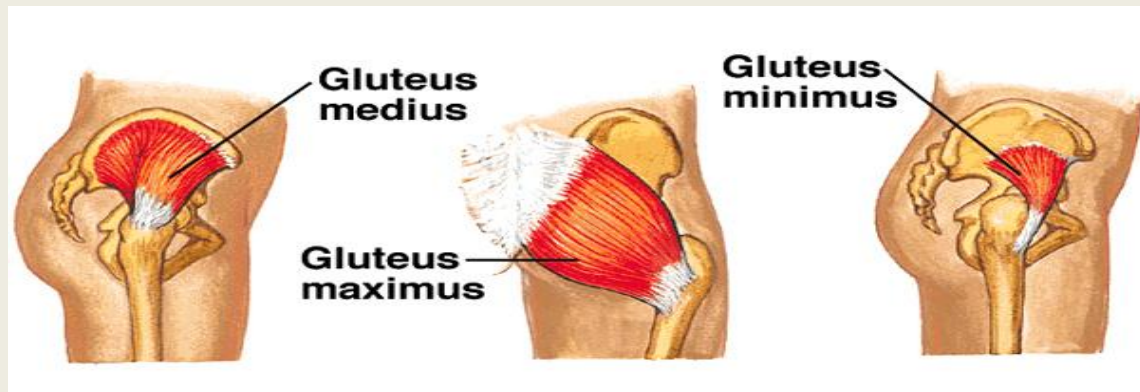




ANATOMY TEAM

Gluteal Muscles

A- GLUTEI



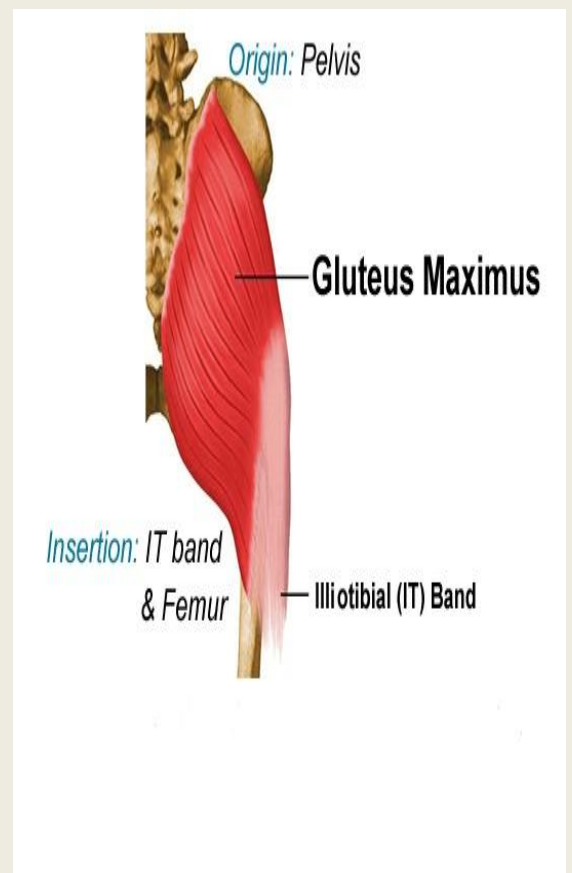
1- Gluteus maximus

Origin: Posterior part of the gluteal surface of ilium, back of sacrum & coccyx and back of Sacrotuberous ligament

Insertion: iliotibial tract (mainly) & gluteal tuberosity of the femur.

Nerve supply: Inferior gluteal nerve.

Action: Extension & lateral rotation hip joint, stabilizes the femur on tibia during standing.



2 - Gluteus medius

Origin: Middle of the gluteal surface of ilium

Insertion: greater trochanter (lateral surface)

Nerve supply: Superior gluteal nerve.

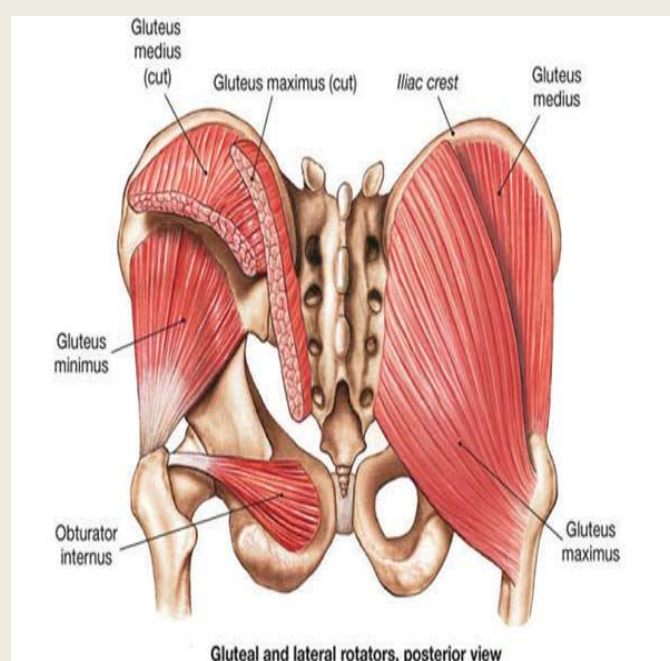
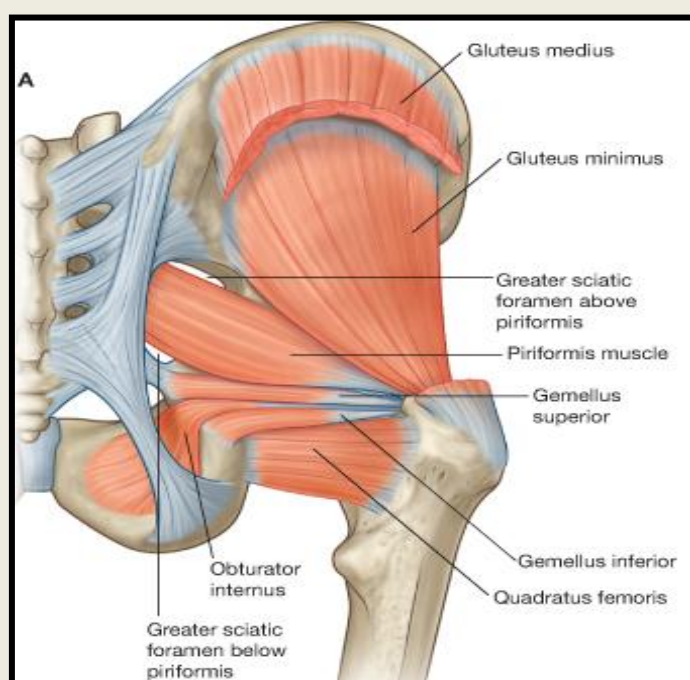
Action: abduction & medial rotation of hip joint.
prevent tilt of the pelvis.

