

## Module 9 LO5

# Appendicular Musculature: Lower Limb Muscles

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[Link to video recording](#)

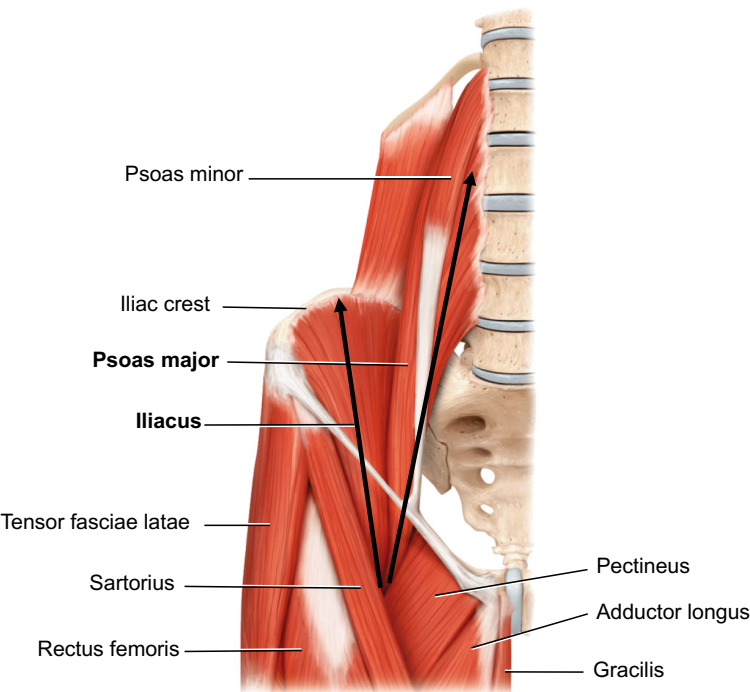
## **5. Appendicular Musculature: Lower Limb**

- a. Group 1:** move the thigh at the hip
- b. Group 2:** move the leg at the knee
- c. Group 3:** move the foot at the ankle
- d. Group 4:** move the digits

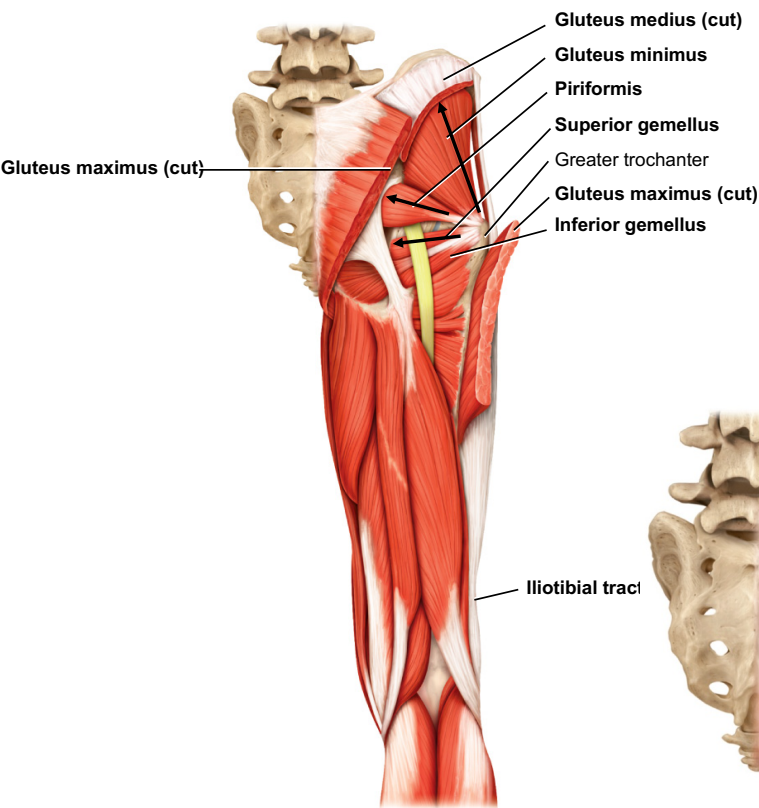
**a. Group 1: Move Thigh at Hip**

**Origin:** Pelvic bones

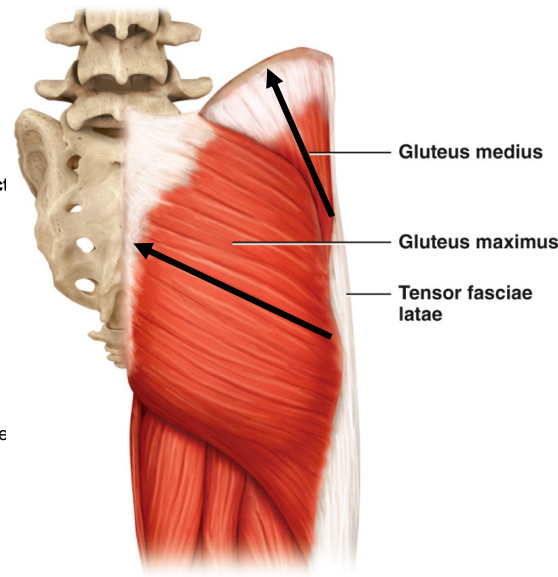
**Insertion:** Femur



(a) Anterior deep view

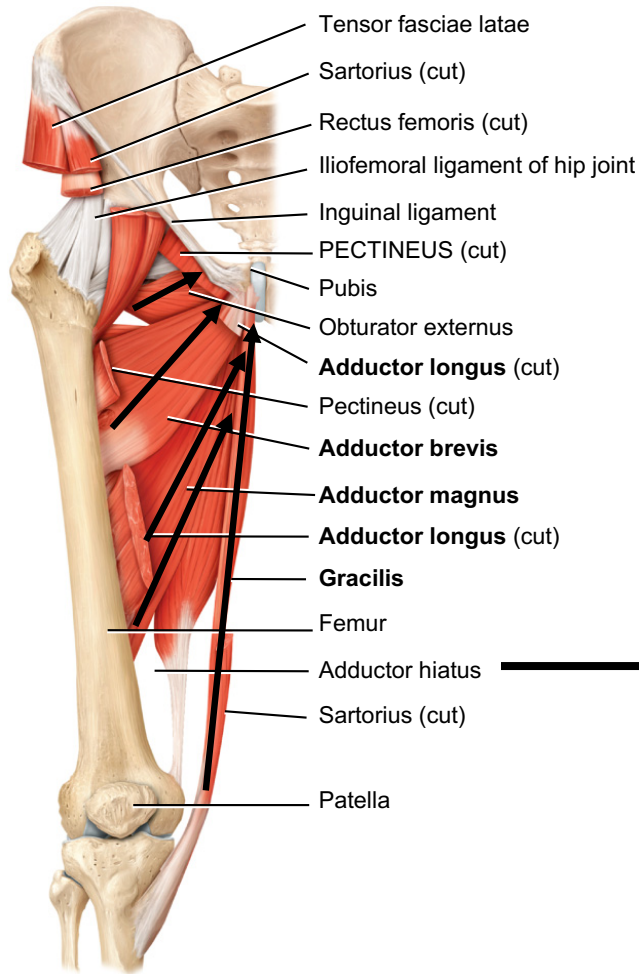


(e) Posterior superficial view of thigh and deep view of gluteal re



(b) Posterior superficial view

## a. Group 1: Move Thigh at Hip



**Origin:** Pelvic bones

**Insertion:** Femur

**ADDUCTOR HIATUS**  
through which femoral artery & vein  
travel on their way to the leg

(c) Anterior deep view (femur rotated laterally)



