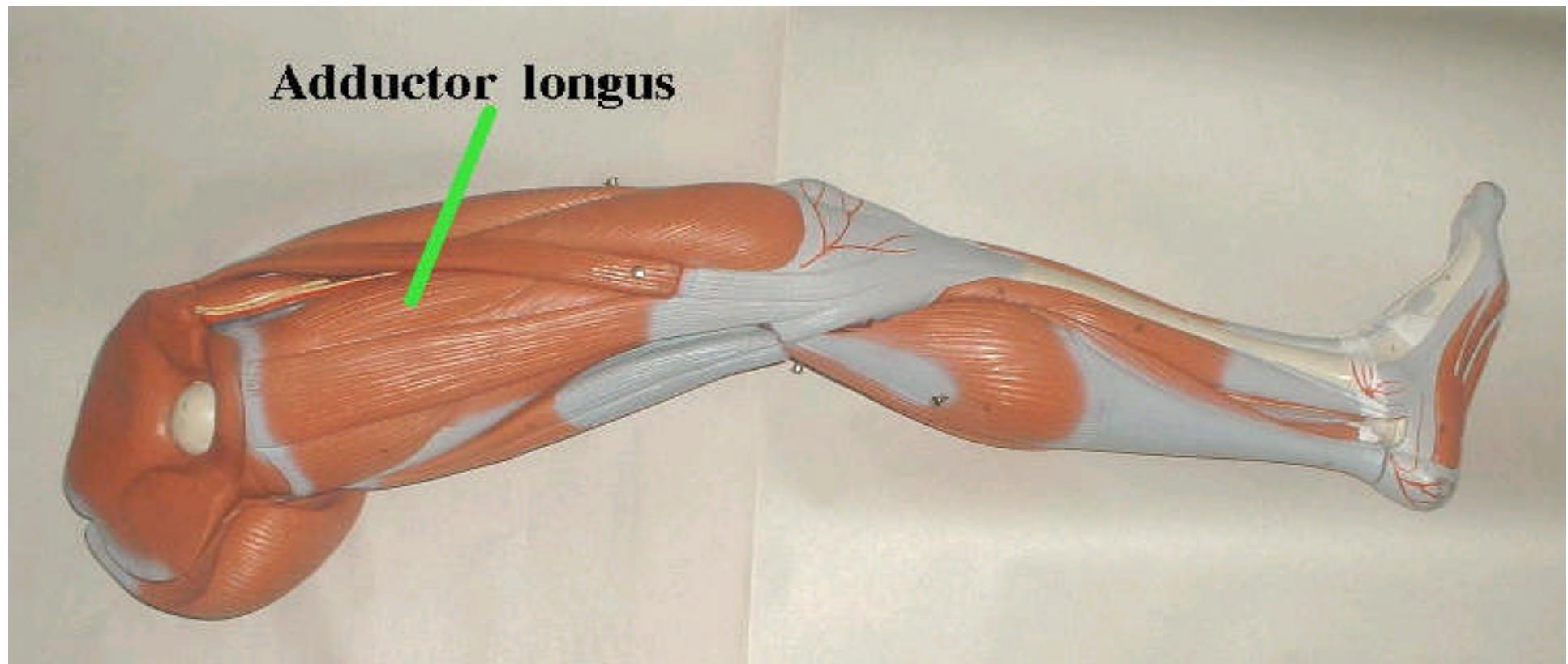
Adductor magnus.

- As the name implies, this muscle adducts the thigh



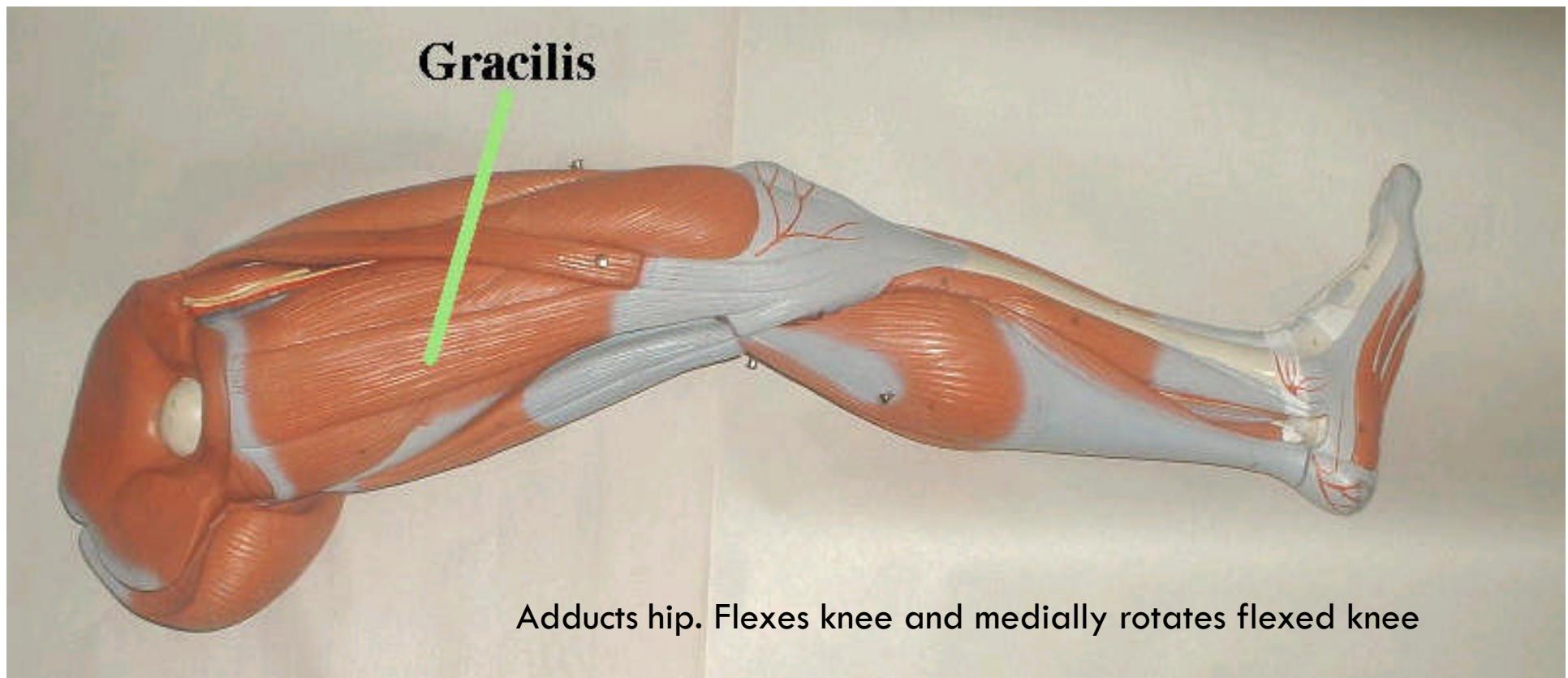
Adductor longus.

- The primary action of this muscle is to adduct the thigh



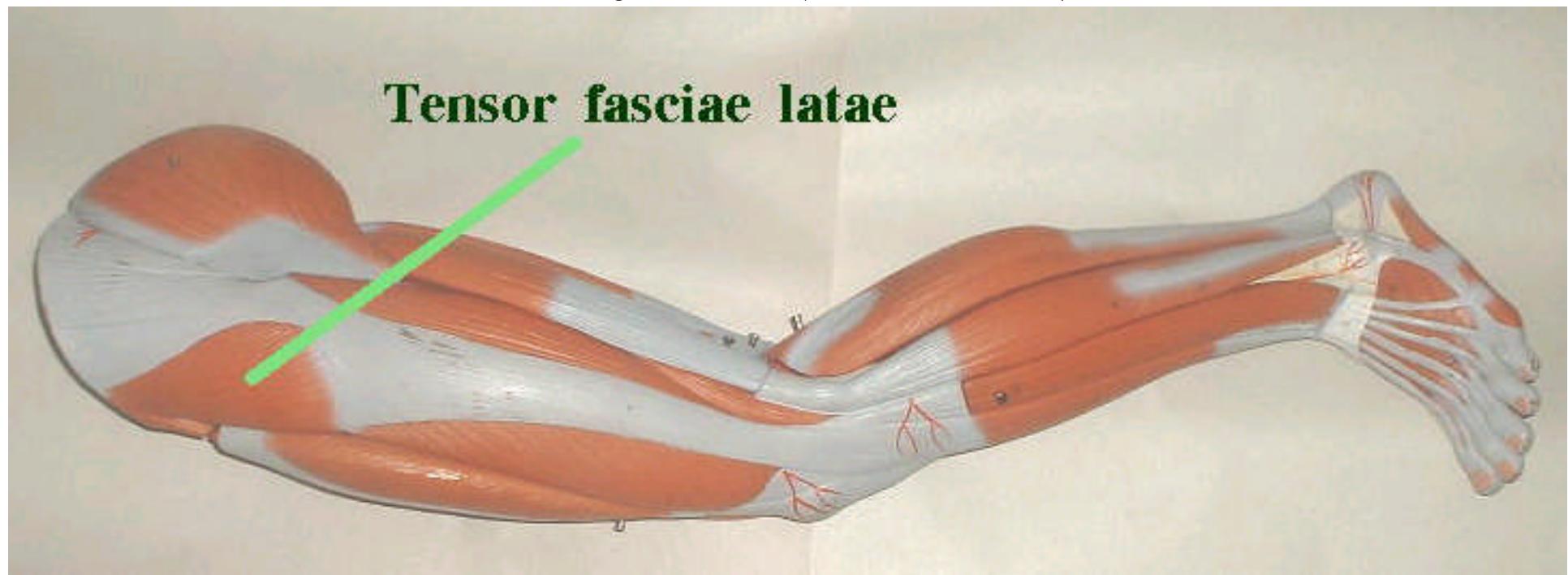
Gracilis.