3- Gluteus minimus:

Origin :Anterior gluteal surface of ilium

Insertion: greater trochanter (anterior surface)

It has the same nerve supply and action of the
Gluteus medius



B- Small muscles (Lateral Rotators)

1 - Obturator Internus:

Origin: Inner surface of the side wall of pelvis.

Insertion: the medial surface of greater trochanter.

Nerve supply: Nerve to obturator internus

2 - Quadratus femoris:

Origin: Lateral border of the ischial tuberosity.

Insertion: Quadrate tubercle & intertrochanteric crest.

Nerve supply: Nerve to quadratus femoris

3 - Piriformis:

Origin: Pelvic surface of middle 3 sacral vertebrae.

Insertion: It passes through GSF to be inserted into the upper border of the greater trochanter.

Nerve supply: Anterior rami of S1,2

4 - Superior & Inferior Gemelli:

Origin:

Superior gemellus; upper part of lesser sciatic notch.

Inferior gemellus: lower part of lesser sciatic notch.

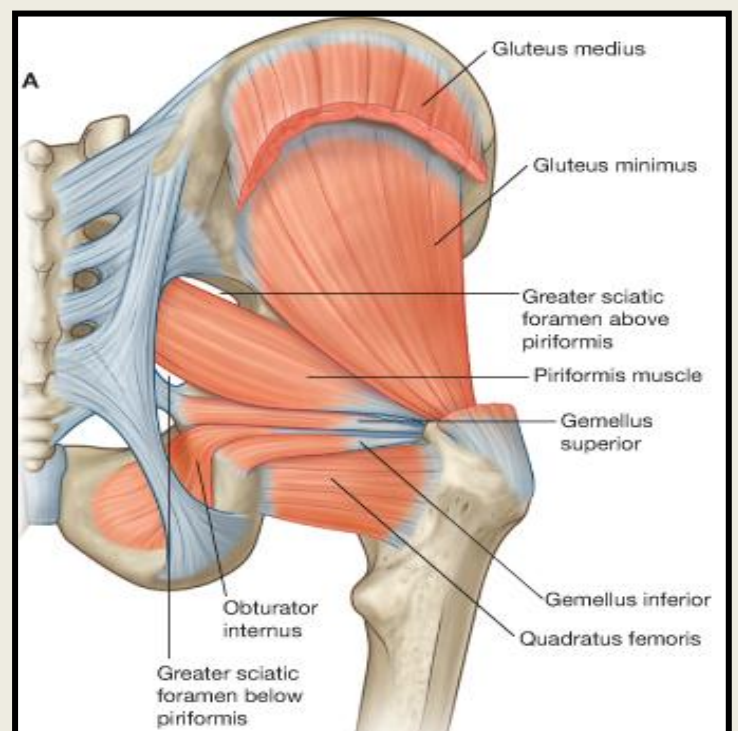
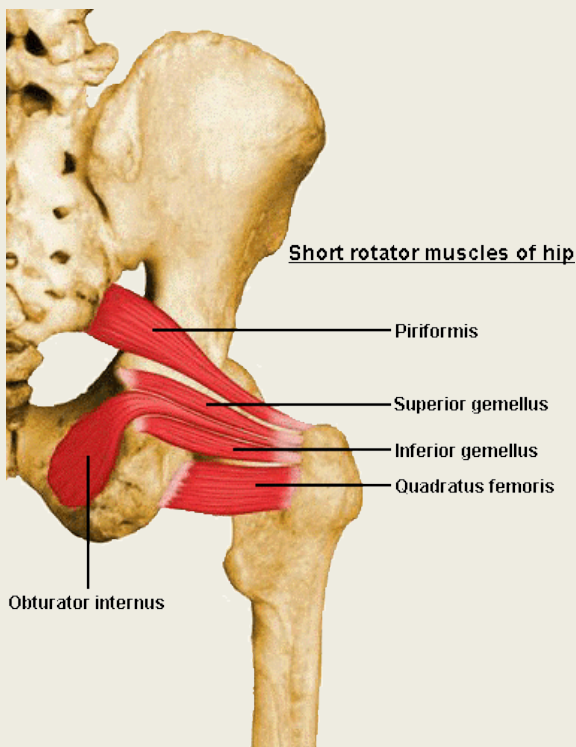
Insertion: Upper & lower parts of the tendon of the obturator internus.

Nerve supply:

(كل وحدة بالعصب اللي يغذي العضلة اللي تحتها)

Superior gemellus: nerve to obturator internus

Inferior gemellus: nerve to quadratus femoris.



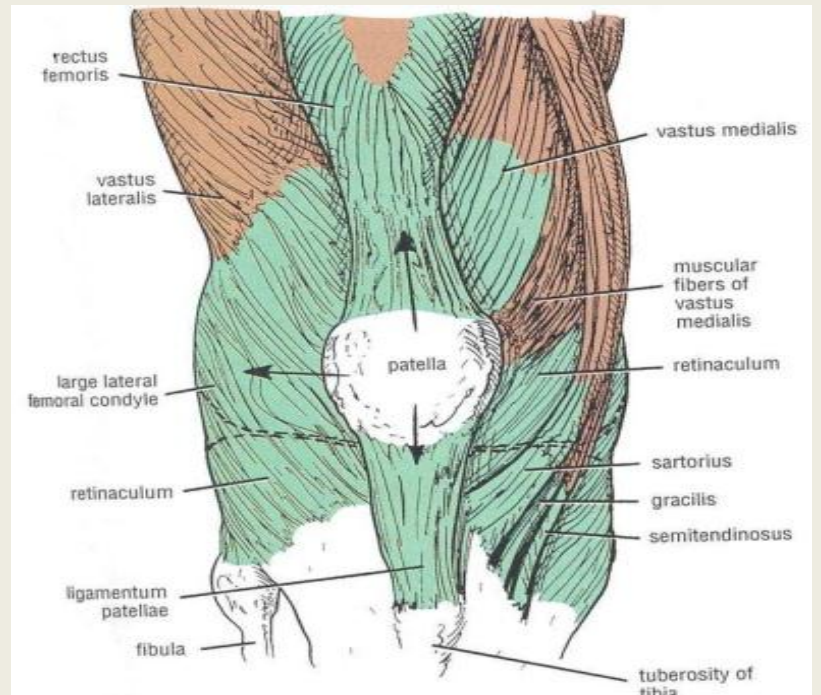
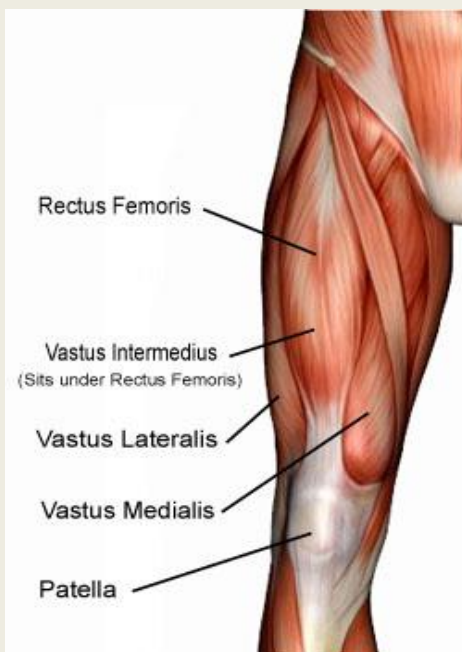
Muscles of the thigh