# Thigh Adductors



Adductor longus



Gracilis



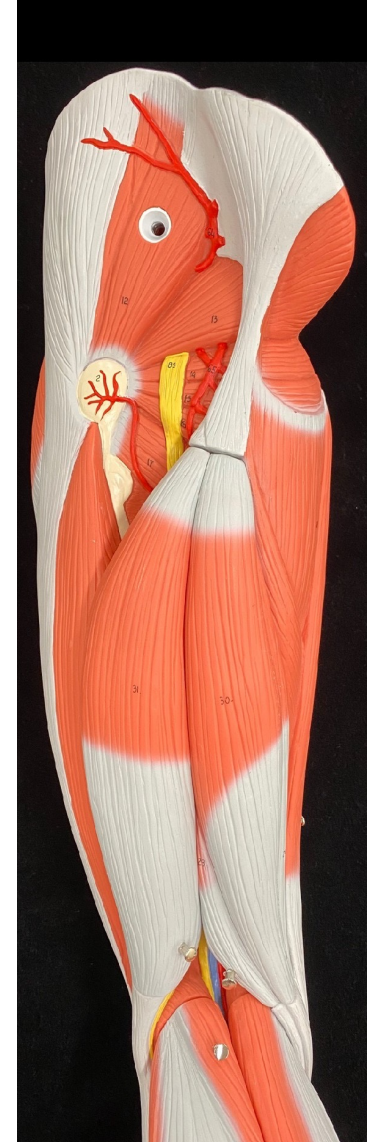
Adductor magnus

**MEDIAL**

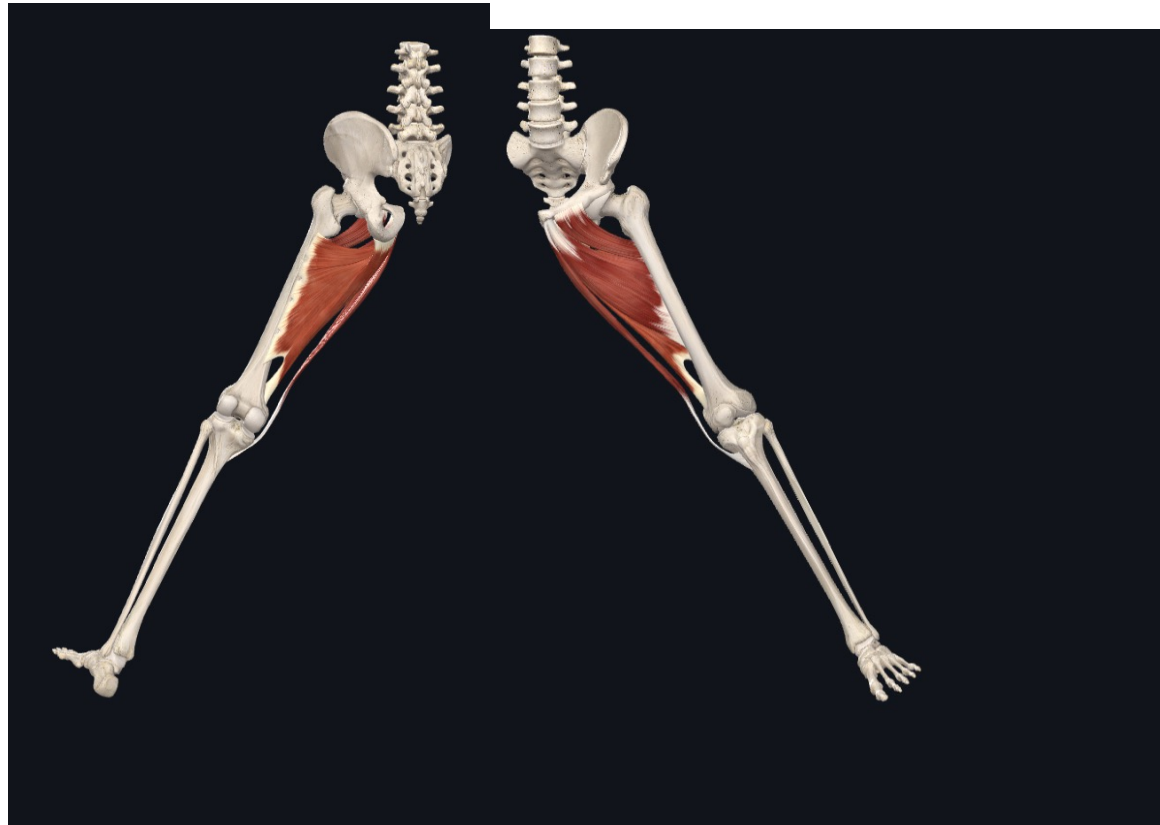
**LATERAL**

**POSTERIOR**

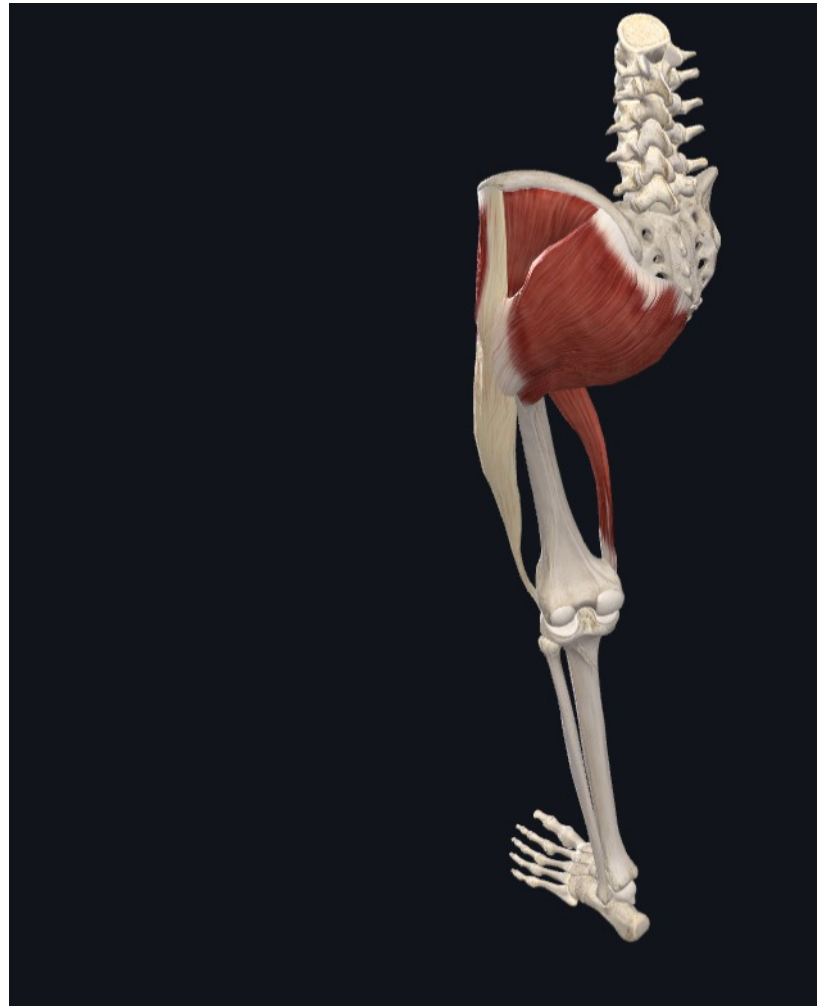
# Lab Models



# Thigh Adductors... *in action*

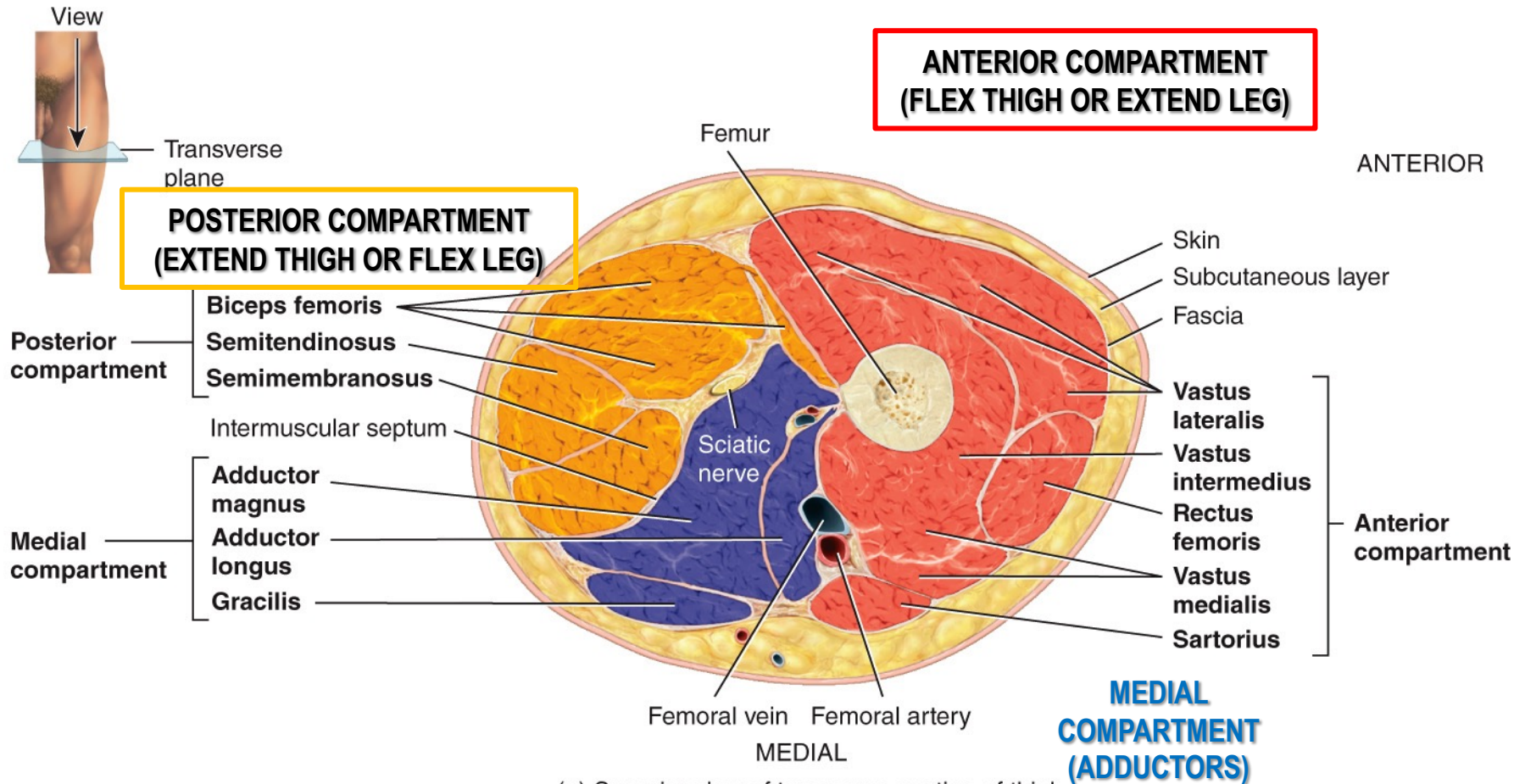


# Iliotibial Tract – Thigh Abductor





# Muscles Compartments of Thigh



(g) Superior view of transverse section of thigh