- This muscle also adducts the thigh



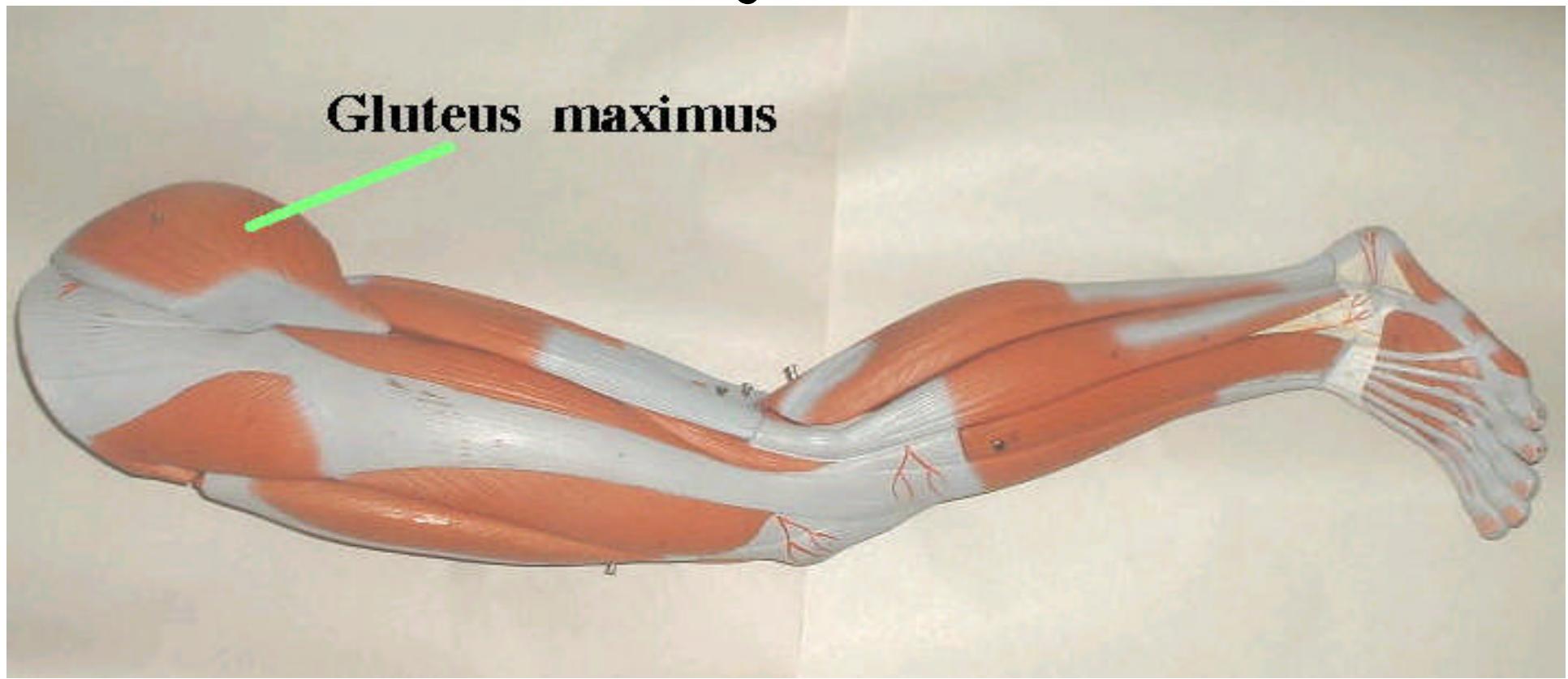
Tensor fascia latae.

- This muscle flexes and abducts the thigh.
- This muscle inserts onto an aponeurosis called the **iliotibial tract**, which is part of the fascia that covers the thigh muscles (the fascia lata).



Gluteus maximus

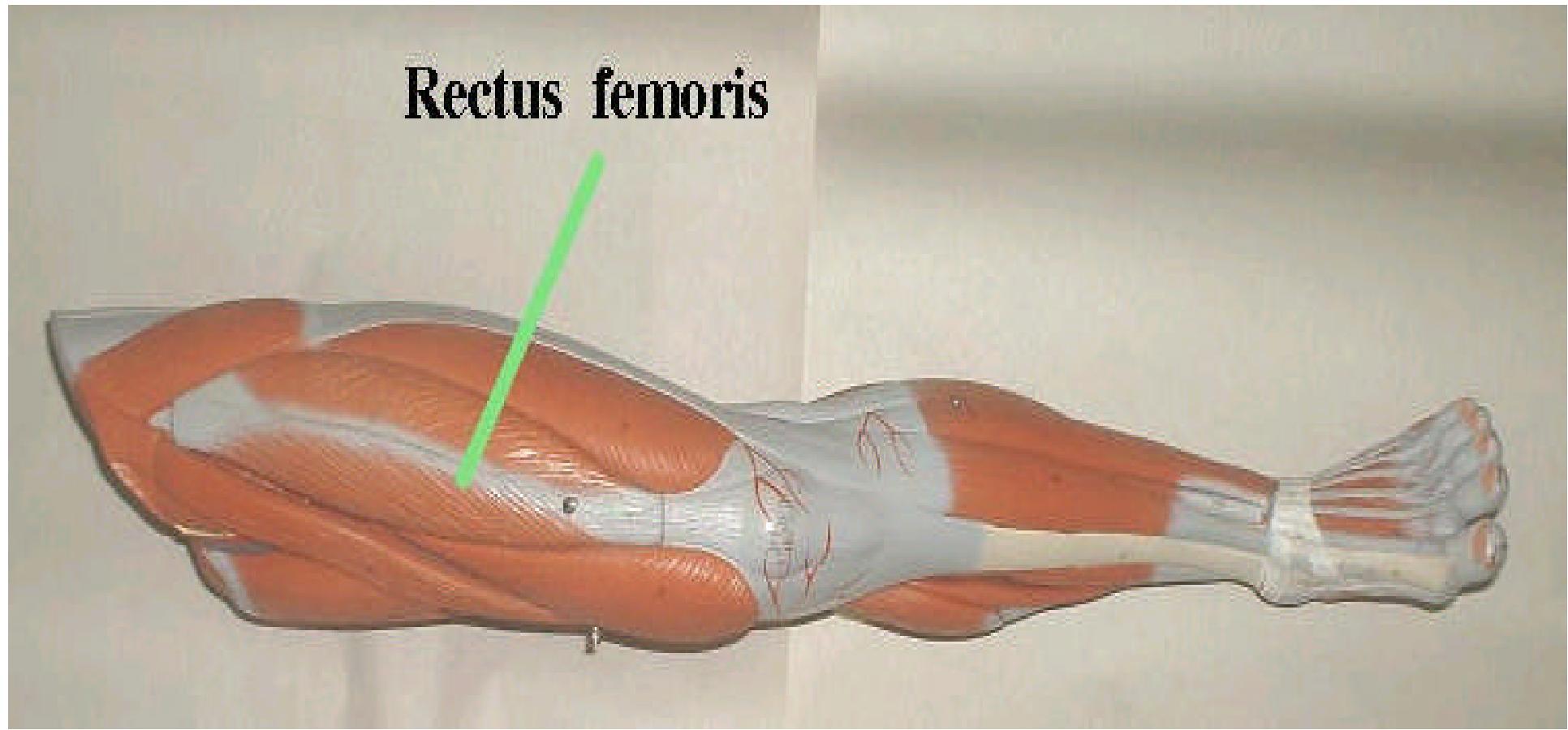
- . This muscle extends the thigh.



Gluteus medius*.

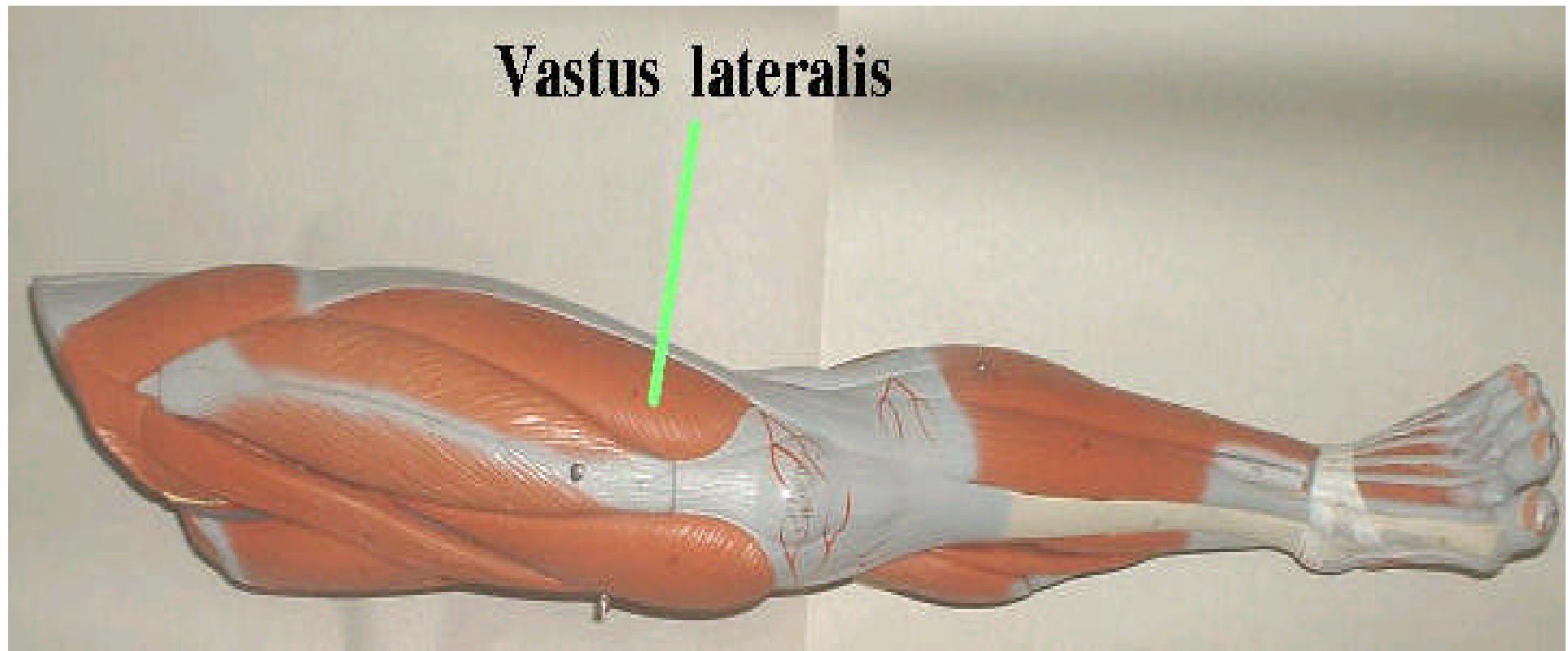


Rectus femoris*.