A - Anterior Compartment

(Supplied by femoral nerve)

1 - Quadriceps Femoris (big muscle with 4 parts)

	Rectus femoris	Vastus intermedius	Vastus medialis	Vastus lateralis
Origin	Anterior inferior iliac spine (Hip)	Front of shaft of femur	Posterior border of femur	Posterior border of femur
Insertion	Into Patella to tuberosity of Tibia through LIGAMENTUM PATELLAE			
Action	Extension of knee joint			



2- SARTORIUS

Origin : Anterior superior iliac spine

Insertion : Upper part of medial surface of tibia

Action : (TAILOR'S POSITION)

Flexion, abduction & lateral rotation of hip joint

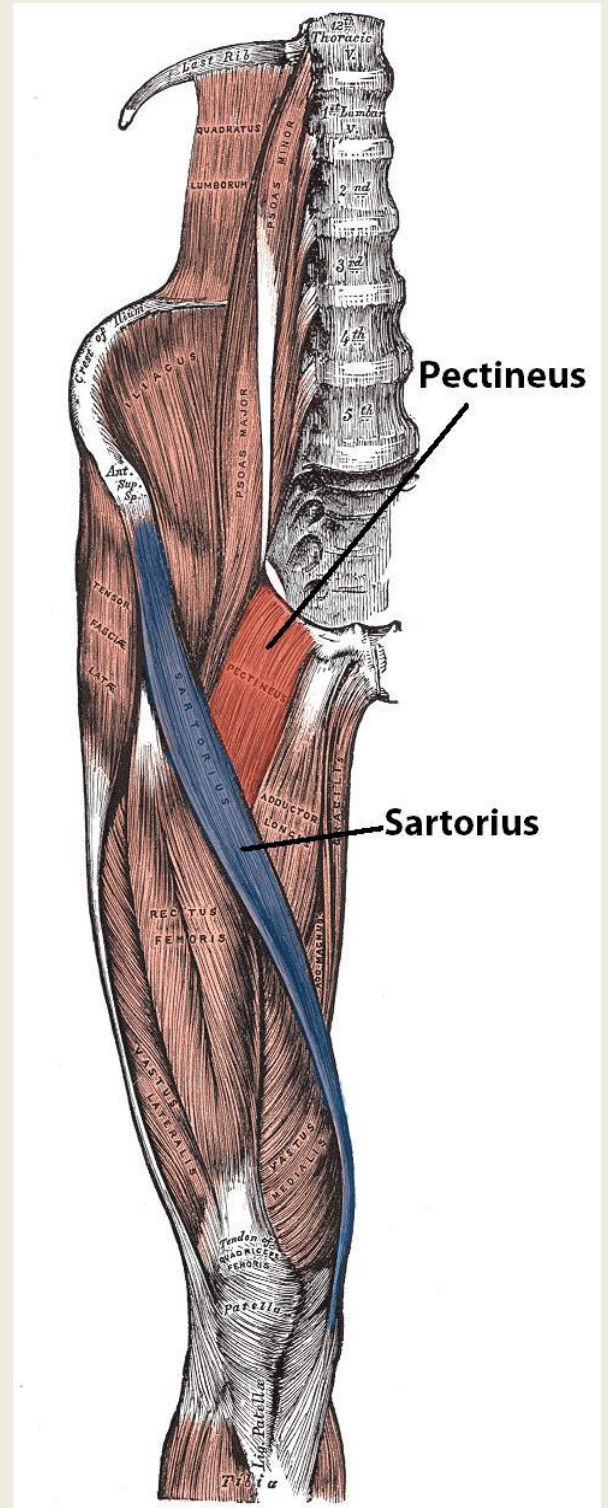
Flexion of knee joint

3 – PECTINEUS

Origin : Superior pubic ramus

Insertion: Back of femur (below lesser trochanter)