## b. Group 2: Move Leg at Knee

Anterior Thigh Compartment

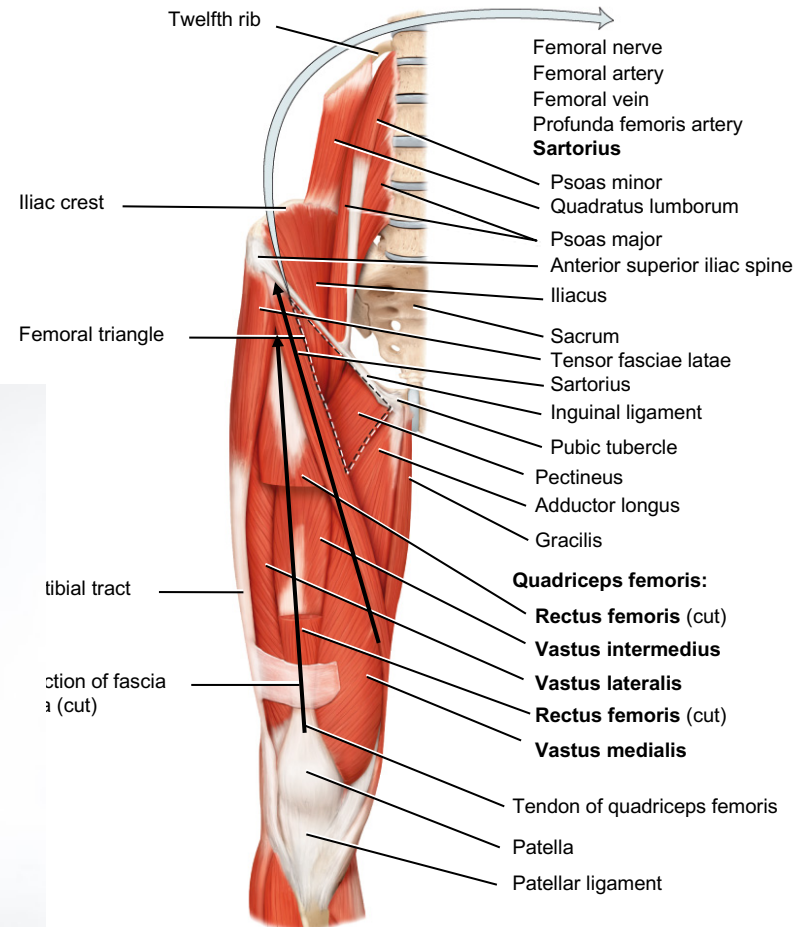
**Origin:** Pelvic bones or Femur

**Insertion:** Tibia or Fibula

**Also known as Quads**

- ACTIONS:**

- **Flex thigh**
- **Extend leg**



(a) Anterior superficial view (the femoral triangle is indicated by a dashed line)

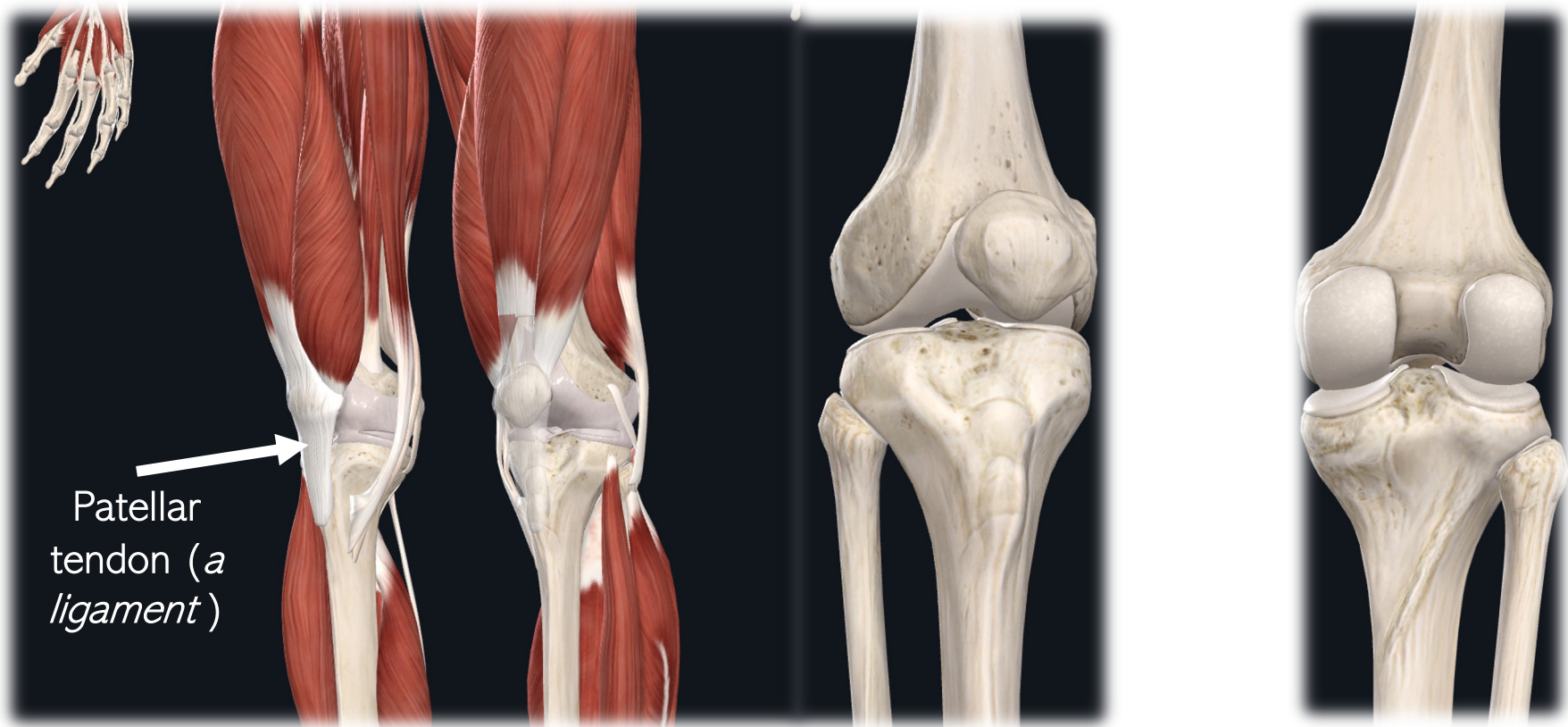
LATERAL

ANTERIOR

ANTERIOR

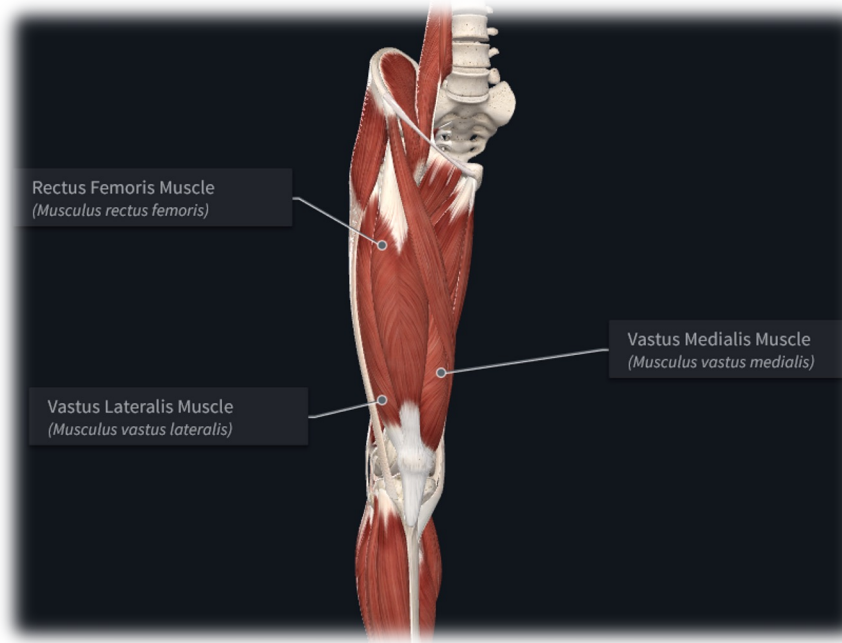
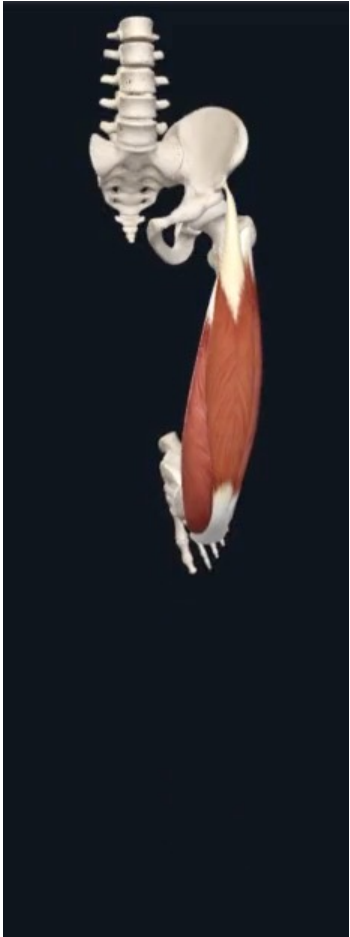
POSTERIOR

