

# Muscles of the anterior compartment of the thigh.

|                    | origin  | Insertion  | Nerve supply  |
|--------------------|---|--|---|
| Iliopsoas          | 1. Iliacus : iliac fossa .<br>2. Psoas Major :<br>Transverse processes,<br>bodies, and intervertebral<br>discs of T12-L5 vertebrae. | lesser trochanter<br>of femur .                                  | <b>FEMORAL nerve</b><br><br><b>EXCEPT, Psoas Major by L1,2,3.</b> |
| Quadriceps femoris |   | patella and tibia<br>tuberosity via<br>the patellar<br>ligament. |   |
| Sartorius          | anterior<br>superior iliac<br>spine.  | Upper medial<br>surface of shaft of<br>tibia (SGS) .             |   |
| Pectineus          | Superior<br>pubic<br>ramus .  | Linea aspera .   |   |

→ origin →

## 1. Rectus femoris

Straight head : Anterior inferior iliac spine.  
Reflected head Above the acetabulum.

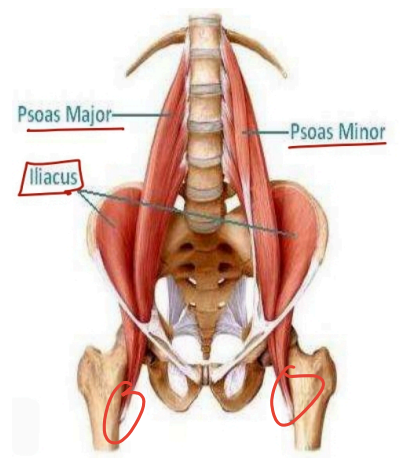
2. Vastus intermedius Anterior and lateral surface of femur.

3. Vastus lateralis and 4. Vastus medialis Upper end and shaft of femur.

## Actions:

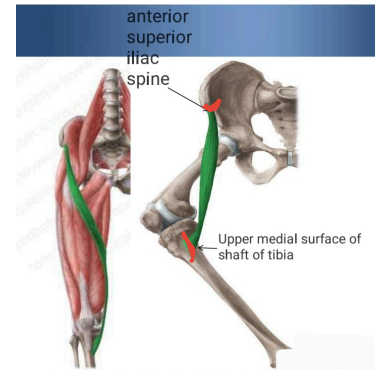
### ☆ Iliopsoas

1. Flexes the thigh.
2. Psoas major flexes trunk on thigh; if thigh is fixed.



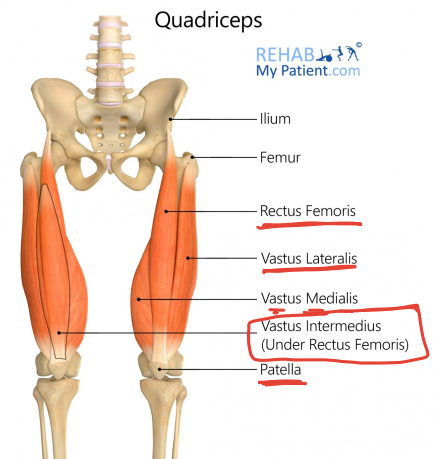
### ☆ Sartorius

1. Tailor position.
2. Flexes, abduct, laterally rotate the thigh.
3. Flexes and medially rotates the knee.



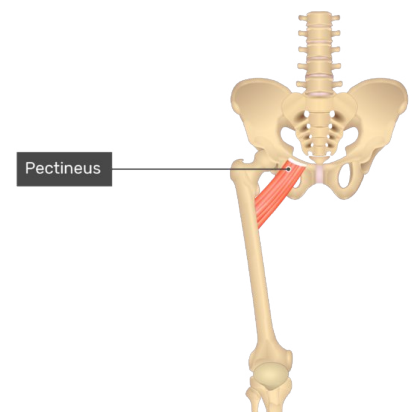
### ☆ Quadriceps femoris

1. extends knee.
2. (rectus femoris) flexes thigh.