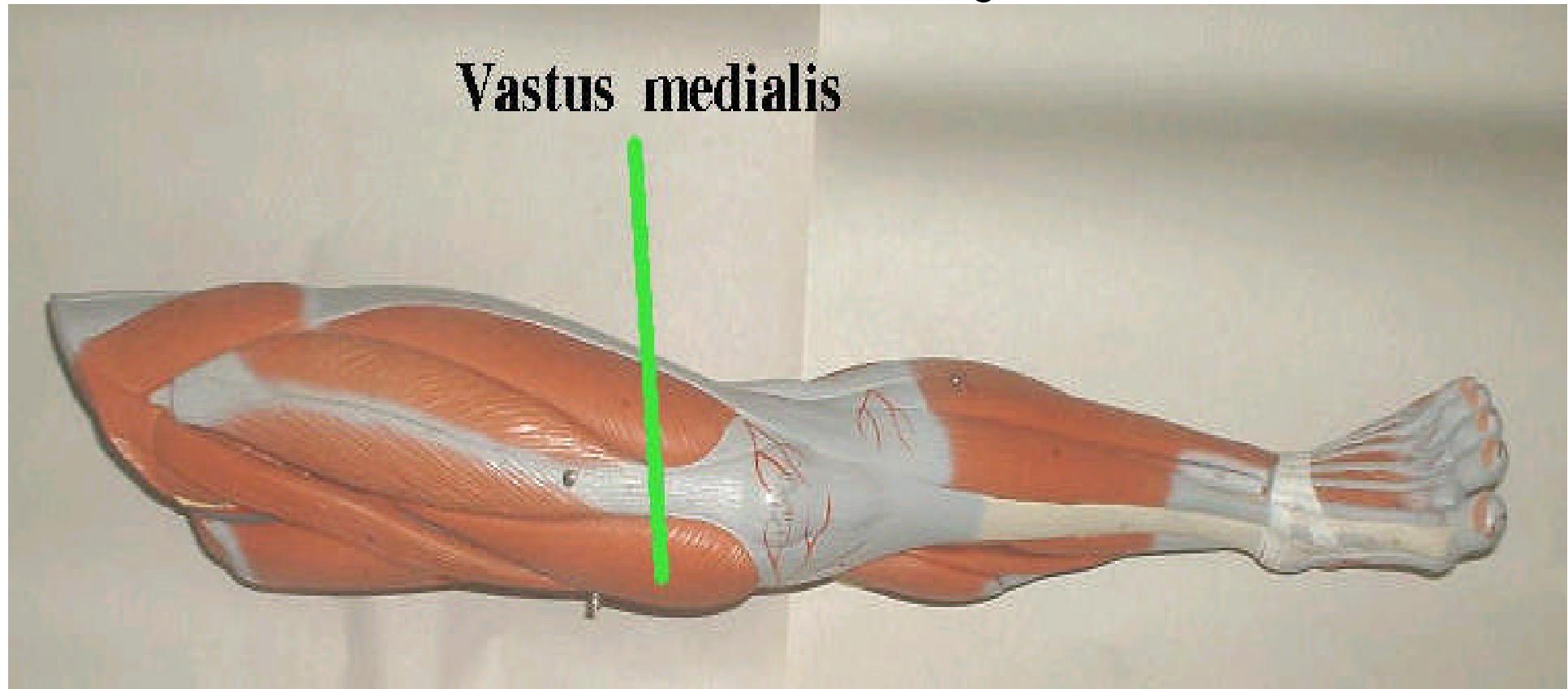
Vastus lateralis.

- This muscle extends the leg



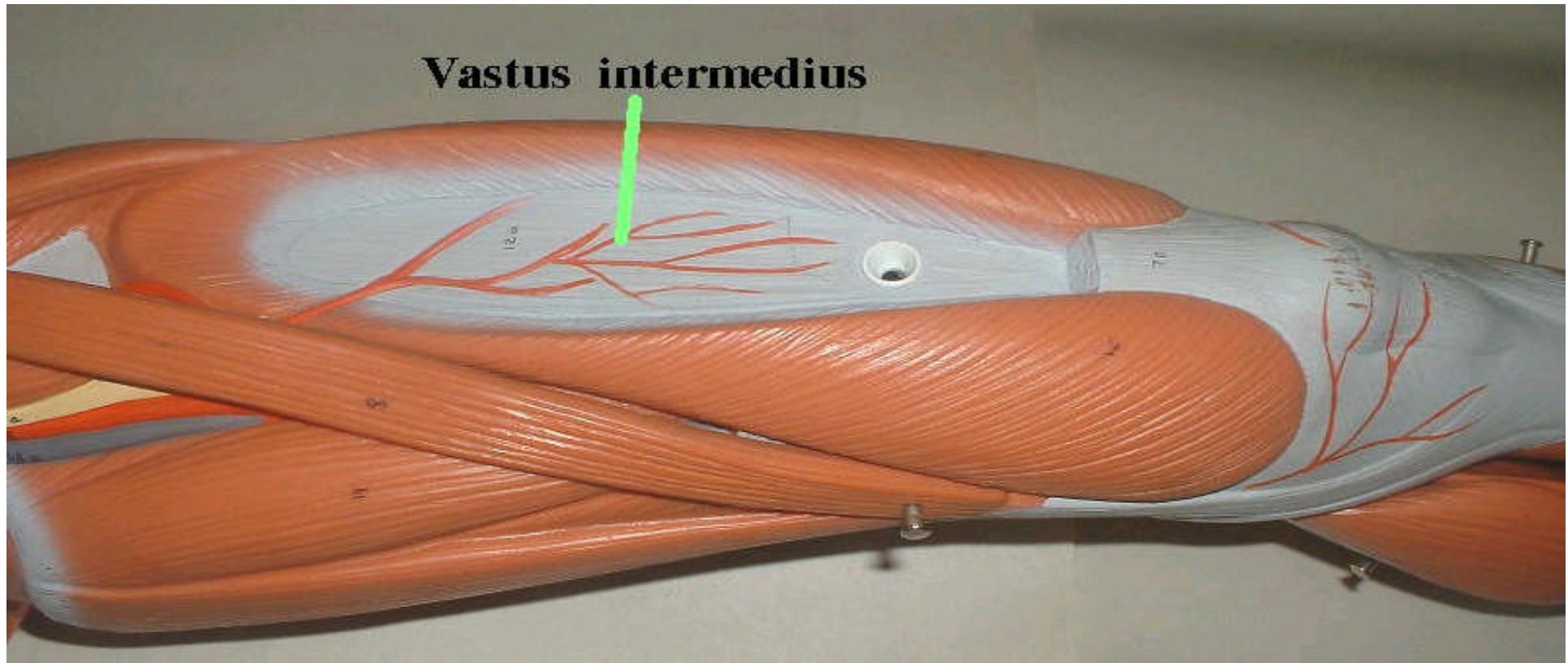
Vastus medialis

- . This muscle extends the leg.