## Largest Joint: The Knee



# Major Knee Extensors: “Quads”

- **Sartorius:**
  - **Flexes, abducts, & laterally rotates thigh**
- **Quadriceps femoris:**
  - **Extends leg**
- **\*\*Rectus femoris:**
  - **Also flexes thigh**



**Vastus intermedius**



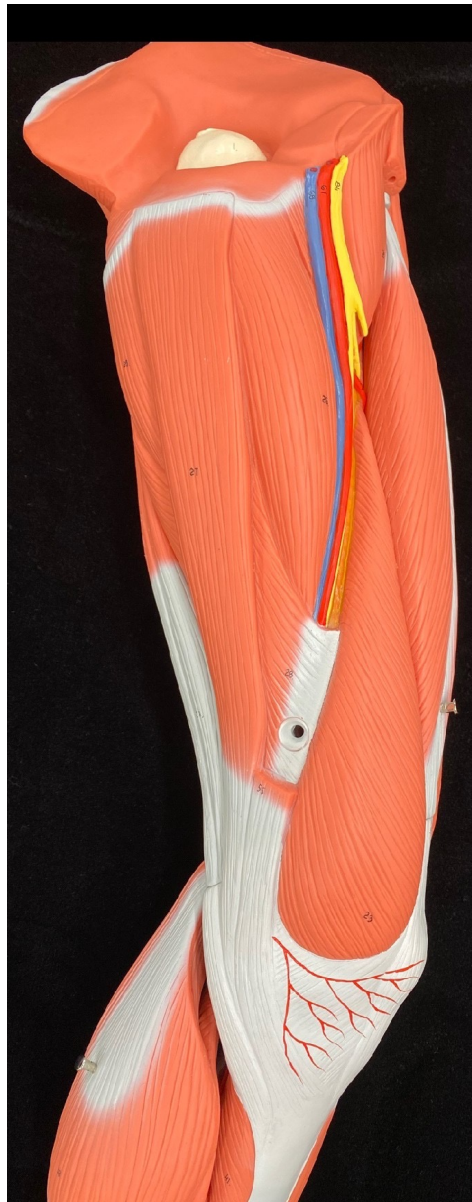
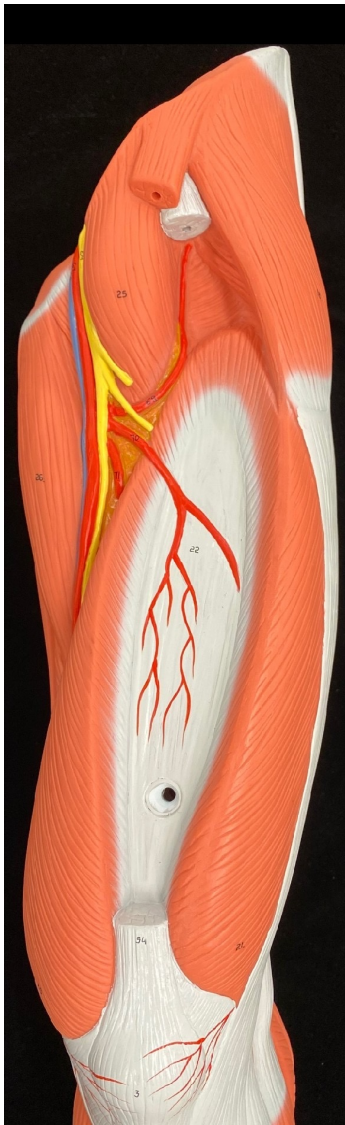
ANTERIOR