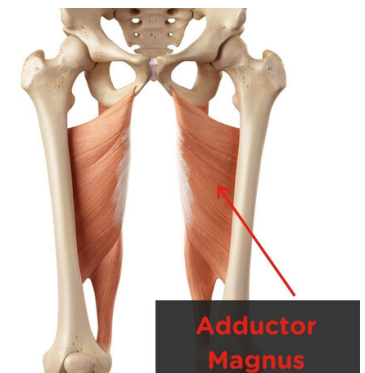
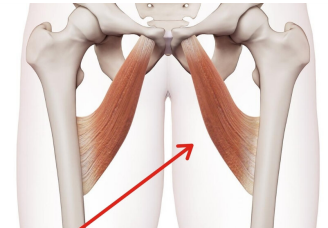
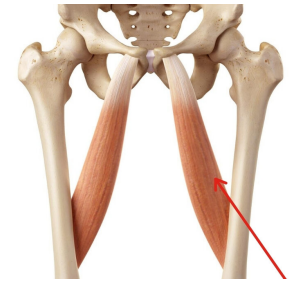
### ☆ Pectineus

Flexes and adducts thigh.



# Muscles of the medial compartment of the thigh.

|                              | origin                | Insertion     |
|------------------------------|-----------------------|---------------|
| Adductor longus              | body of pubis         | linea aspera. |
| Adductor brevis              | inferior pubic ramus. |               |
| Adductor magnus (pubic head) | Pubic arch.           |               |
| Gracilis                     | Pubic arch.           |               |