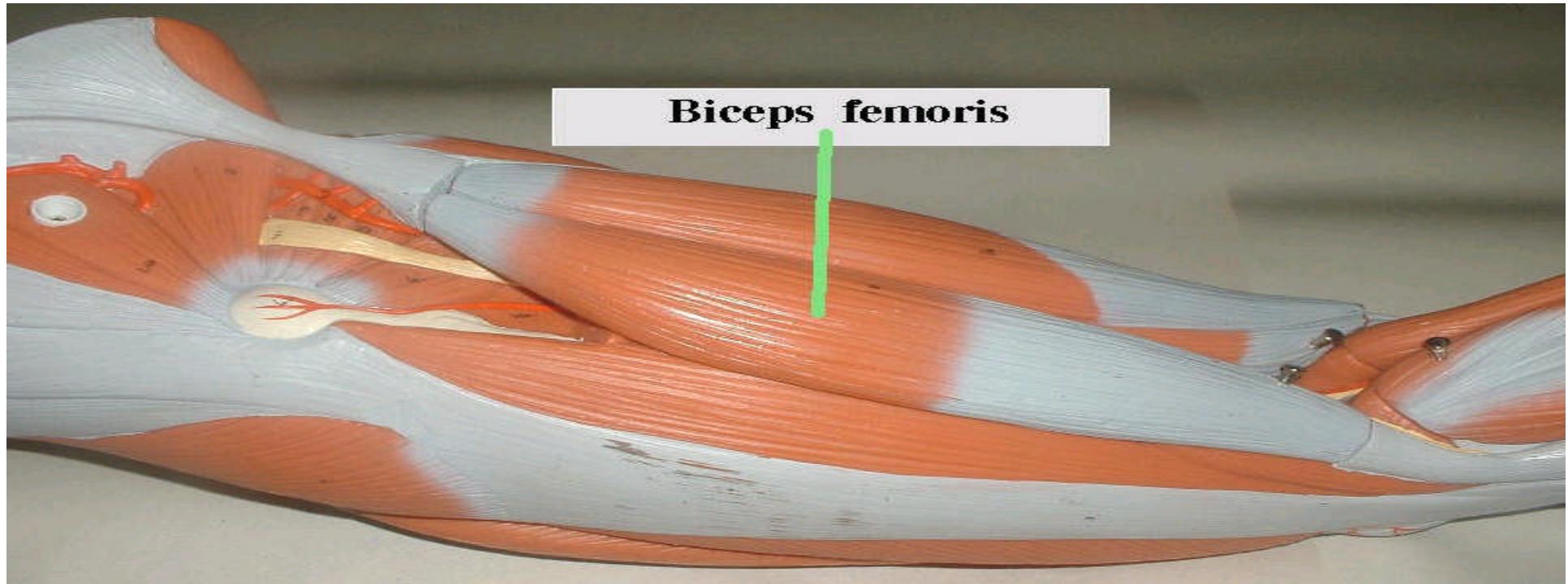
Vastus intermedius

- This muscle extends the leg



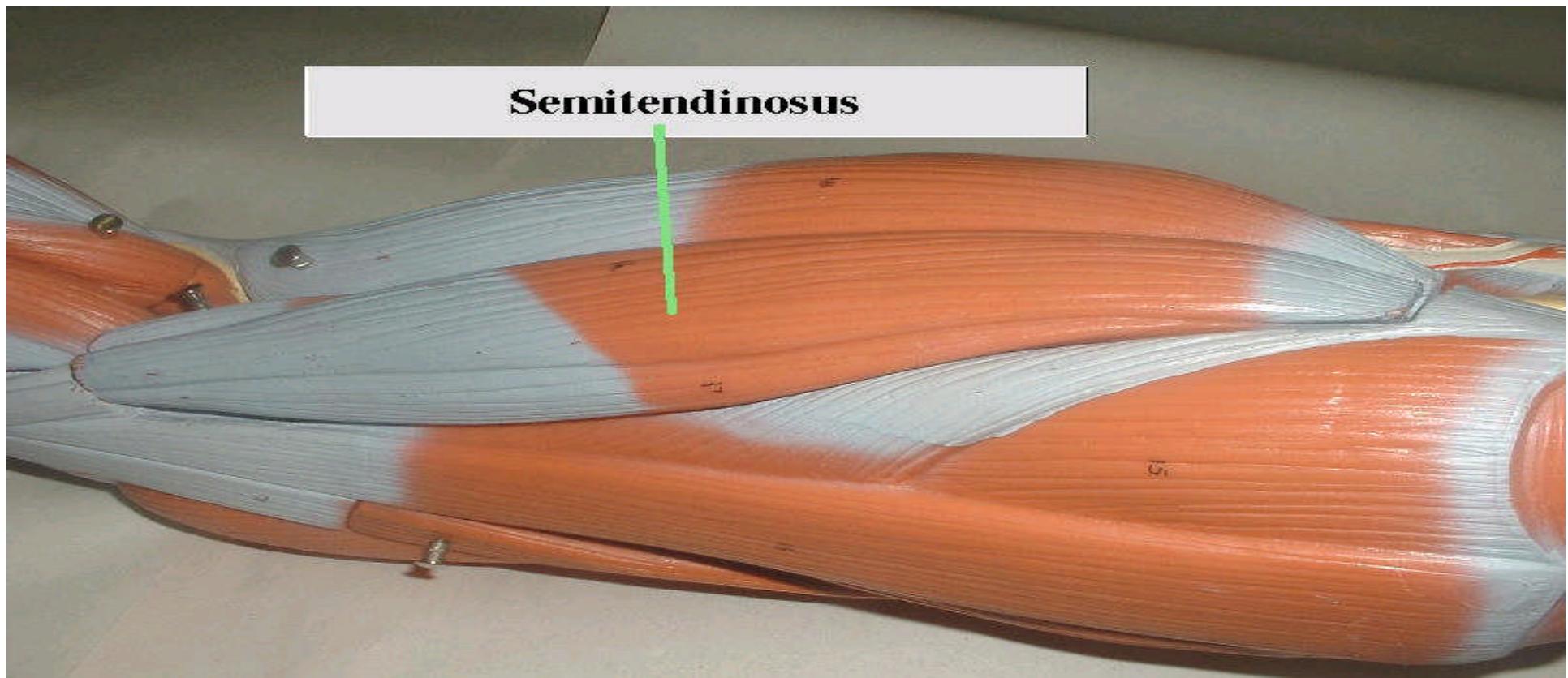
- This muscle flexes the leg.
- It originates on the ischial tuberosity and the linea aspera.
- It inserts on the head of the fibula and next to the lateral condyle of the tibia.

Biceps femoris



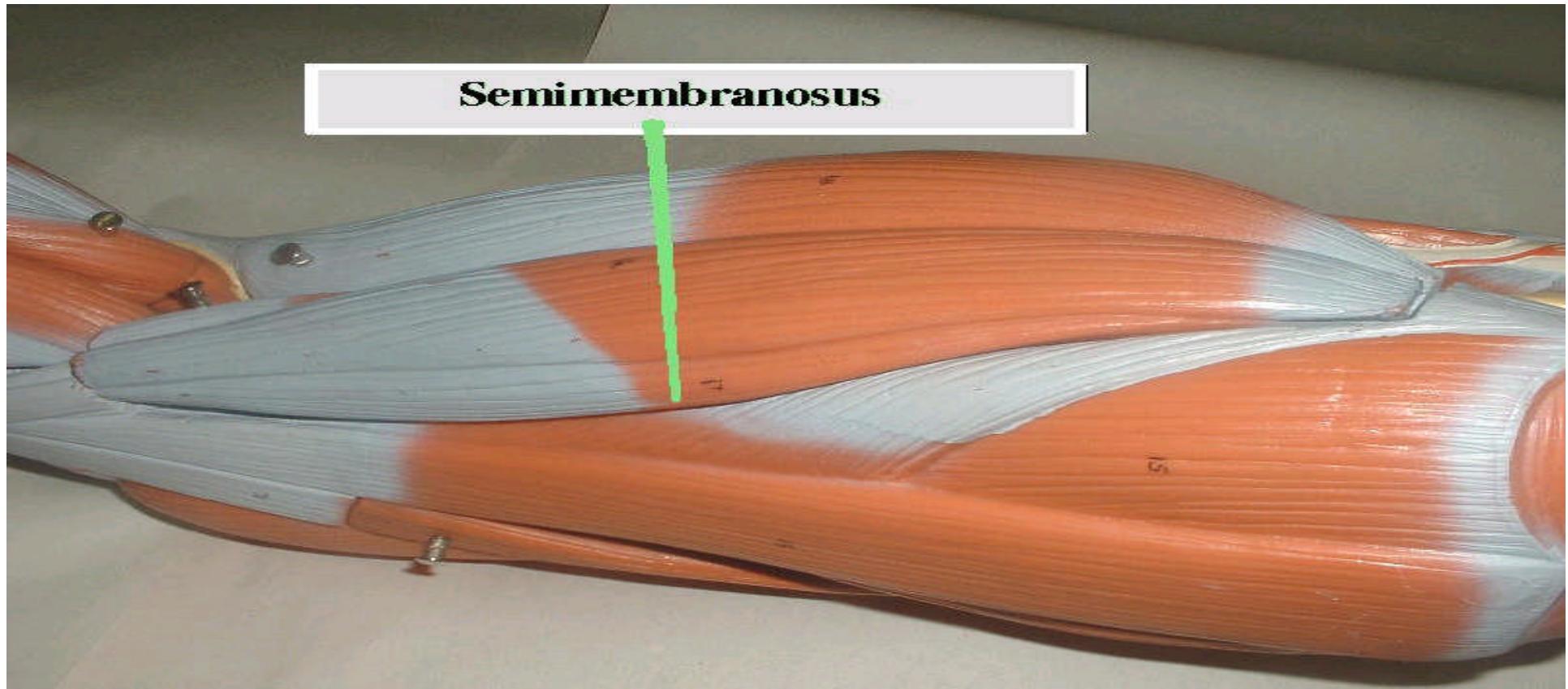
Semitendinosus

- The primary action of this muscle is to flex the leg.



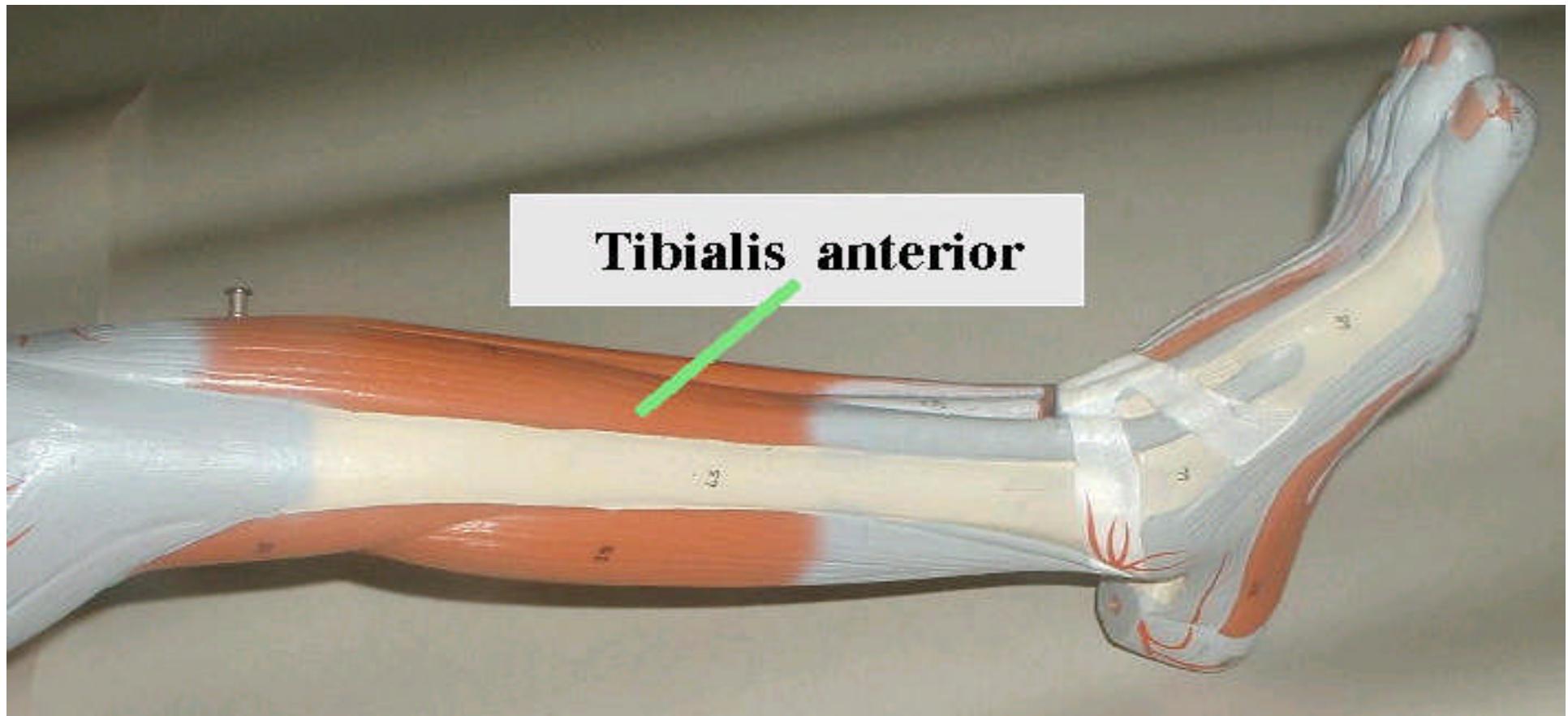
Semimembranosus

- . This muscle also flexes the leg.