ANTERIOR

LATERAL

MEDIAL

# Lab Models



## Group 2: Move Leg at Knee

Posterior Thigh Compartment

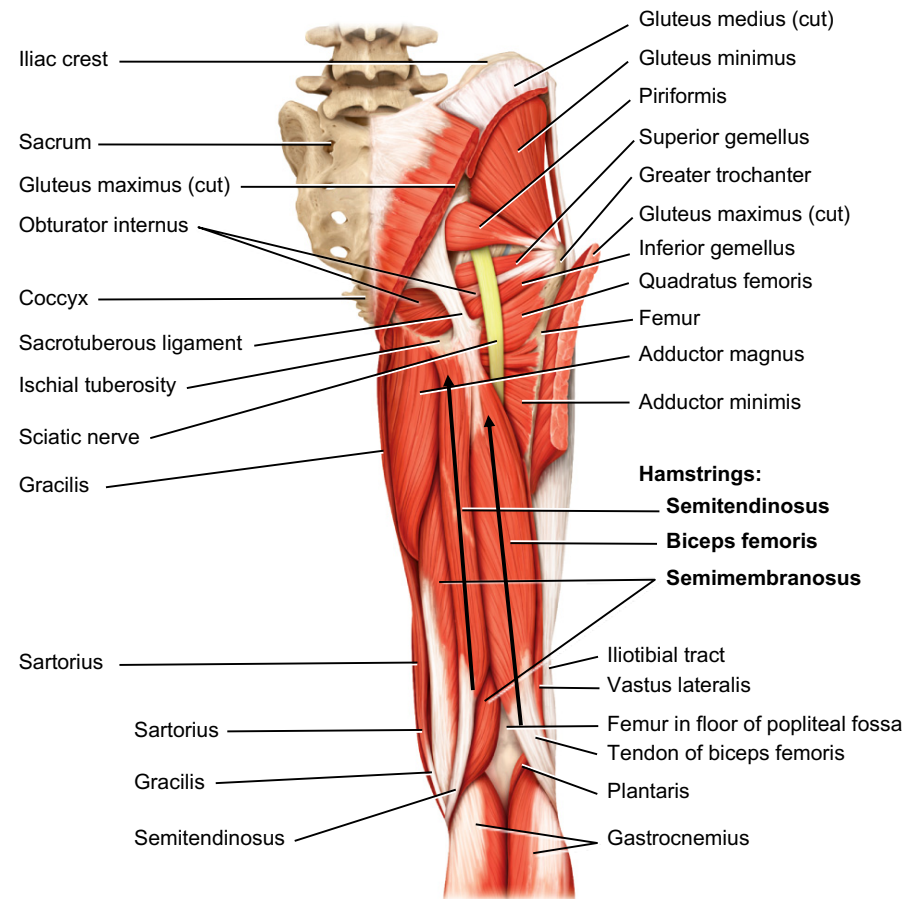
**Origin:** Pelvic bones

**Insertion:** Tibia or Fibula

**Also known as HAMSTRINGS**

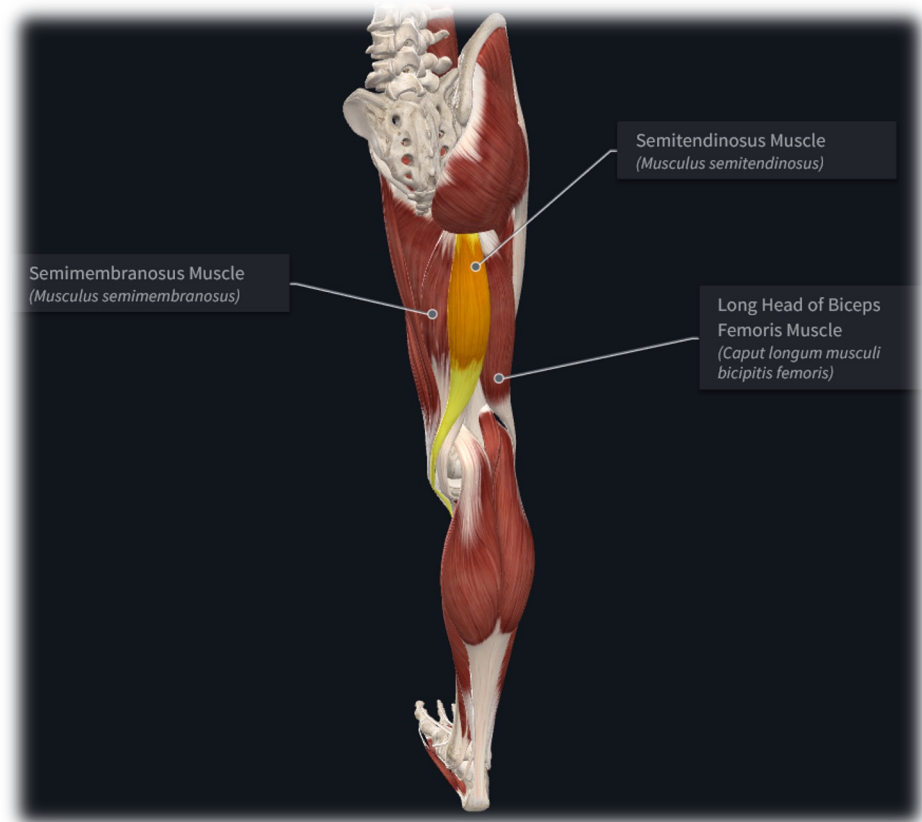
- ACTIONS:**

- **Extend thigh at hip**
- **Flex leg at knee**



(e) Posterior superficial view of thigh and deep view of gluteal region

# Major Knee Flexors: “Hamstrings”



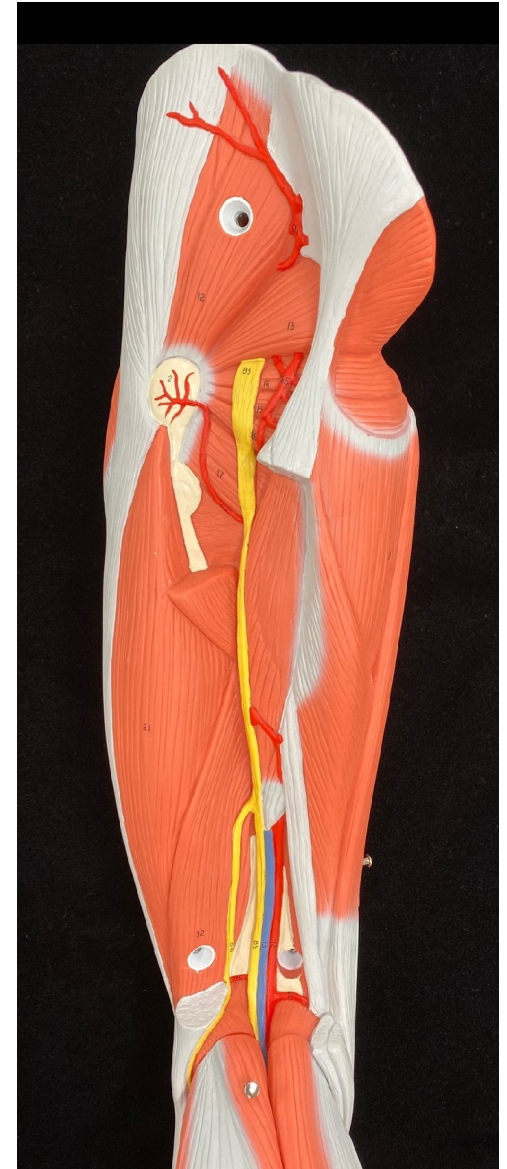


LATERAL

MEDIAL

POSTERIOR

# Lab Models



## c. Group 2 & 3: Move Leg at Knee and Foot at Ankle

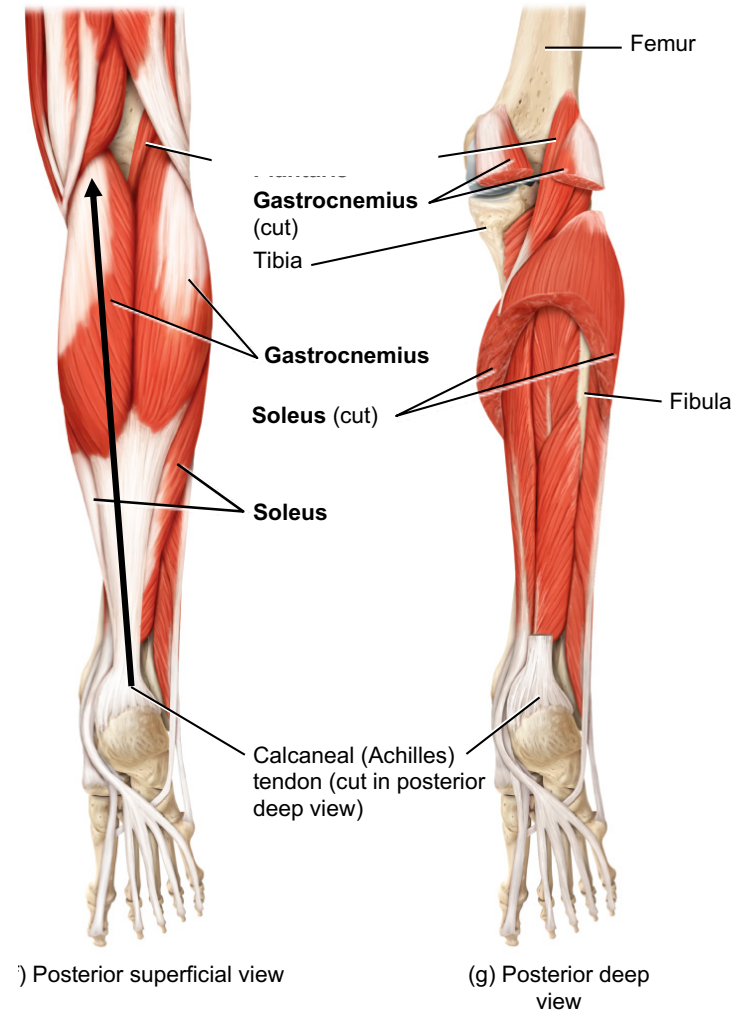
**Origin:** Femur, Tibia, or Fibula

**Insertion:** Tarsals or Metatarsals

Superficial posterior leg compartment

### ACTIONS:

- **Gastrocnemius**
  - **Flex leg**
  - **Plantar flex at ankle**
- **Soleus**
  - **Plantar flex at ankle**