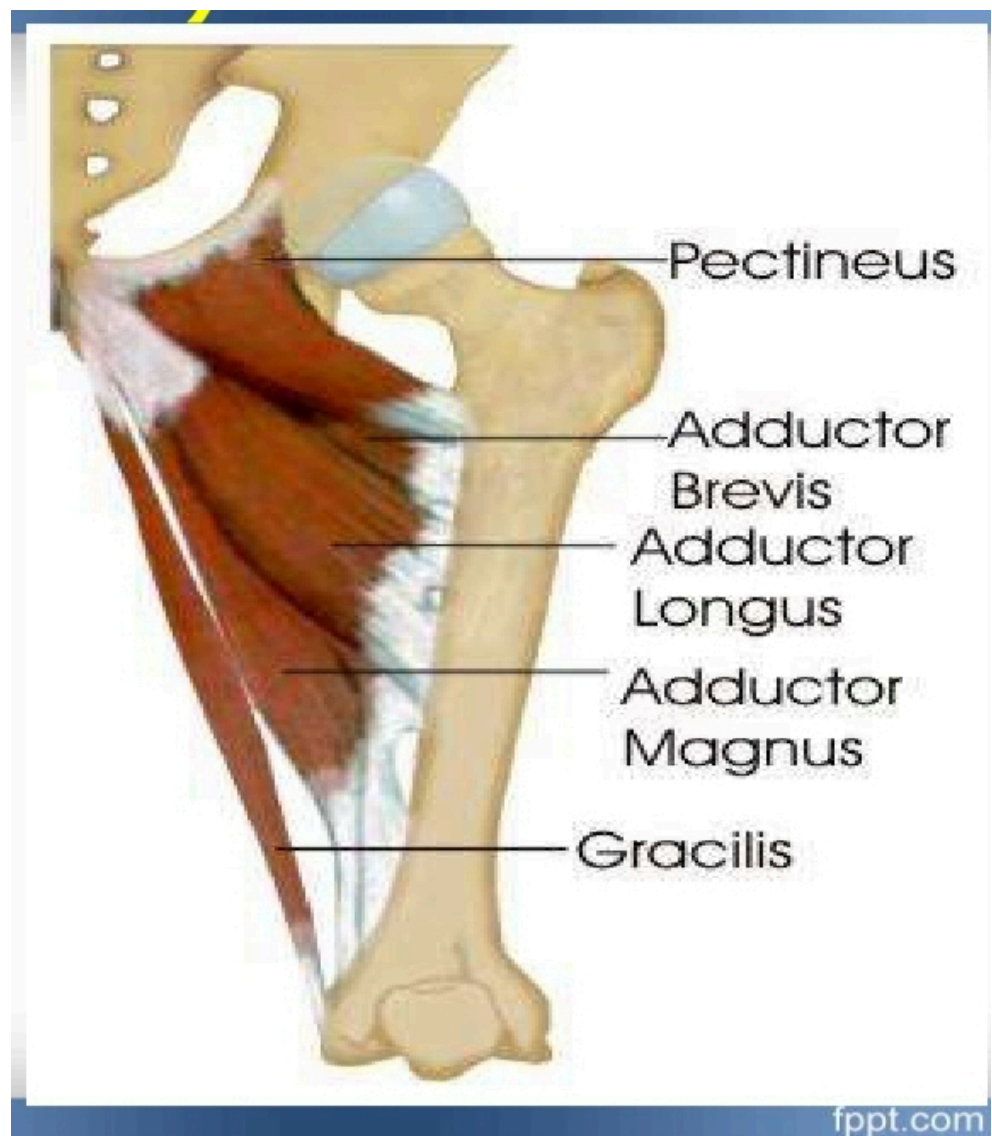
## Nerve supply

**OBTURATOR** nerve.

# Action:

1. Adducts thigh.

2. Gracilis : Adducts thigh , flexes and medial, rotates the leg.





# Muscles of the gluteal region.

|                      | origin   | Insertion                                     | Nerve supply           |
|----------------------|--|---|------------------------|
| Gluteus maximus      | Outer surface of ilium, sacrum, coccyx, and sacrotuberous ligament . | Gluteal tuberosity of femur Iliotibial tract. | Inferior gluteal nerve |
| Tensor fasciae latae | Iliac crest .  | Iliotibial tract.                             | Superior gluteal nerve |
| Gluteus minimus      | Outer surface of ilium .   | Greater trochanter of femur.                  |                        |
| Gluteus medius       |  |   |                        |

## Action:

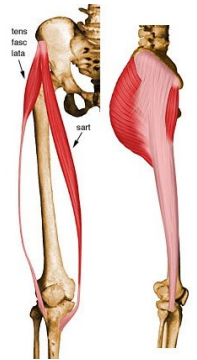
### ☆ Gluteus maximus

1. Extends and lateral rotation of thigh.
2. Extends the knee (through the iliotibial tract).



### ☆ Tensor fascia latae

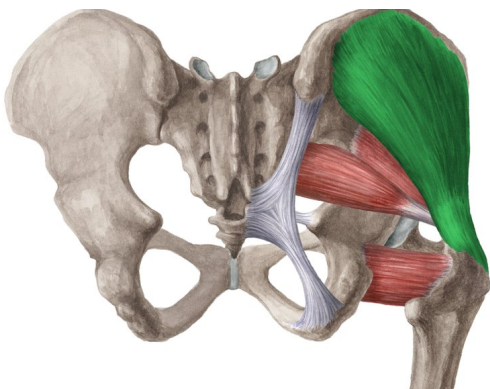
Helps gluteus maximus in extending the knee joint .