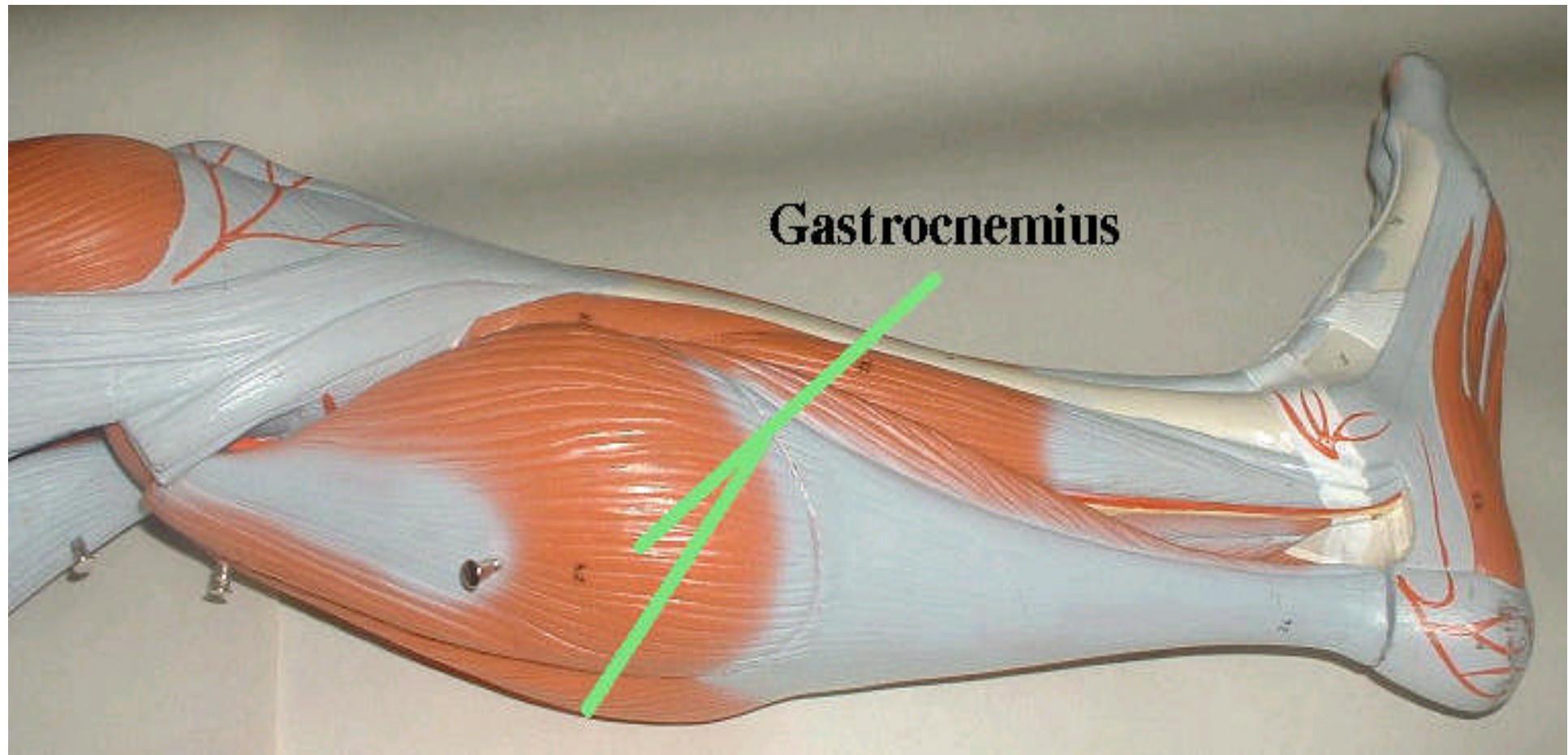


Tibialis anterior

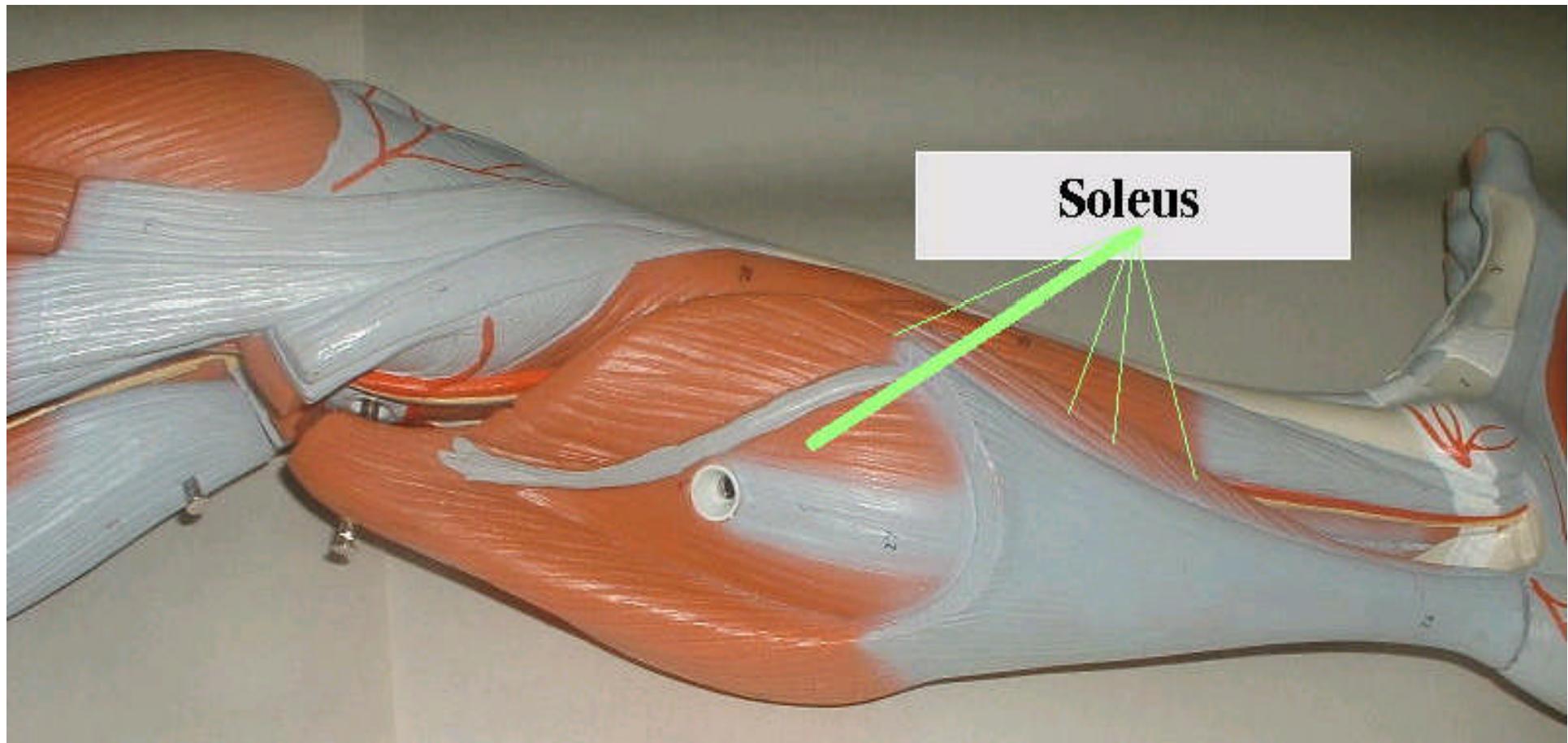
- . The primary action of this muscle is Dorsiflexor of ankle and invertor of foot