Action : Flexion & adduction of hip joint



4 - ILIACUS

Origin : iliac fossa

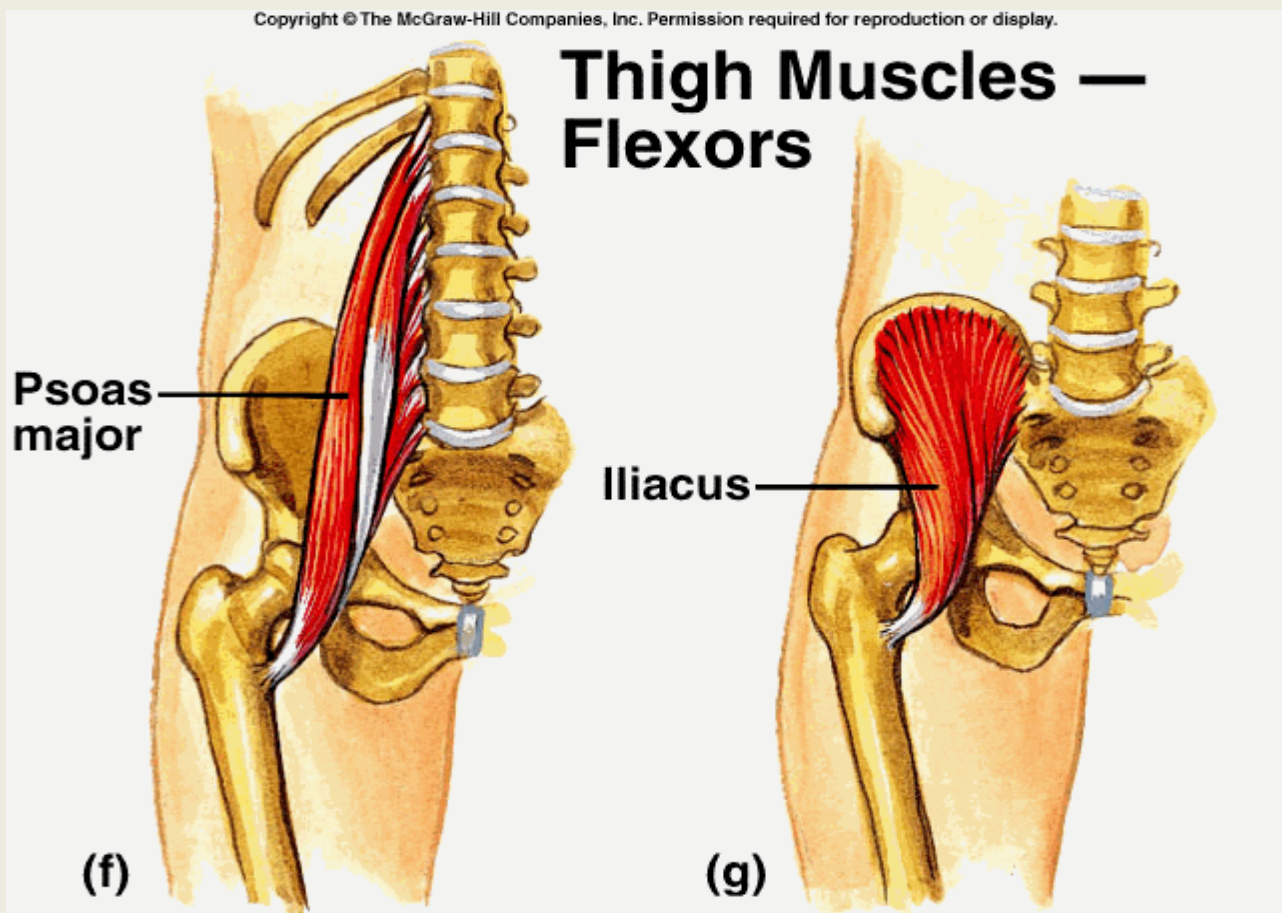
Insertion : Lesser trochanter of femur

Action : Flexion of hip joint

5 - PSOAS MAJOR

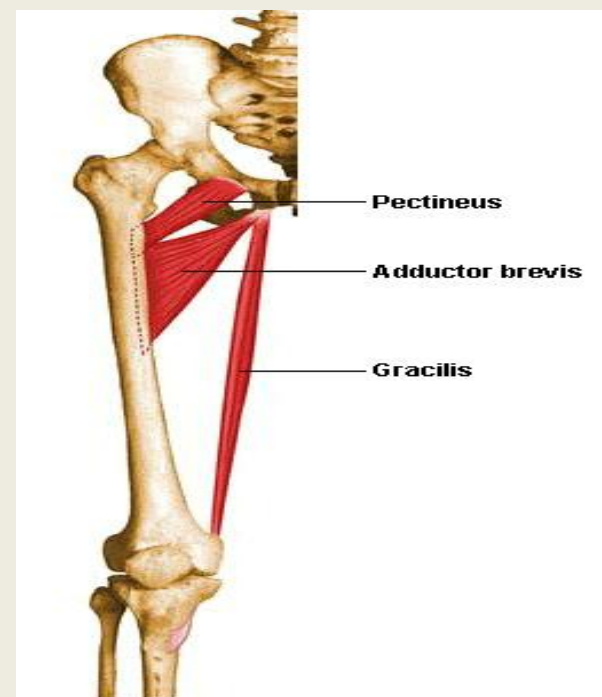
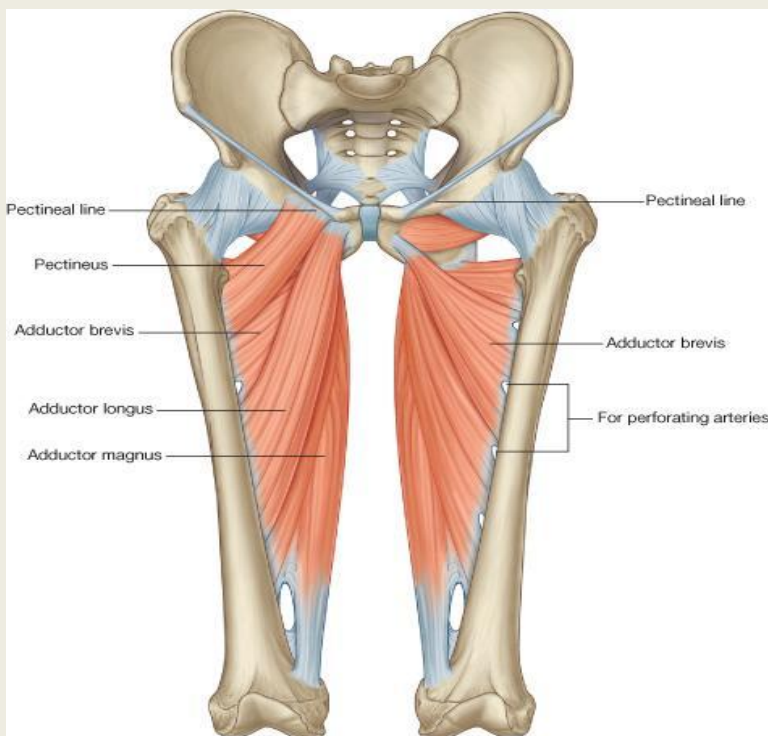
Origin : Transverse processes of T12-L5 and the lateral aspects of the discs between them