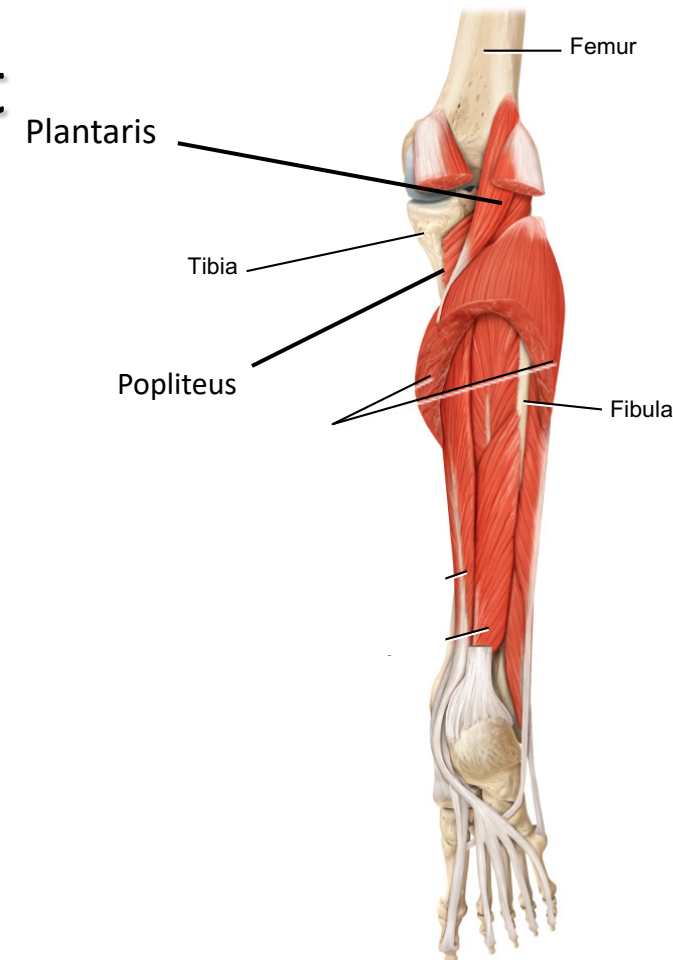


## c. Group 3: Move Leg at Knee

### Deep Posterior Leg Compartment

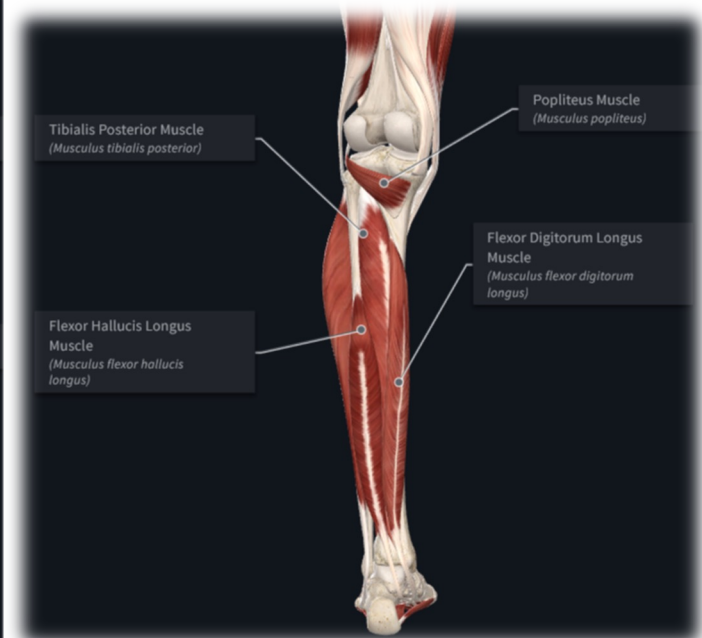
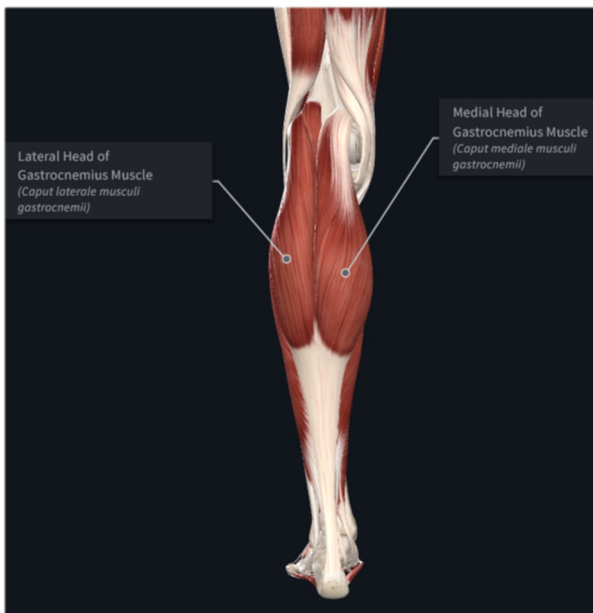
#### Actions:

- Popliteus
  - Unlocks fully extended knee
- Plantaris:
  - Plantar flexion
  - Knee flexion
  - A proprioceptor