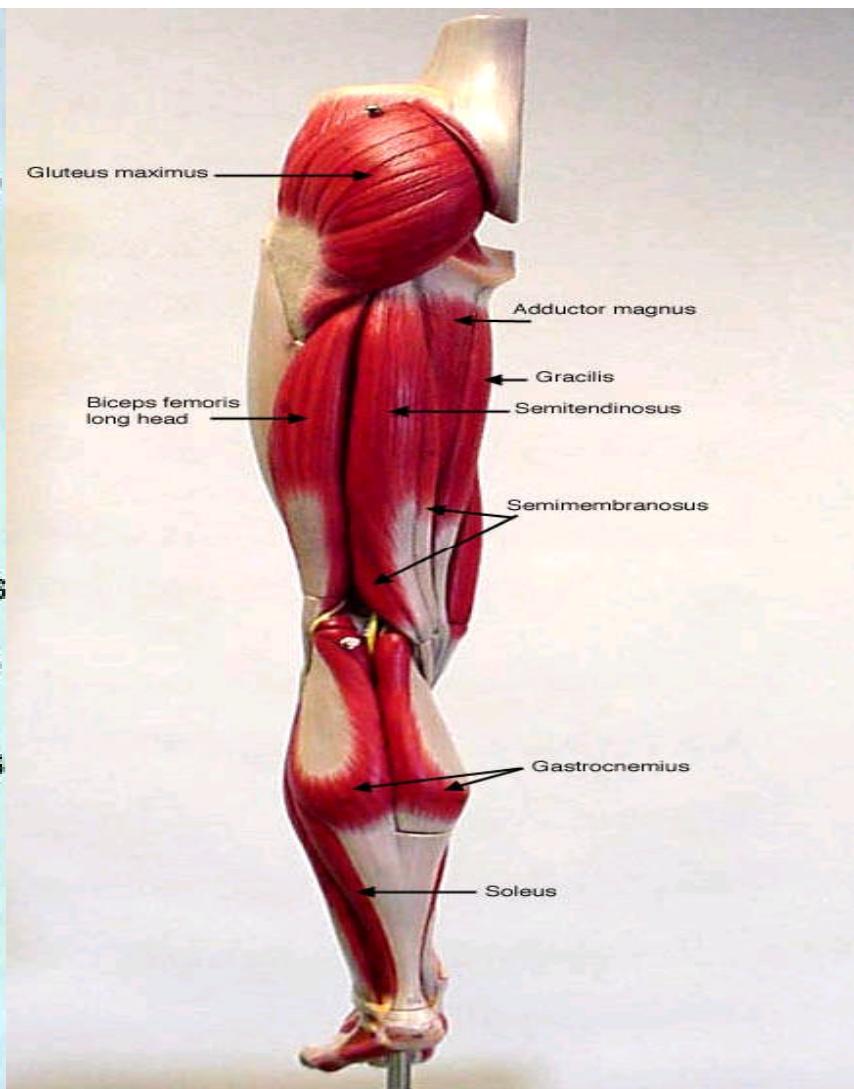
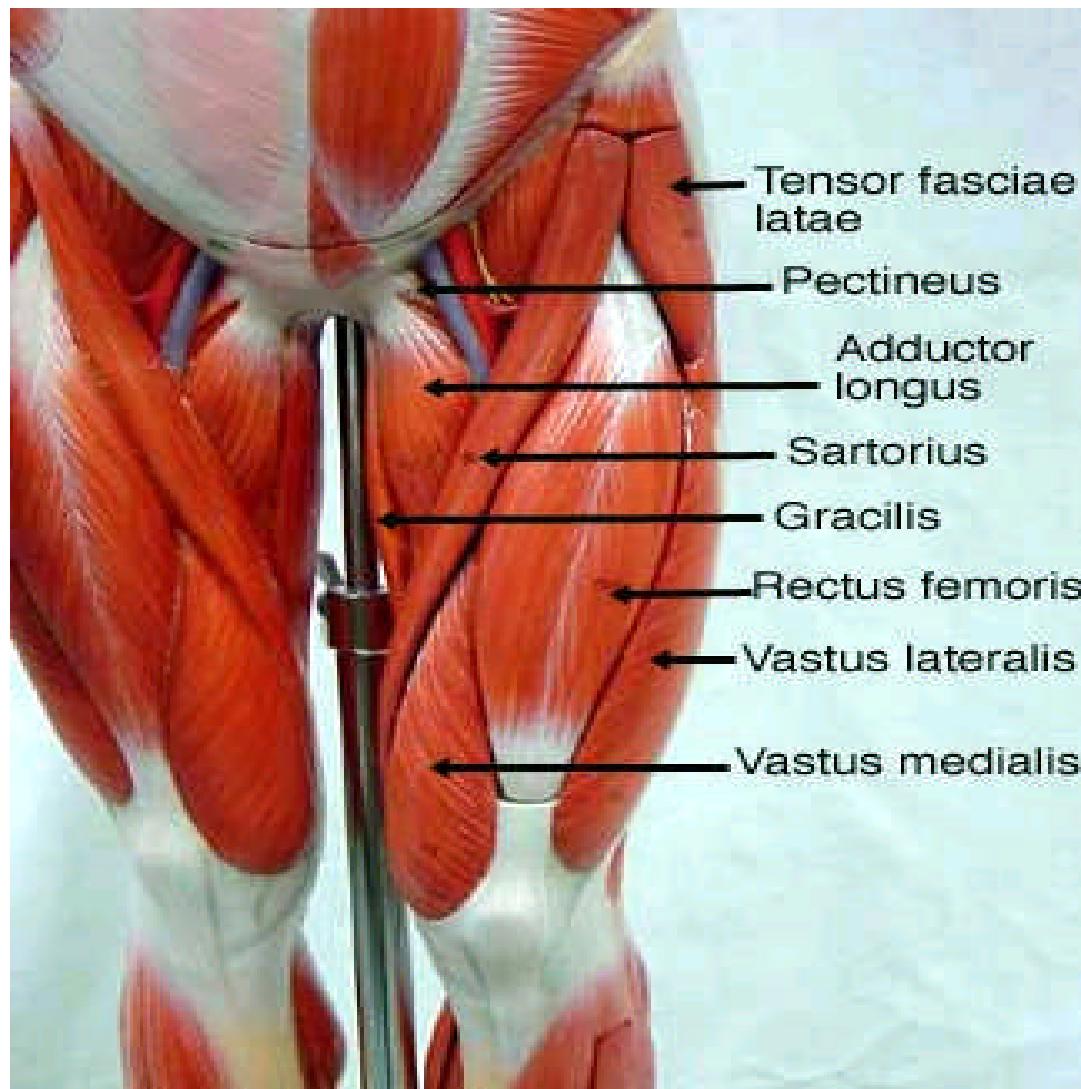


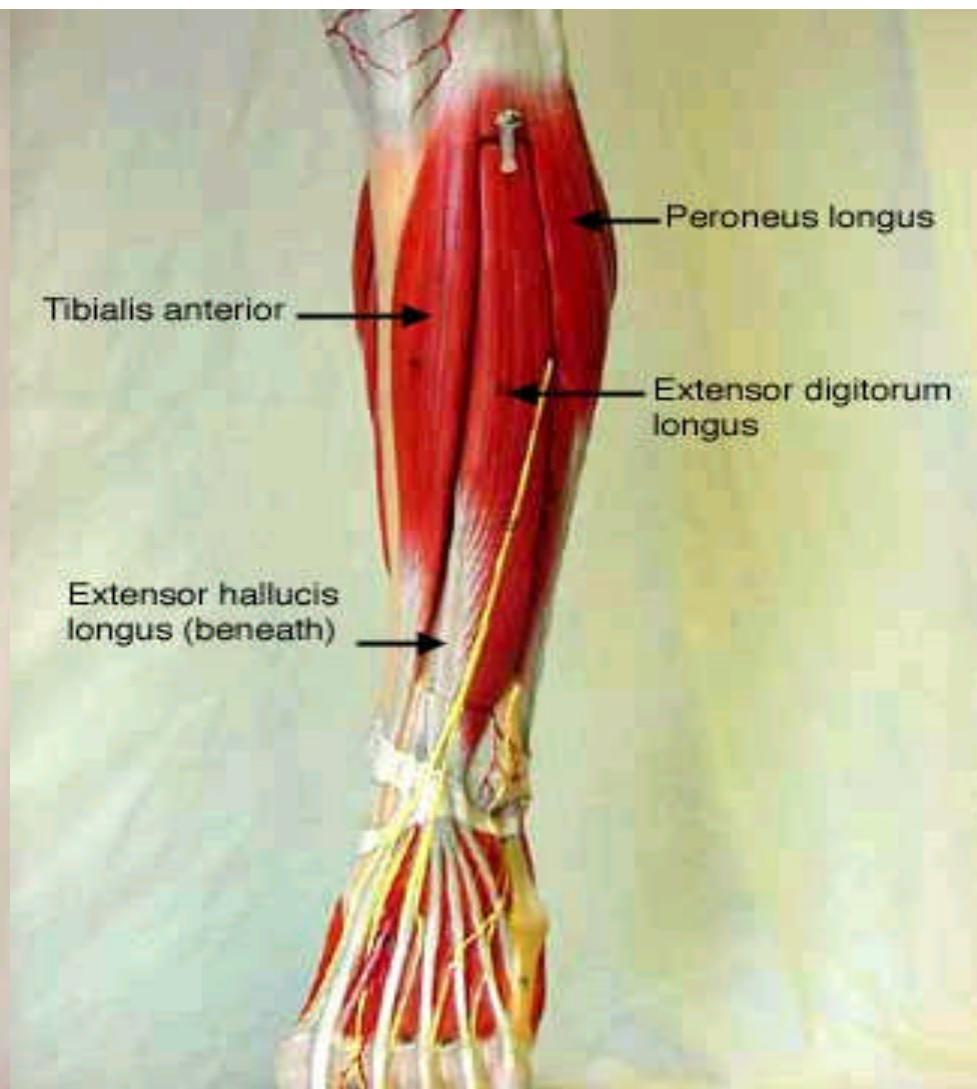
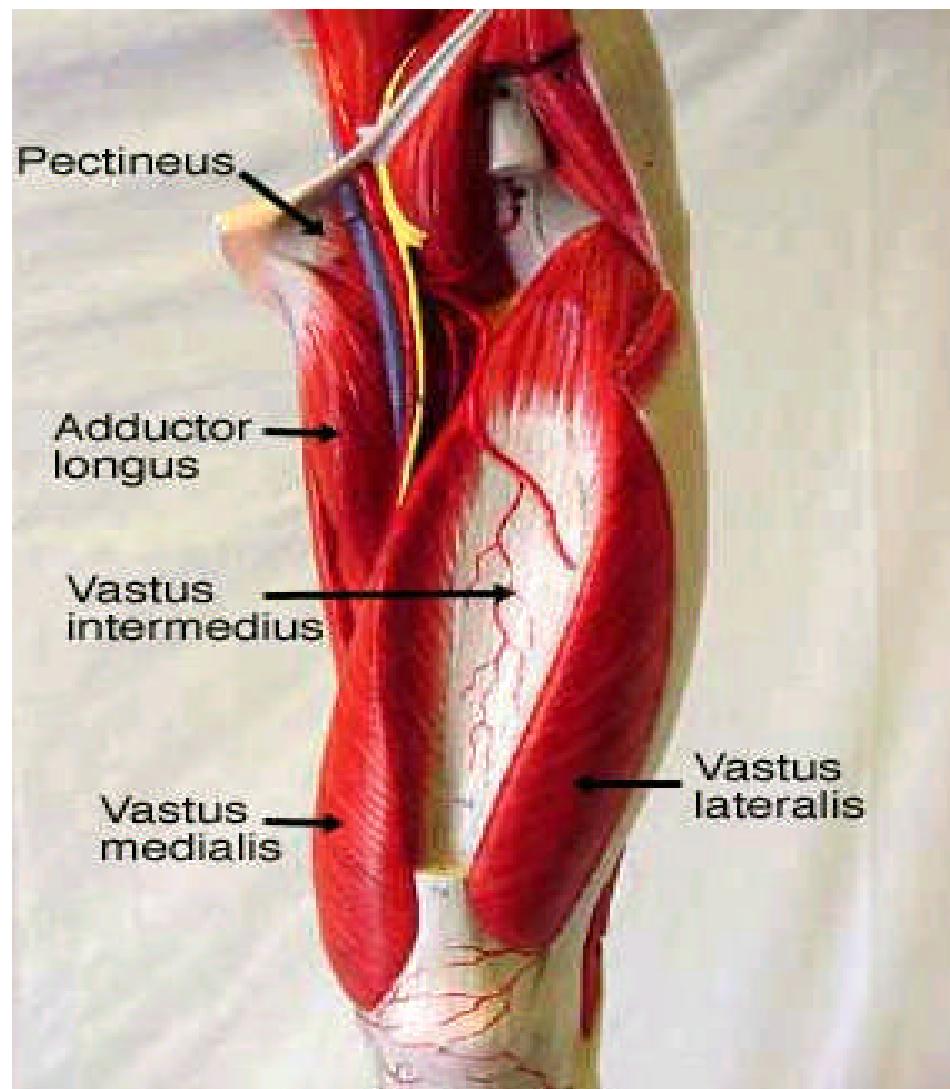
Gastrocnemius*.