It has the same insertion, action of **ILIACUS**



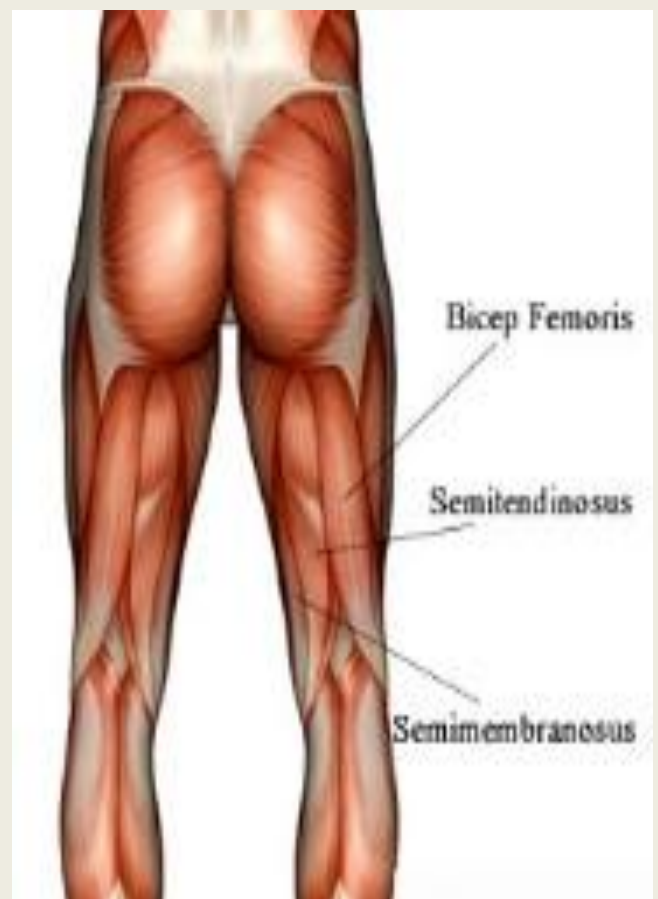
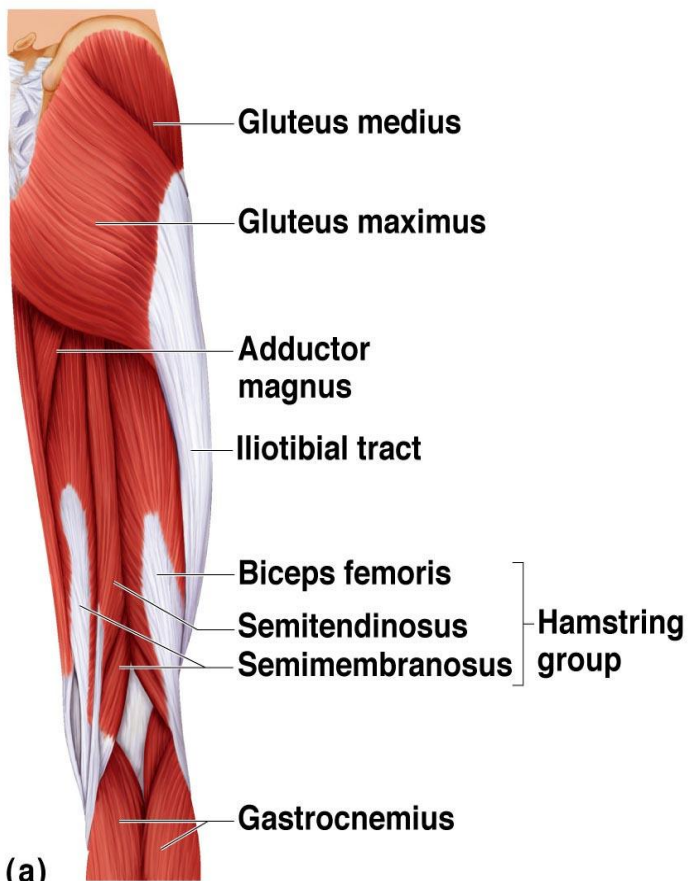
B - Medial Compartment

	Adductor longus	Adductor brevis	Adductor magnus	Gracilis
Origin	Body of pubis	Pubis Body + Inferior pubic ramus	Inferior pubic ramus Ischial ramus	
Insertion	Posterior border of femur (Linea Aspera)			Upper part of medial surface of tibia (behind sartorius)
Nerve supply	Obturator nerve			
Action	adduction of hip joint			Same action + flex knee



C - Posterior Compartment (Hamstrings)

	semitendinosus	semimembranosus	biceps femoris
Origin	Ischial tuberosity		long head : ischium tuberosity+ short head : linea aspera
insertion	Upper part of the medial surface of the shaft of the tibia <u>(SGS)</u>	Medial surface of tibia	head of the fibula
Nerve supply	Sciatic nerve		
Action	<ul style="list-style-type: none"> Flexes and medially rotates the leg at the <u>knee joint</u>; Extends the thigh at the hip. 	<ul style="list-style-type: none"> <u>Flexion of knee.</u> <u>Lateral rotation of flexed leg.</u> Long head: <u>extends hip.</u> 	



Muscles of the Leg

A - Anterior Compartment

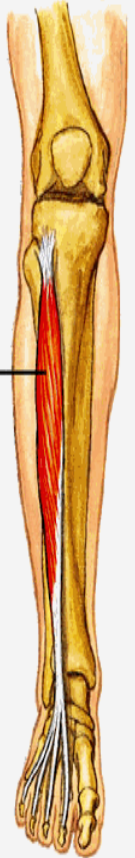
	Tibialis Anterior	Ext Dig Longus	Ext Hallucius Longus	Peroneus Tertius
Origin	Lateral surface of shaft of tibia, interosseous membrane	Anterior surface of shaft of fibula		
Insertion	Medial cuneiform & base of 1st metatarsal bone	Extensor expansion of lat (4) toes	Base of distal phalanx of great toe	Base of 5th metatarsal bone
Nerve supply	Deep Peroneal			
Action	Dorsi flexion & Inversion of foot and maintains Medial Long arch	Extension of toes & Dorsi flexion of foot	Dorsi flexion & Inversion of the foot and extension of big toe	Dorsiflexion and Eversion of the foot.

Anterior Leg Muscles (4)

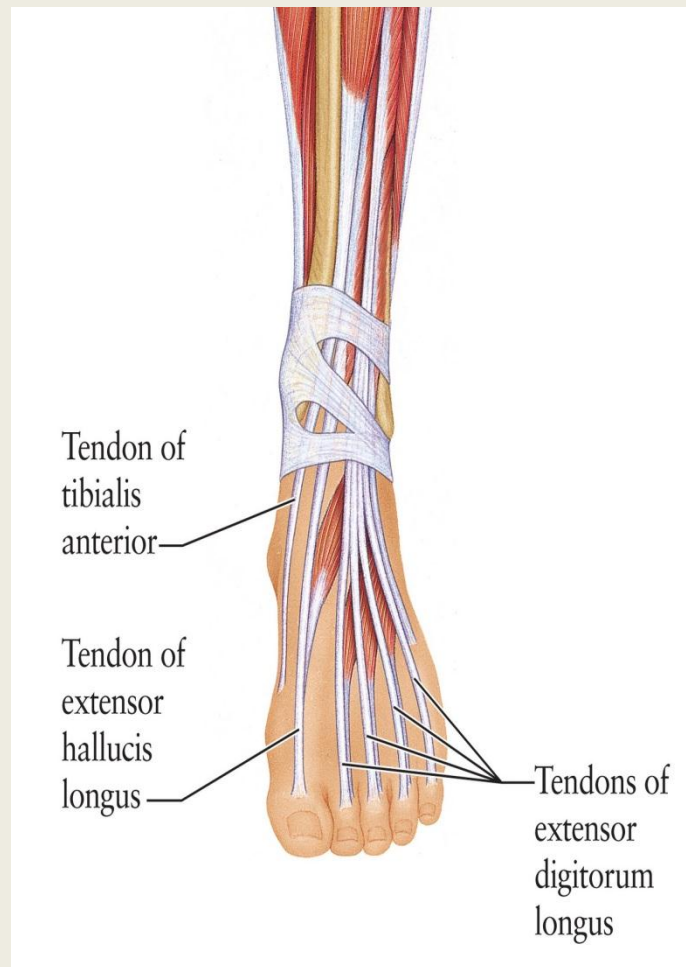
Tibialis anterior



Extensor digitorum longus



(d)