### ☆ Gluteus medius and minimus

1. Abduction.
2. Prevent tilting of the pelvis when the opposite limb is raised.

#### Gluteus medius



#### Gluteus minimus



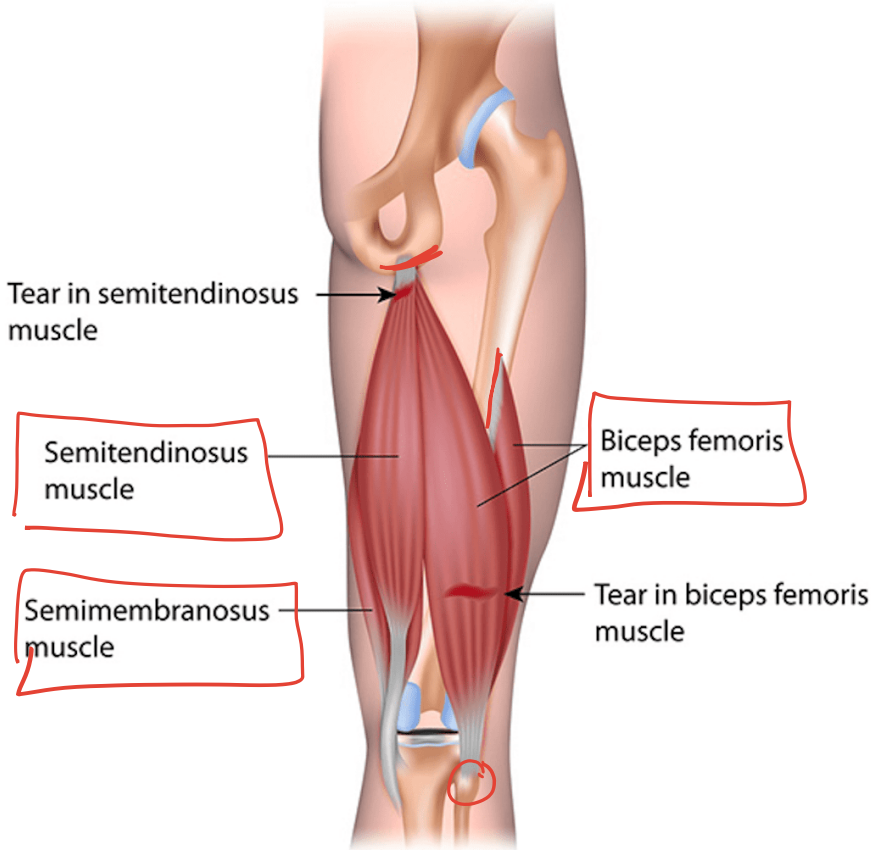
# Muscles of the posterior compartment .

|                 | Insertion  | origin  | Nerve supply  |
|-----------------|--|---|---|
| Adductor Magnus | Adductor tubercle of femur.                      | All from Ischial tuberosity.<br>EXCEPT Short head of biceps femoris from linea aspera and lateral supracondylar line. | Tibial branch of Sciatic nerve.<br>EXCEPT Short head of biceps femoris by common peroneal branch of Sciatic nerve |
| Semitendinosus  | upper part of medial surface of the tibia (SGS). |   |   |
| Semimembranosus | Back of medial condyle of the tibia.             |   |   |
| Biceps femoris  | styloid process of the fibula.                   |   |   |

# Action:

☆ All are Extends the hip (EXCEPT short head of Biceps ) and flex the knee.

Lateral muscle rotates the knee laterally.  
Medial muscle rotates the knee medially.



## Lateral rotators of the thigh

Now, we must know the nerve supply only .

1-Piriformis N.S: S1,S2.

2-Obturator internus N.S: Nerve to obturator internus.

3-Superior gemillus N.S: Nerve to obturator internus.

4-Quadratus femoris Nerve to quadratus femoris.

5-Inferior gemillus N.S: Nerve to quadratus femoris.

6-Obturator externus: N.S: Obturator nerve.

The leg is divided into

Anterior

lateral

posterior

Dorsiflexion and  
Toes Extension

Eversion of the foot and  
Planter flexion

Mainly Planter flexion  
and Toes flexion

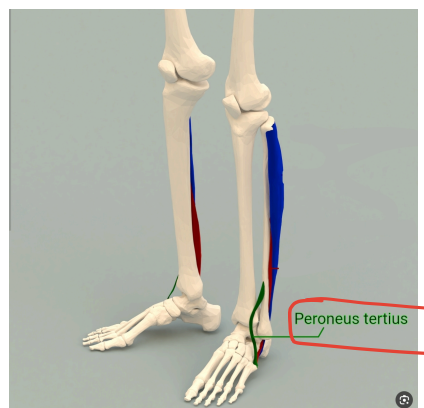
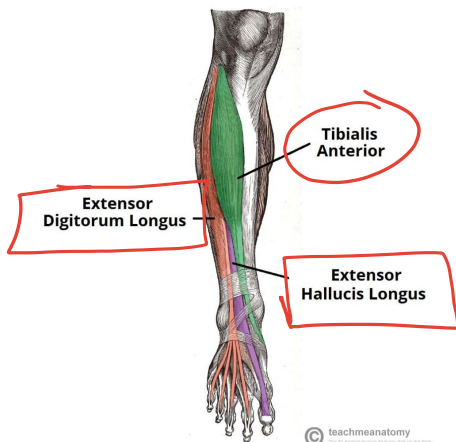
All are innervated by  
Deep fibular nerve