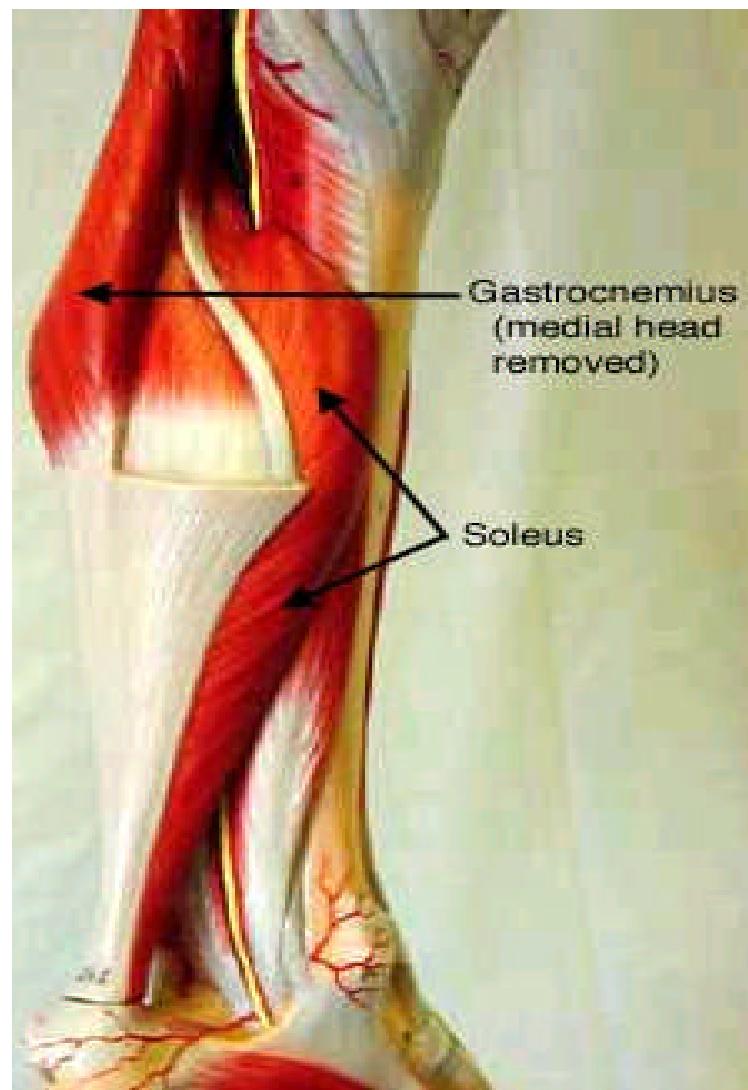


Soleus.



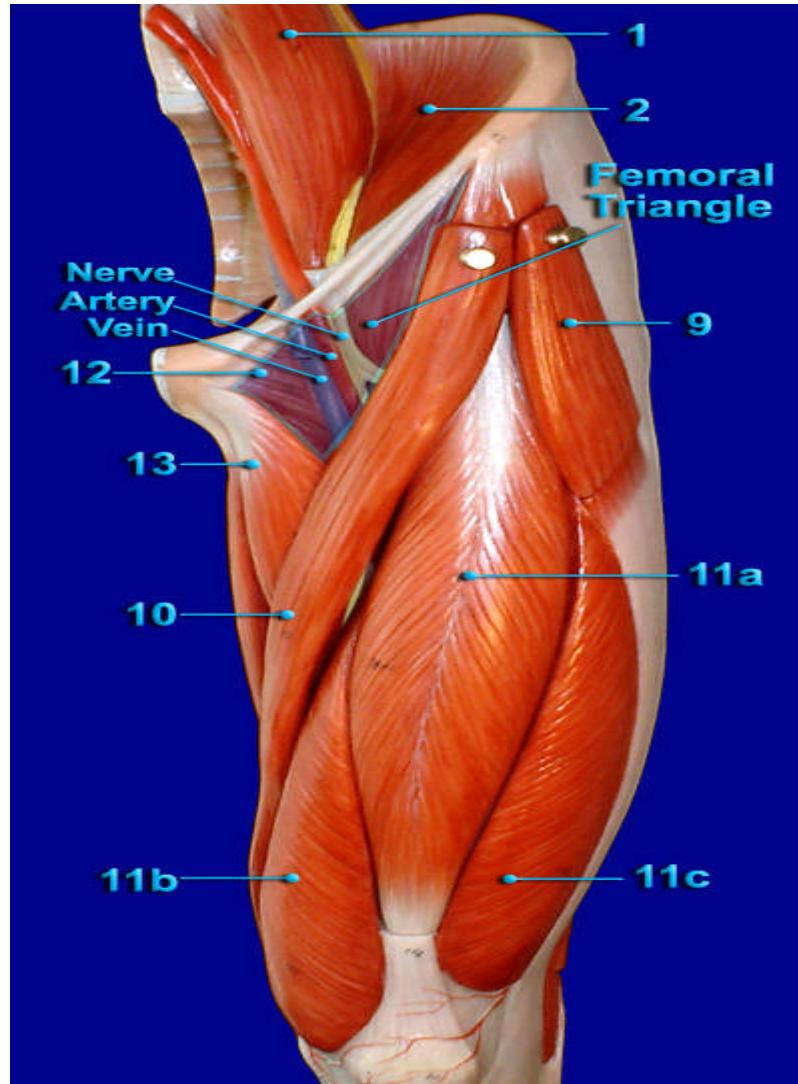






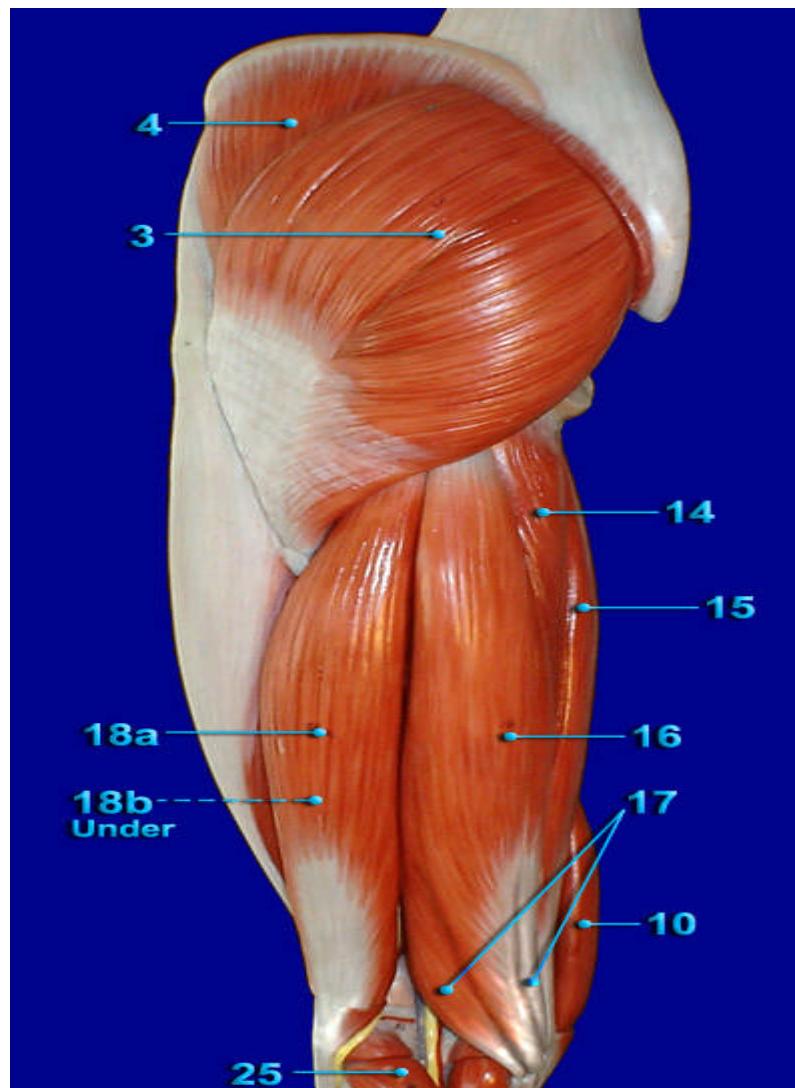
Gastrocnemius
(medial head
removed)