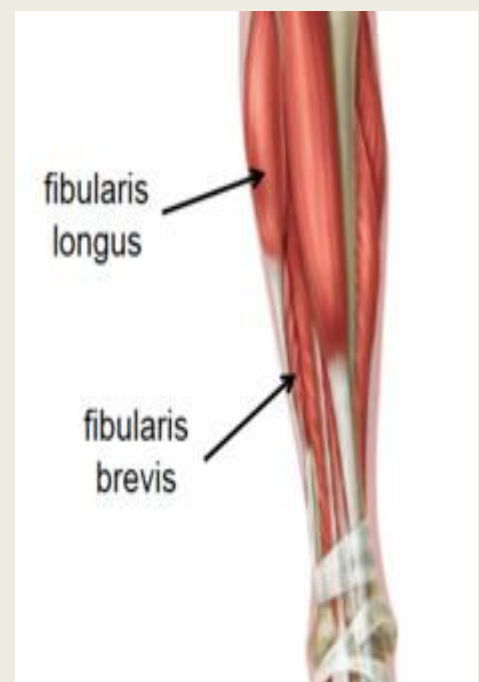
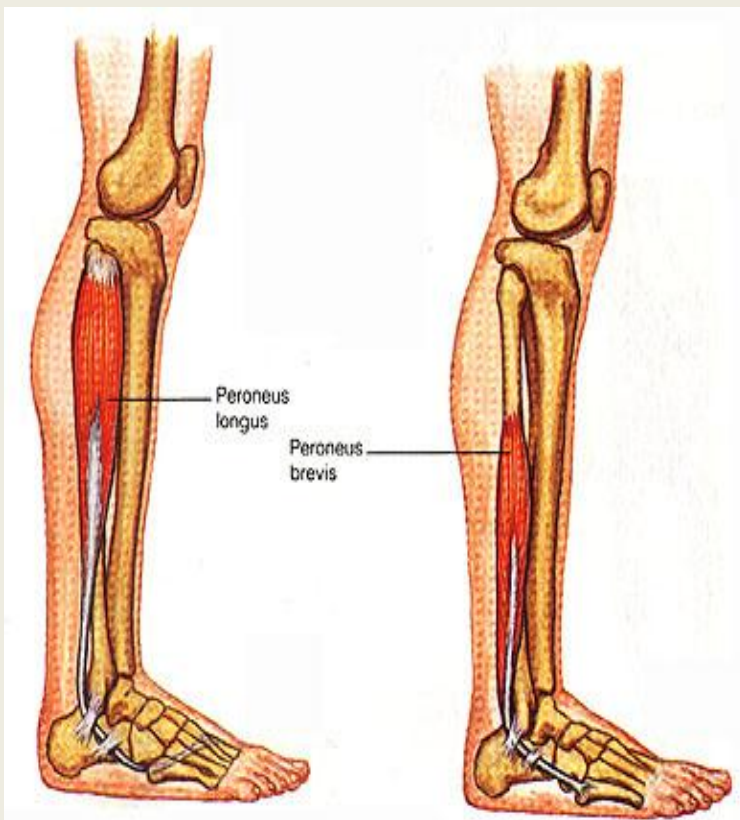


**Ext
Hallucis
Longus**

**Peroneus
Tertius**

B - Lateral Compartment

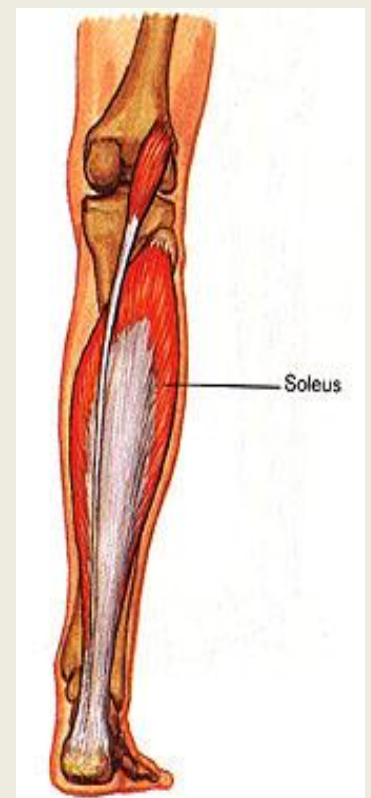
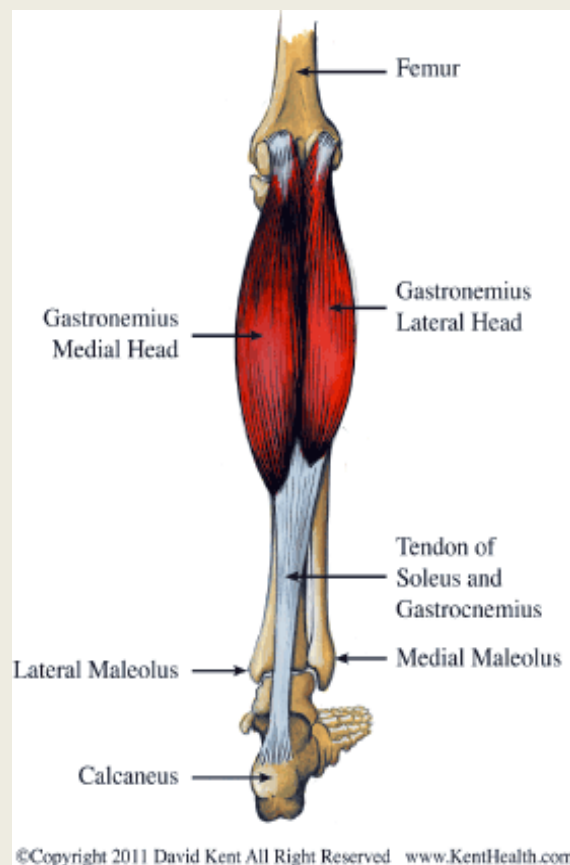
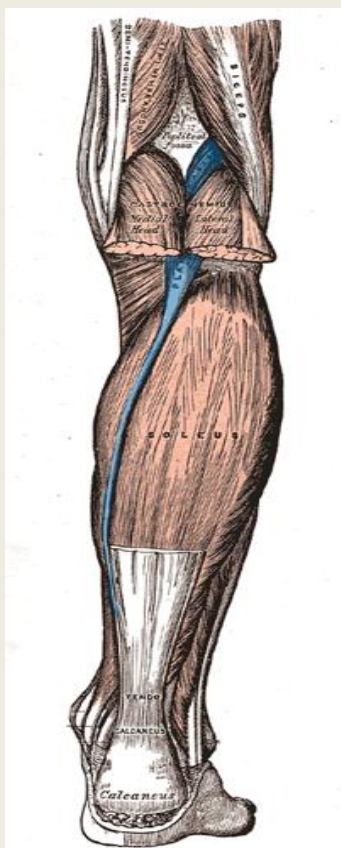
	Peroneus longus	Peroneus brevis
Origin	Lateral surface of shaft of fibula	
Insertion	Medial cuneiform & base of 1st metatarsal bone	Base of 5th metatarsal bone
Nerve Supply	Superficial Peroneal	
Action	Plantar flexion & Eversion of the foot and supports lateral longitudinal arch	