(g) Posterior deep view

## Posterior Leg Muscles



# Plantarflexion

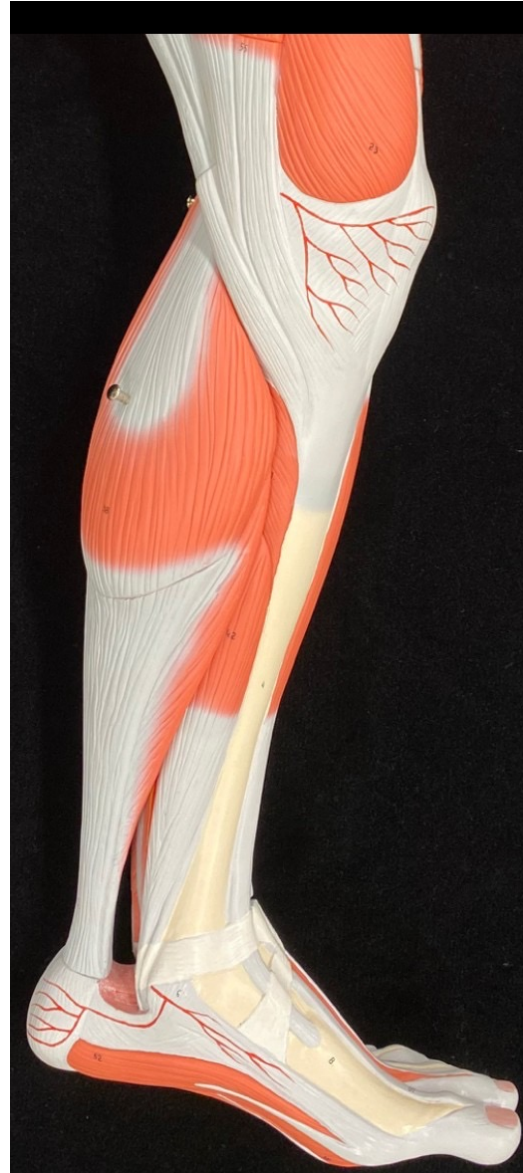




**MEDIAL**

**POSTERIOR**

# Lab Models



## Group 3: Move Foot at Ankle

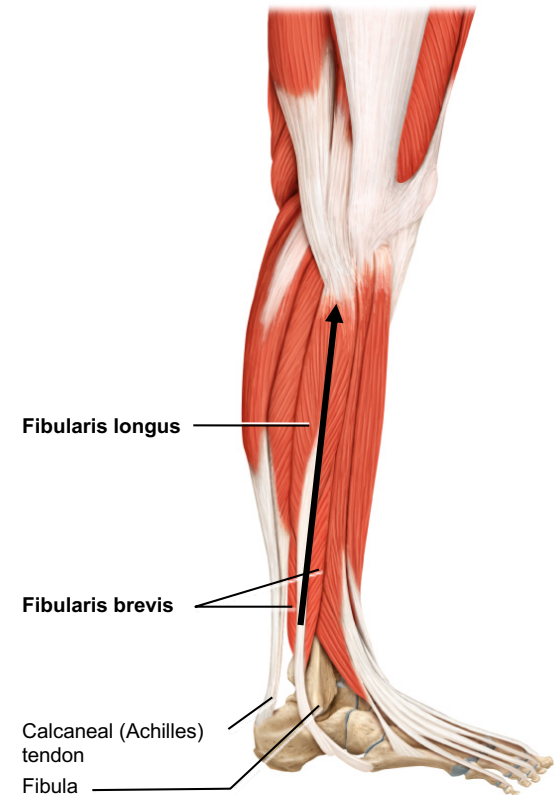
**Origin:** Tibia or Fibula

**Insertion:** Metatarsals or tarsals

Lateral Leg Compartment

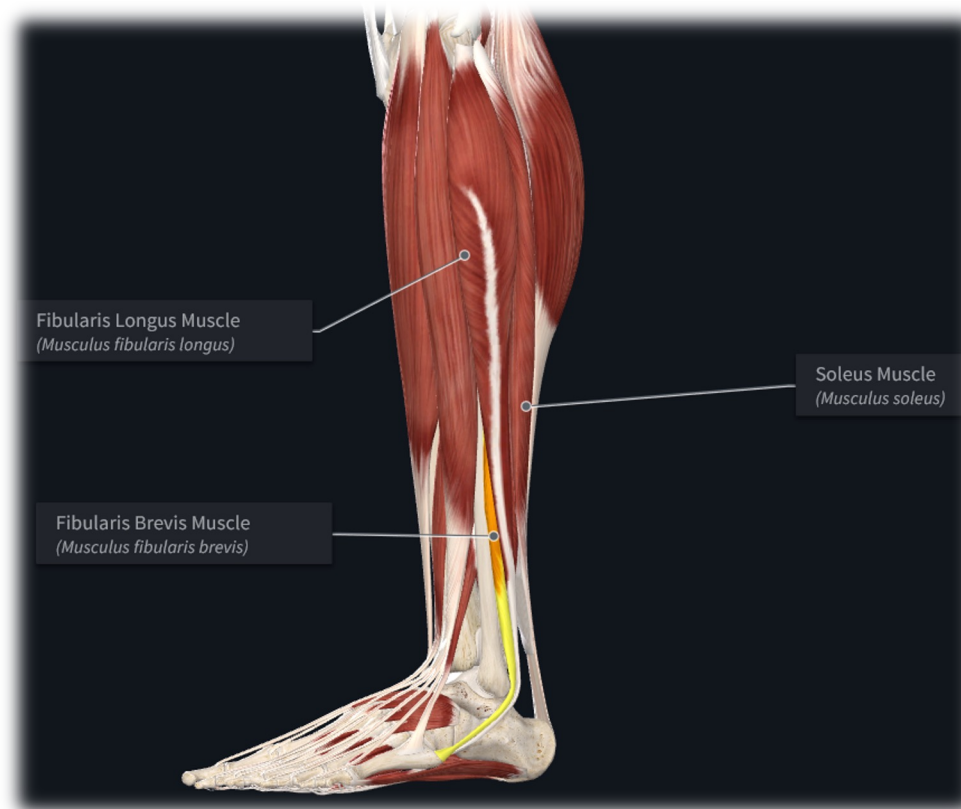
**ACTIONS:**

- Fibularis longus and fibularis brevis
  - **BOTH evert foot**



(b) Right lateral superficial view

# Fibularis Muscles (*lateral view*)



# Lab Models



## c. Group 3 & 4: Move Foot at Ankle and Digits

**Origin:** Tibia or Fibula

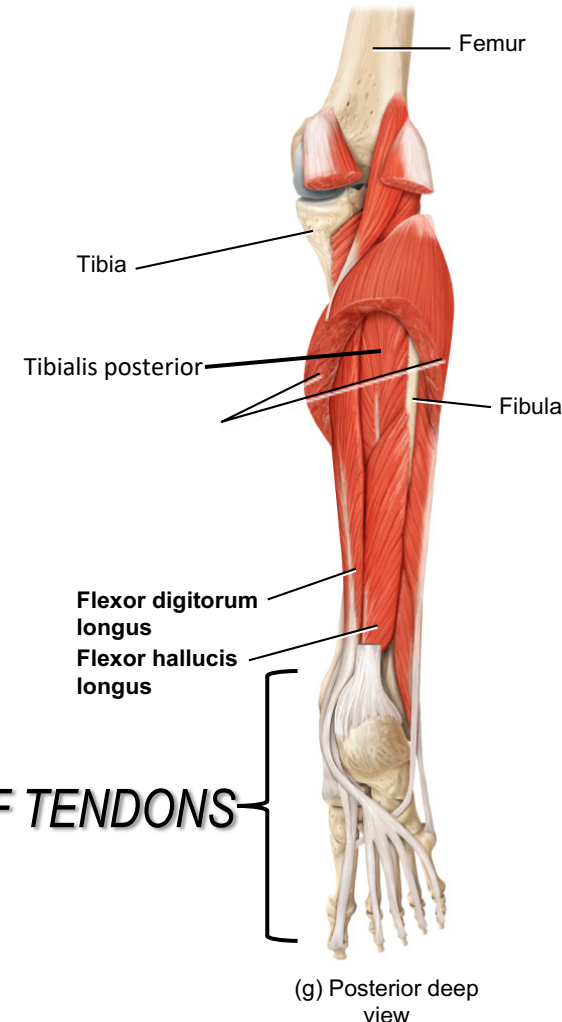
**Insertion:** Phalanges

Deep posterior leg compartment

**Action:**

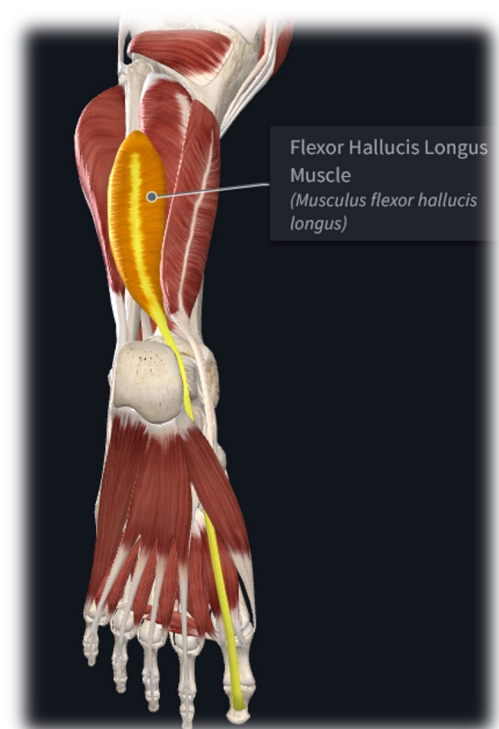
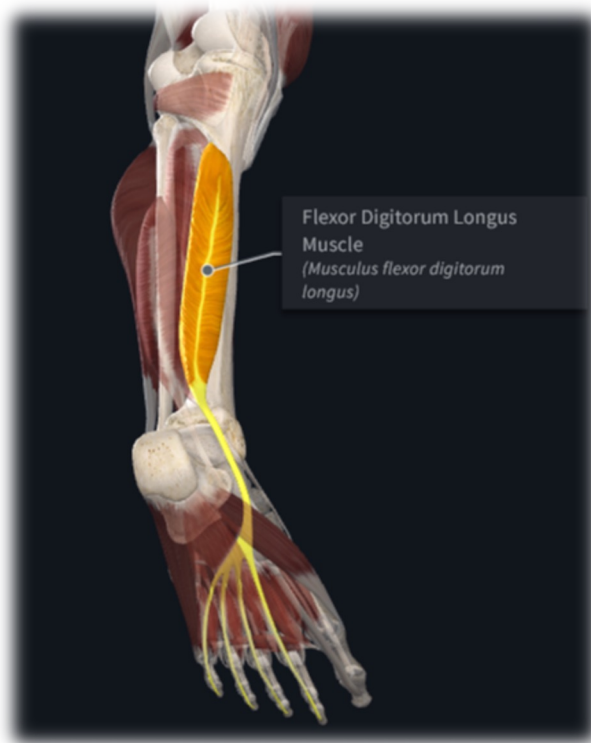
- Tibialis posterior
  - Foot inversion
  - Plantar flex foot
- Flexor digitorum longus
  - Flex toes
  - Plantar flex foot
- Flexor hallucis longus
  - Flex hallux (big toe)
  - Plantar flex foot