Soleus



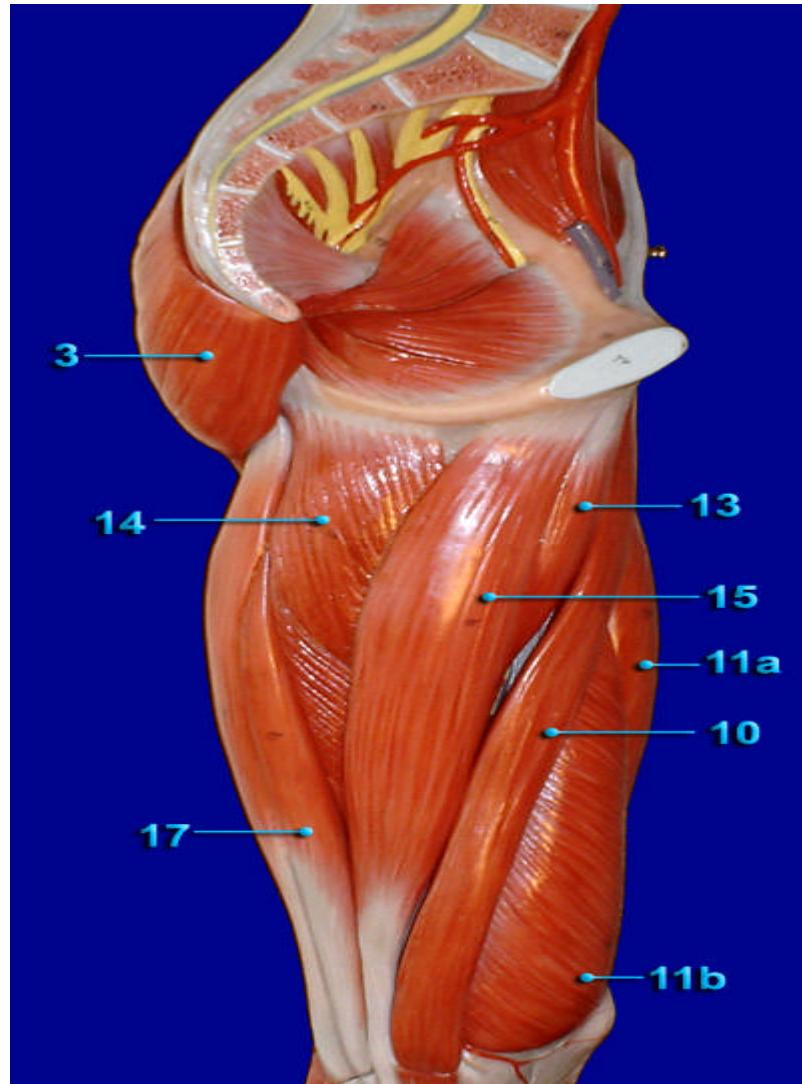
1. Psoas Major
2. Iliacus
9. Tensor Fasciae Latae
10. Sartorius
- 11a. Rectus Femoris

- 11b. Vastus Medialis
- 11c. Vastus Lateralis
12. Pectineus
13. Adductor Longus



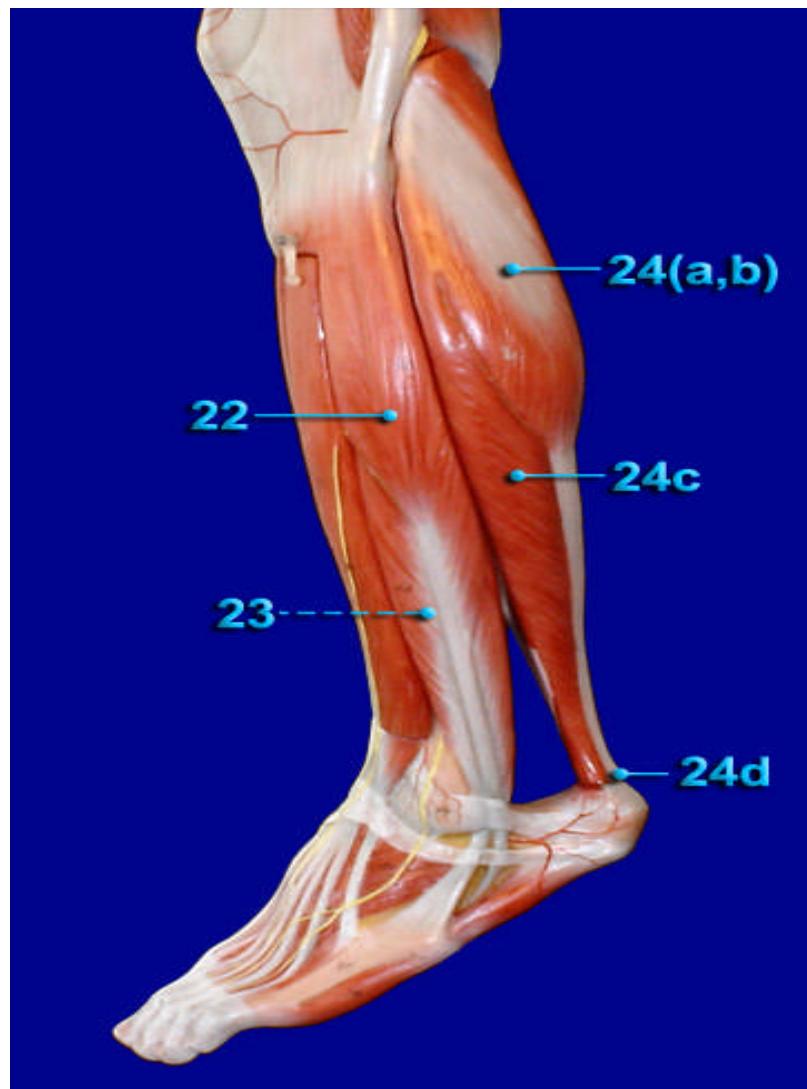
3. Gluteus Maximus
4. Gluteus Medius
10. Satorius
14. Adductor Magus
15. Gracilis

16. Semitendinosus
17. Semimembranosus
18a. Biceps Femoris (long head)
18b. Biceps Femoris (short head)
25. Plantaris

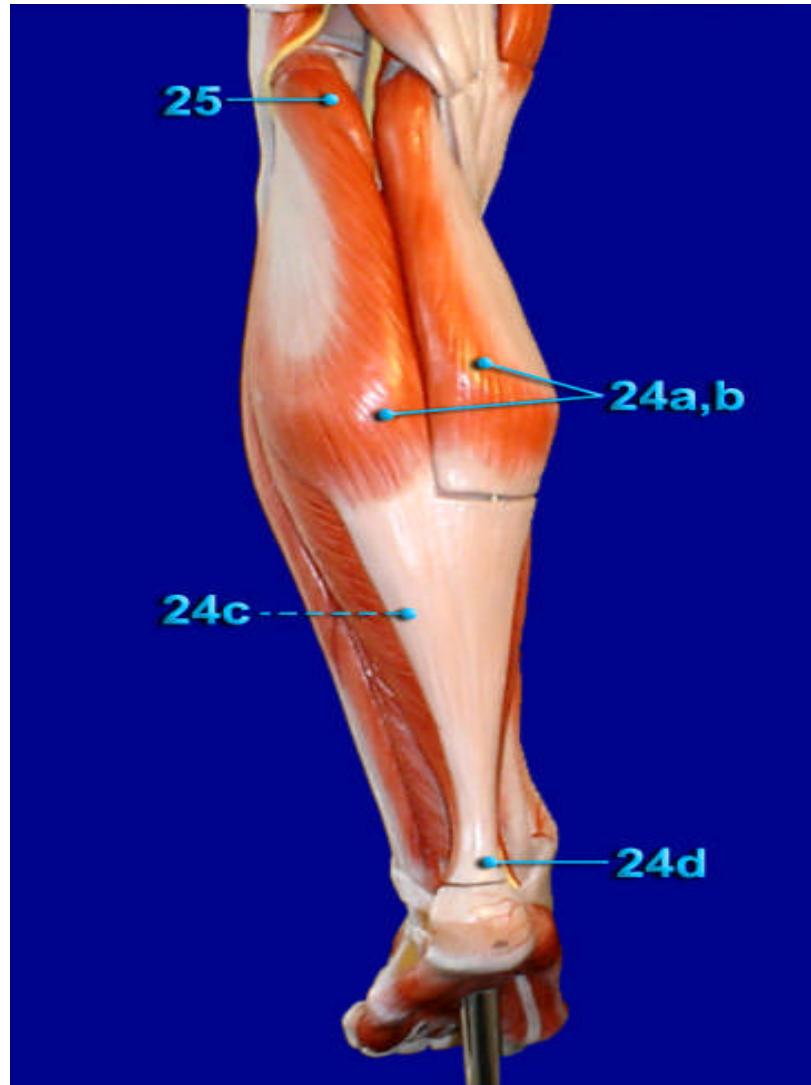


3. Gluteus Maximus
10. Sartorius
11a. Rectus Femoris
11b. Vastus Medialis

13. Adductor Longus
14. Adductor Magnus
15. Gracilis
17. Semimembranosus



22. Peroneus (Fibularis) Longus
23. Peroneus (Fibularis) Brevis
24(a,b). Gastrocnemius
24(c). Soleus
24(d). Achilles Tendon



25. Plantaris
24 (a,b). Gastrocnemius (medial
and lateral heads)

24c. Soleus Muscle
(underneath tendon)
24d. Achilles Tendon