C - Posterior compartment

1 - SUPERFICIAL GROUP

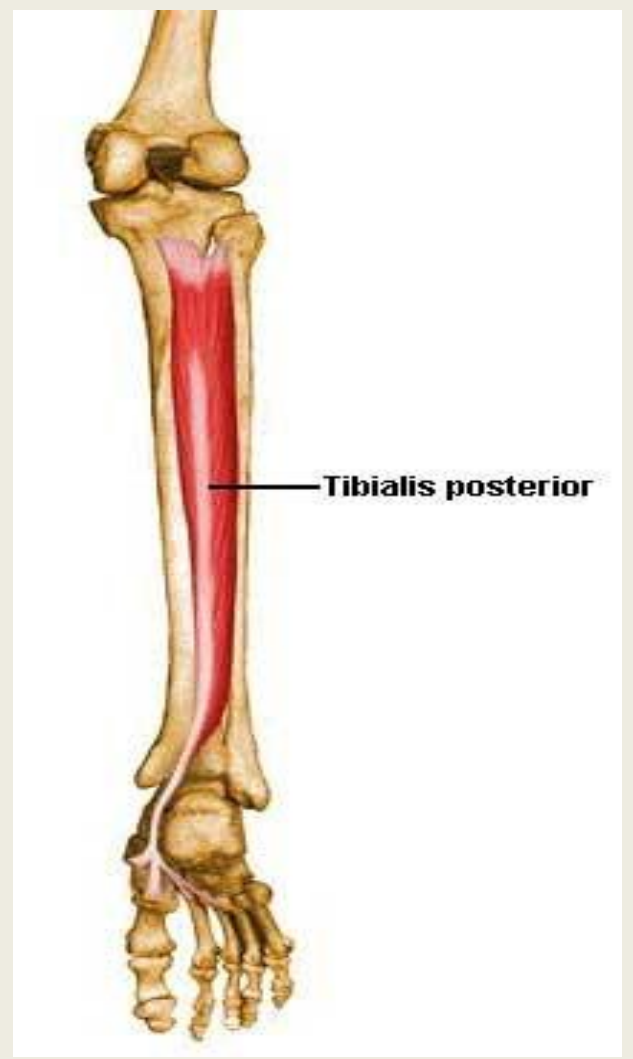
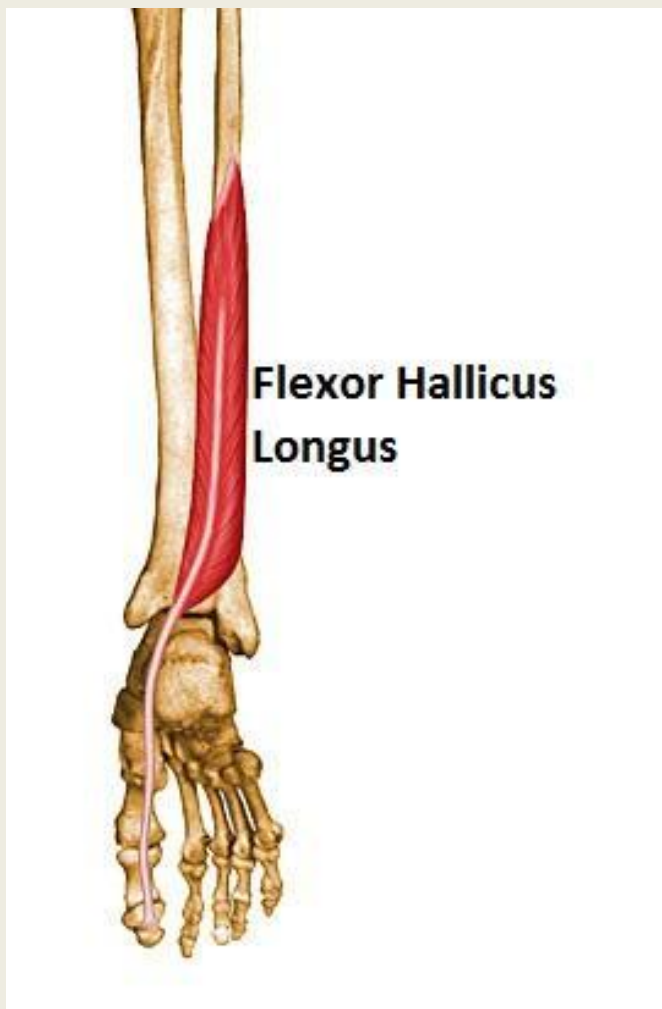
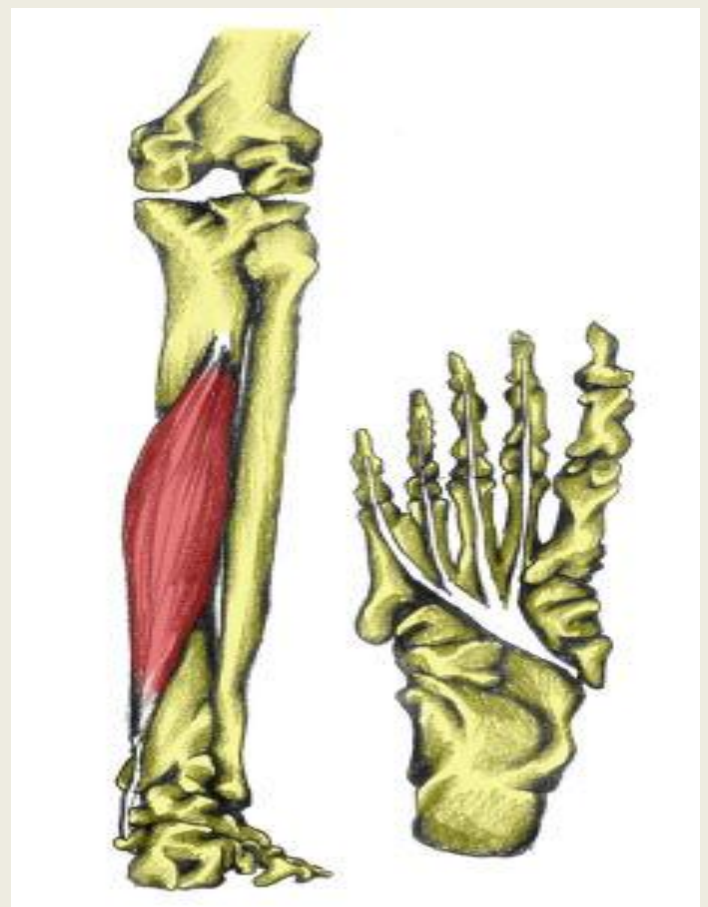
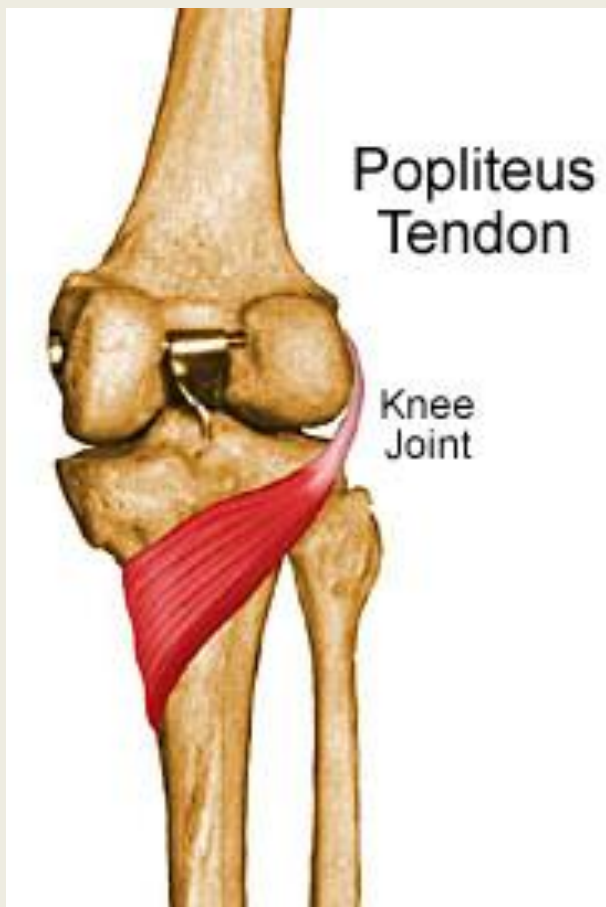
	Plantaris	Gastrocnemius	Soleus
origin	Lateral supracondylar ridge of femur	Head of lateral condyle of femur and medial condyle of femur from above	shafts of tibia + fibula
Insertion	Posterior surface of calcaneum	Posterior surface of calcaneum via tendo calcaneus (Achilles tendon)	
Nerve supply	tibial nerve		
Action	Plantar flexes foot and flexes knee , soleus : provides main propulsive force in walking and running		