All are innervated by the  
Superficial fibular nerve

All are innervated by the  
tibial nerve

# 1. Muscles of Anterior Compartment

|                           | Origin                       | Insertion                                | Nerve Supply       |
|---------------------------|------------------------------|--|--------------------|
| Tibialis anterior         | lateral surface of the Tibia | Medial cuneiform and 1st metatarsal bone | Deep fibular nerve |
| Extensor hallucis longus  | Anterior surface of fibula   | Distal Phalanx big toe                   |                    |
| Extensor digitorum longus |                              | Extensor expansion of lateral four toes  |                    |
| Peroneus tertius          |                              | Base of 5th metatarsal bone              |                    |





## Action :

☆ All dorsiflexion of the foot Plus.

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☆ Hallucis : Extends big toe .

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☆ Dgitorum : Extends four toes.

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☆ Peroneus : eversion of the foot.

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☆ Tibialis : inversion of the foot .

# Extensor digitorum brevis

Location : Dorsum of The foot.

Origin : Calcaneus .

Insertion : Four Tendon into :

1. Proximal Phalanx of big toe .

2.Long Extensor tendons of 2nd ,3rd, and 4th toes .

Nerve Supply : Deep Peroneal nerve .

Action : Extends Medial four toes.

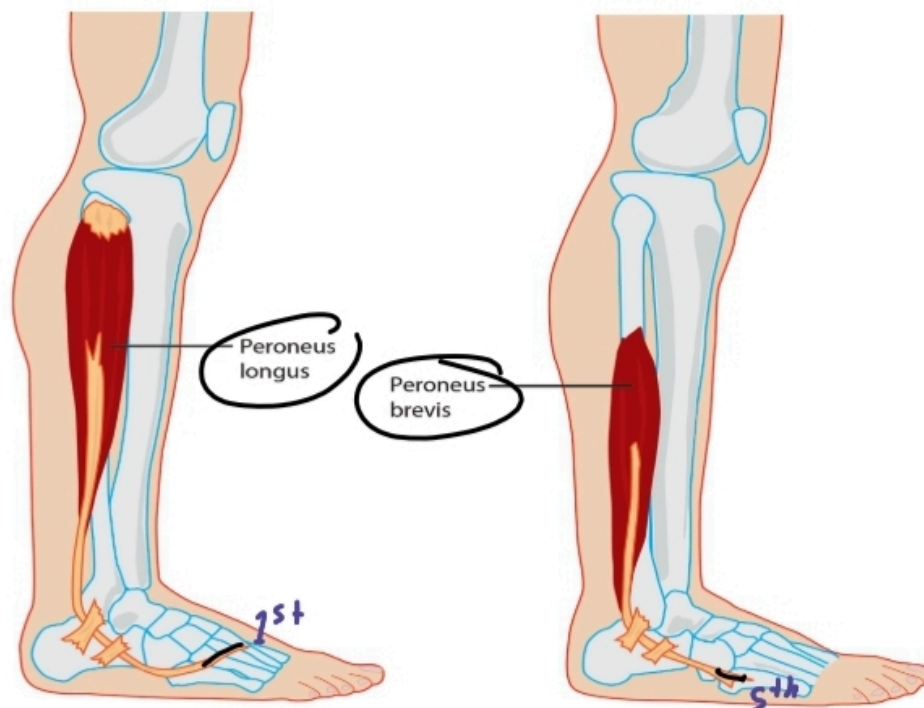


## 2. Muscles of the Lateral Compartment

|                             | Origin                         | Insertion      | Nerve Supply              |
|-----------------------------|--------------------------------|----------------|---------------------------|
| Fibularis (peroneus) longus | lateral surface of the fibula. | 1th metatarsal | Superficial fibular nerve |
| Fibularis (peroneus) brevis |                                | 5st metatarsal |                           |

### Action

☆ plantarflexion and eversion of foot .