*NOTE THE DISTRIBUTION OF TENDONS*





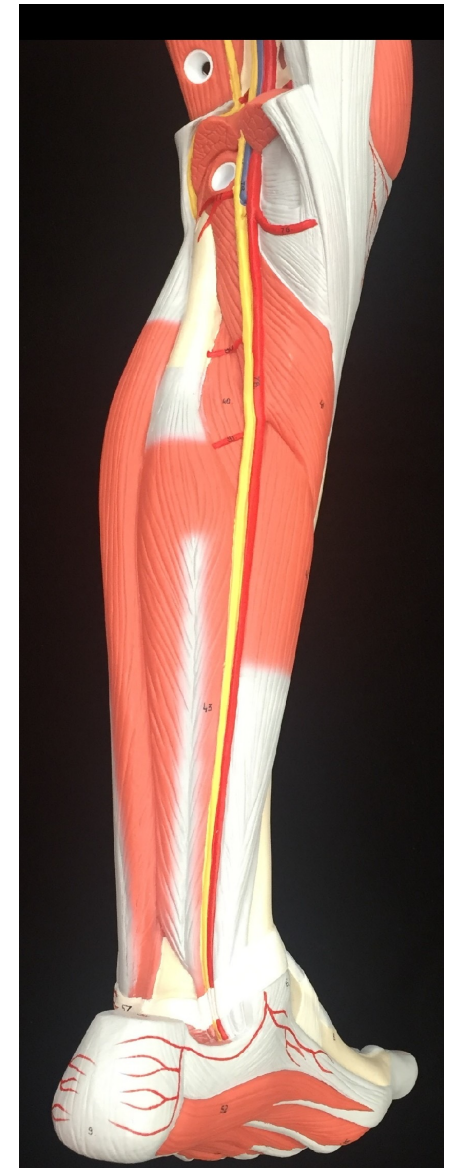
# Digitorum vs. Hallucis



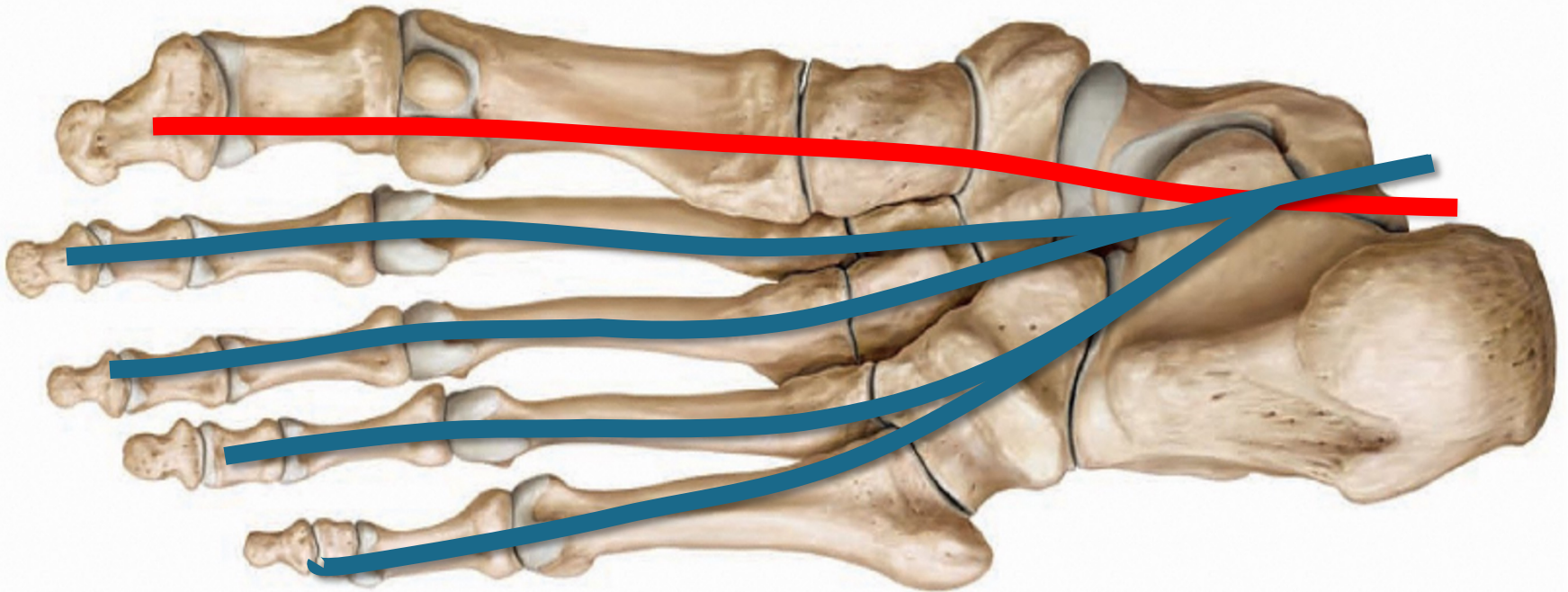
**INFERIOR**

**POSTEROMEDIAL**

# Lab Models



# FOOT: Path of Flexor Tendons



**FLEXOR HALLUCIS LONGUS TENDON**

**FLEXOR DIGITORUM LONGUS TENDON**

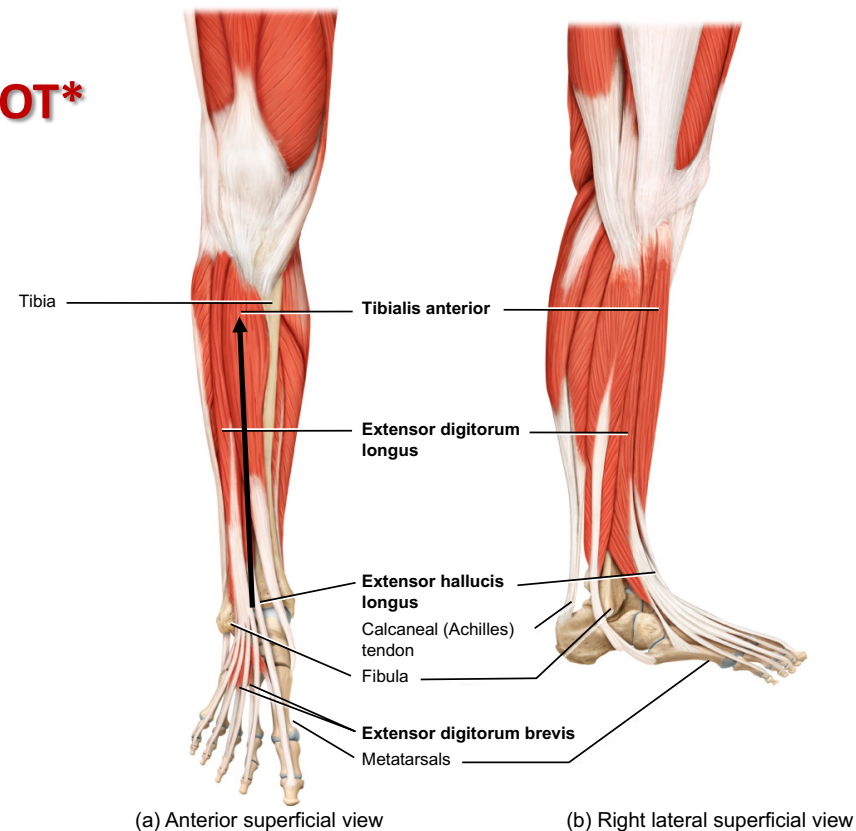


# Groups 3 & 4: Move Foot at Ankle and Digits

**Origin:** Tibia or Fibula

**Insertion:** Metatarsals, tarsals or phalanges

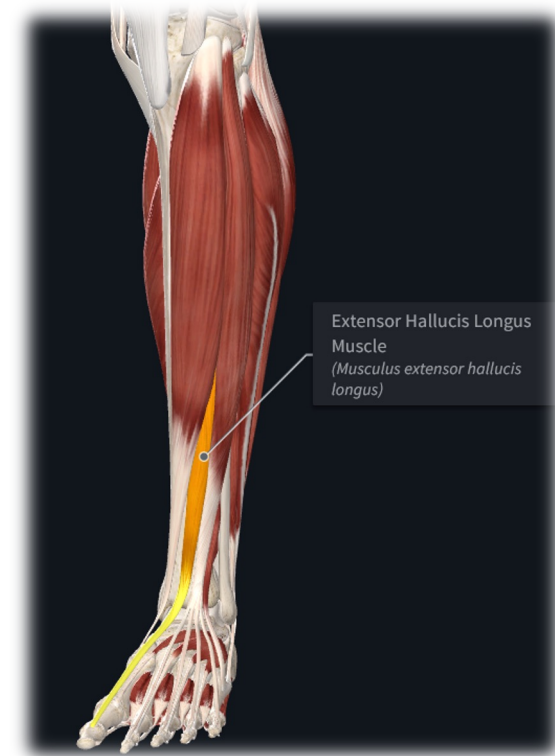
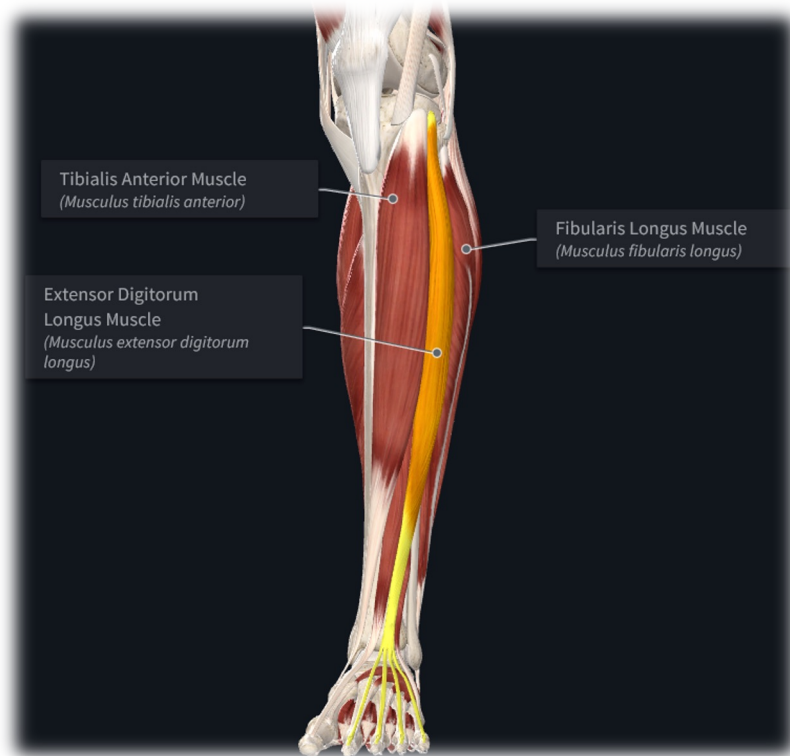
- **ACTIONS: \*ALL TOGETHER DORSIFLEX FOOT\***
  - Tibialis anterior:
    - **Inverts foot**
  - Extensor hallucis longus:
    - **Extends hallux**
  - Extensor digitorum longus and brevis:
    - **Extends digits II-V**



(a) Anterior superficial view

(b) Right lateral superficial view

# Digitorum vs. Hallucis



# Dorsiflexion



# Lab Models



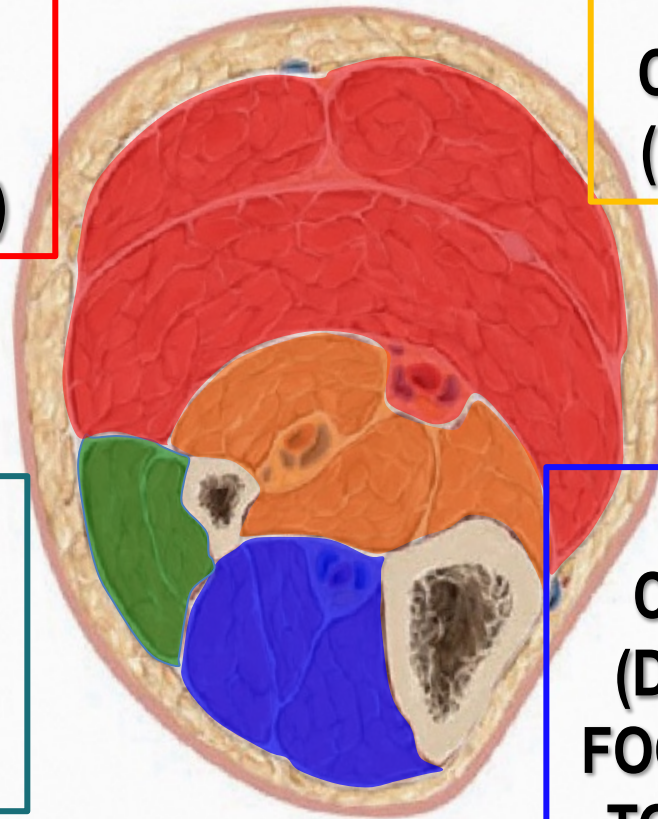
# Muscle Compartments of Leg

Contains muscles from Groups 3 & 4 mostly

**SUPERFICIAL  
POSTERIOR  
COMPARTMENT  
(PLANTARFLEXORS)**

Lateral

**LATERAL  
COMPARTMENT  
(FOOT  
EVERTORS)**



**DEEP  
POSTERIOR  
COMPARTMENT  
(TOE FLEXORS)**

Medial

**ANTERIOR  
COMPARTMENT  
(DORSIFLEXORS,  
FOOT INVERTERS &  
TOE EXTENSORS)**