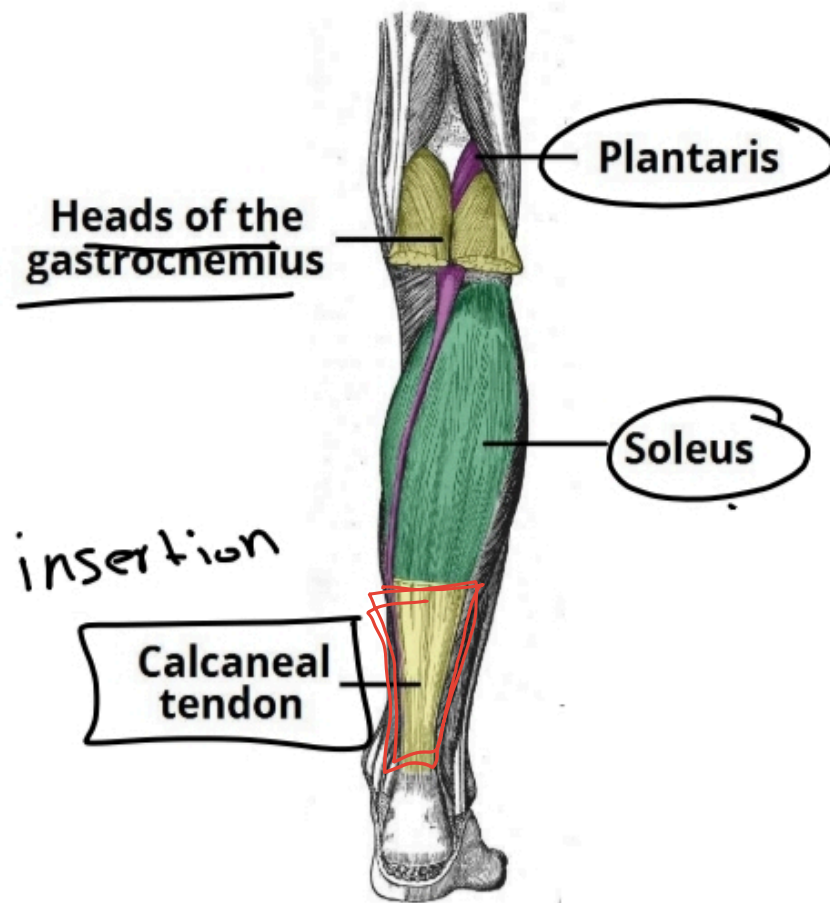


### 3. Muscles of the posterior leg (superficial)

|               | Origin                               | Insertion  | Nerve Supply |
|---------------|--------------------------------------|--|--------------|
| Gastrocnemius | Medial and lateral condyles of femur | tendo calcaneus into of Calcaneus bone of the foot | tibial nerve |
| Soleus        | Shaft of Tibia and fibula            |  |              |
| plantaris     | lateral supracondyle ridge of femur  |  |              |

## Action

1. Plantarflex foot, weak knee flexion.
2. Propulsive force in walking and running .
3. Soleus is antigravity muscle .
4. Soleus is the heart of the lower limb.



## 4. Muscles of the posterior leg (Deep)

|                         | Origin                                      | Insertion                                    | Nerve Supply |
|-------------------------|---|--|--------------|
| Flexor digitorum longus | Posterior surface of Tibia                  | distal phalanges of lateral four toe         | tibial nerve |
| Flexor hallucis longus  | Posterior surface of fibula                 | distal phalanx of big toe                    |              |
| Tibialis posterior      | Posterior surface of tibia and fibula       | Insertion – All tarsals bones EXCEPT talus   |              |
| Popliteus               | Lateral surface of lateral condyle of femur | Posterior surface of tibia above soleal line |              |

# Action

☆ All Plantarflexion of the Foot Plus.

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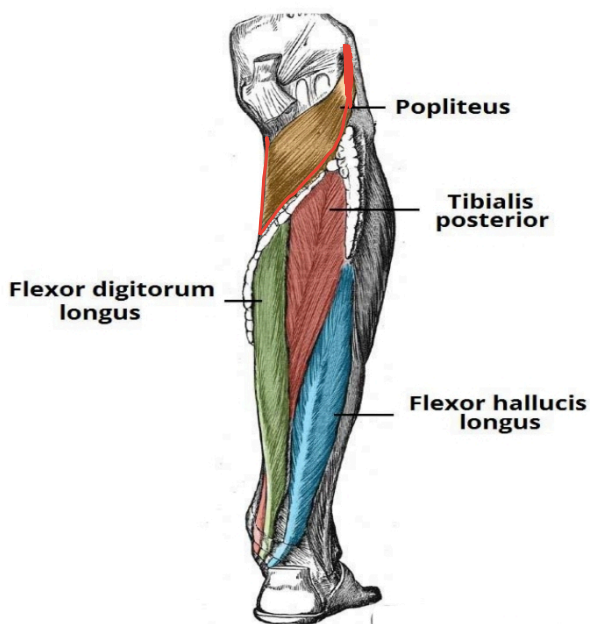
☆ Flexor digitorum longus : flexes the toes .

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☆ Flexor hallucis longus : flexes big toe .

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☆ Tibialis posterior : inversion of foot.





## Locking of the knee joint

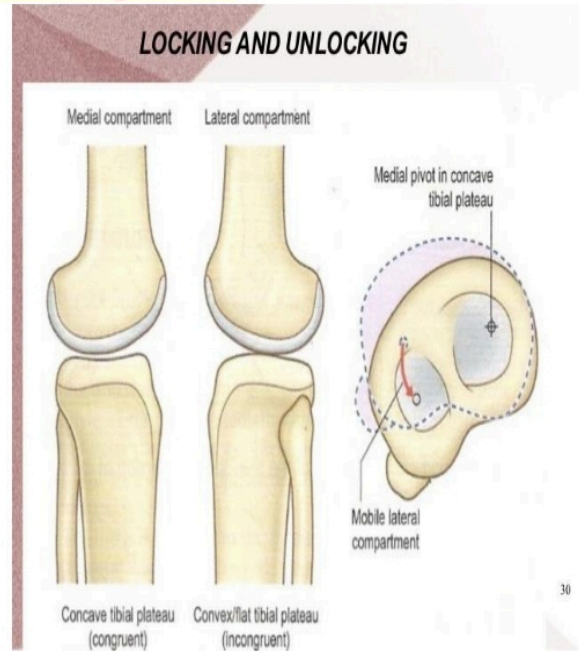
Occurs at terminal stage of full extension of the knee joint.

Responsible muscle (**Biceps femoris**)

### MECHANISM:

The (tibia) is laterally rotated **OR** the (femur) is medially rotated.

This rotatory movement locks the knee joint (the joint can not be flexed unless it is unlocked by the reverse muscle (**popliteus**)).



### Unlocking means

Lateral rotation of the femur  
Or Medial rotation of the tibia

### Locking means

medial.. rotation of the femur  
Or ...lateral.. rotation of the tibia

↳ muscle → biceps femoris

## The muscles of the foot

They are arranged in four layers from the inferior layer superiorly.

All the muscles of the foot are supplied by lateral plantar nerve.

### EXCEPT

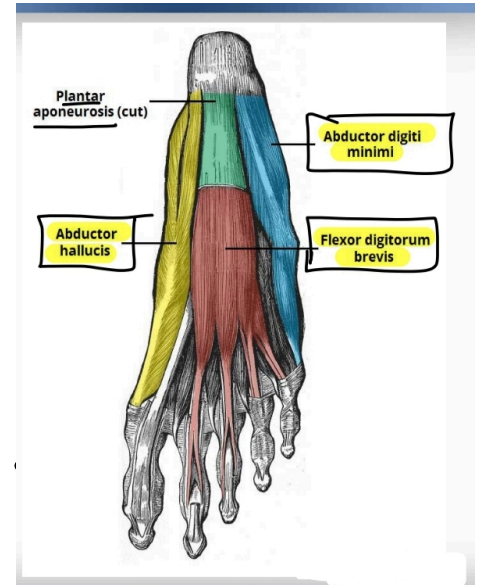
1. Abductor hallucis.
  2. Flexor digitorum brevis .)
  3. Flexor hallucis brevis
  4. 1st Lumbricalis.
- 1st layer  
→ 3rd layer  
→ 2nd layer

are supplied by medial plantar nerve

# First layer

two abductors + one flexor

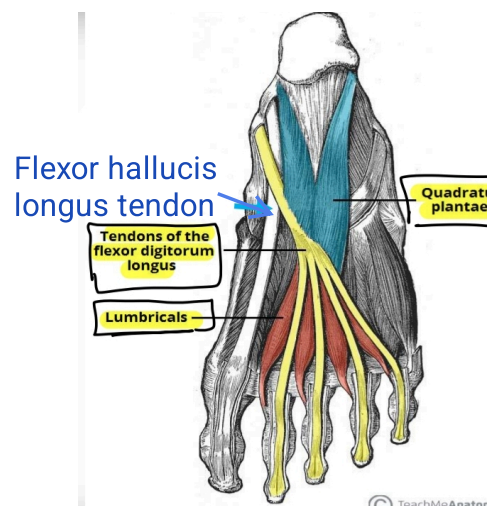
- 1- Abductor hallucis .
- 2- Flexor digitorum brevis
- 3- Abductor digiti minimi.



# Second layer

It has two tendons from the leg

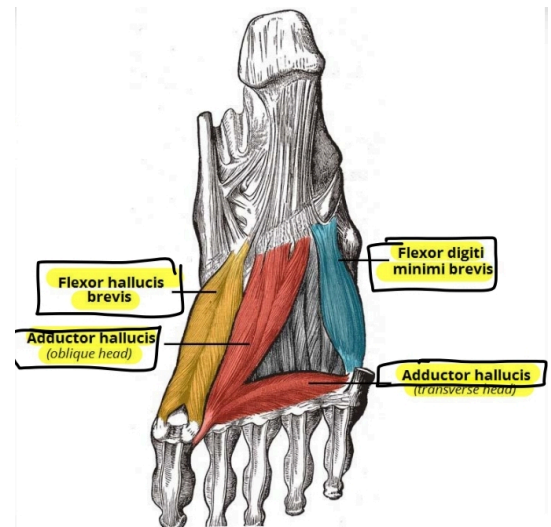
- 1- Quadratus plantae
- 2- Lumbricals
- 3- Flexor digitorum longus tendon
- 4- Flexor hallucis longus tendon



# Third layer

two flexors + one adductor

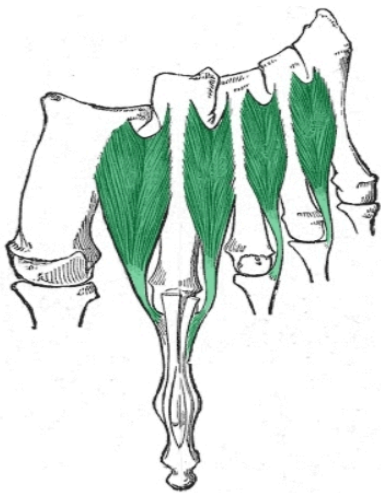
- 1- Flexor hallucis brevis
- 2- Adductor hallucis
- 3- Flexor digiti minimi brevis



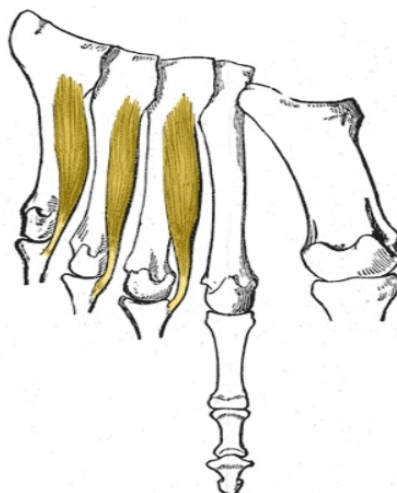
# Fourth layer

It has two tendons from the leg

- 1- Interossei ( four dorsal and 3 plantar )
- 2- Peroneus longus tendon
- 3- Tibialis posterior tendon



a) Dorsal Interossei



b) Plantar Interossei

*Mays qashou*