Plantaris

2 - Deep Group

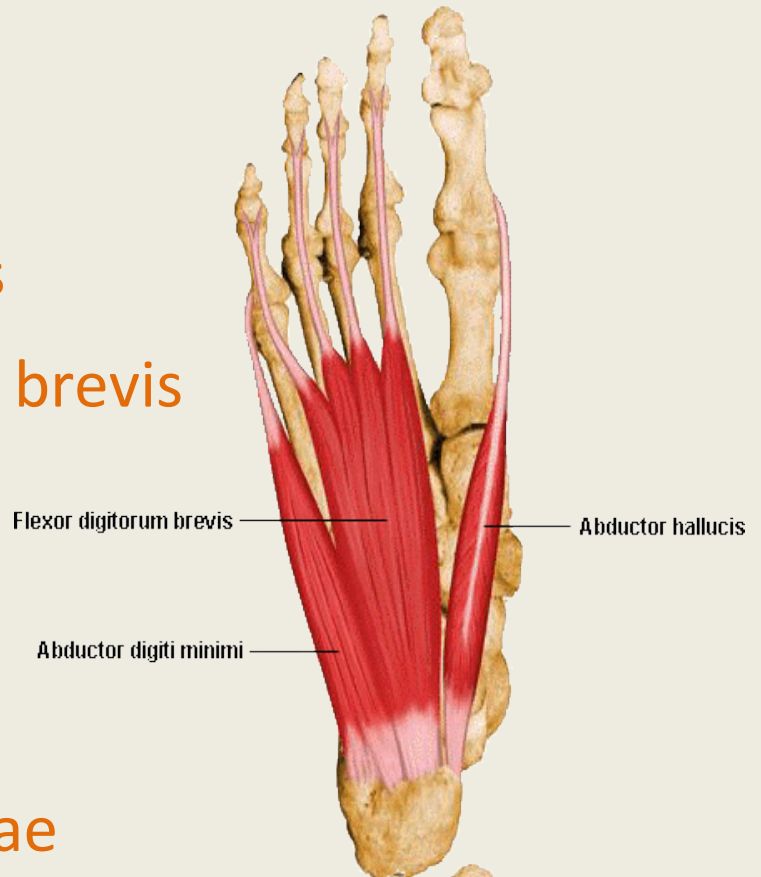
	Popliteus	Flexor digitorum longus	Flexor hallucis longus	Tibialis posterior
Origin	lateral surface the Lateral condyle of Femur	Posterior surface of the shaft of the tibia	Posterior surface of the shaft of the fibula	Posterior surface of the shaft of the fibula + Tibia
Insertion	Post surface of shaft of tibia above soleal line	base of the distal phalanges of the four lateral toes	base of distal phalanx of big toe	Tuberosity of navicular and others
Nerve Supply	Tibial Nerve			
Action	<u>Flexes leg at knee joint;</u> <u>Unlocks knee joint by lateral rotation of femur on tibia</u>	<u>Flexes distal phalanges of lateral four toes;</u> <u>plantar Flexes foot at ankle joint;</u> <u>Supports medial and lateral longitudinal arches</u>	<u>Flexes distal phalanx of big toe;</u> <u>plantar flexes foot at ankle joint;</u> <u>supports medial longitudinal arch</u>	<u>Plantar flexes foot at ankle joint;</u> <u>inverts foot at subtalar and transverse tarsal joints;</u> <u>supports medial longitudinal arch</u> <u>Plantar flexes foot at ankle joint;</u> <u>inverts foot at subtalar and transverse tarsal joints;</u> <u>supports medial longitudinal arch</u>



Muscles of the Sole of Foot

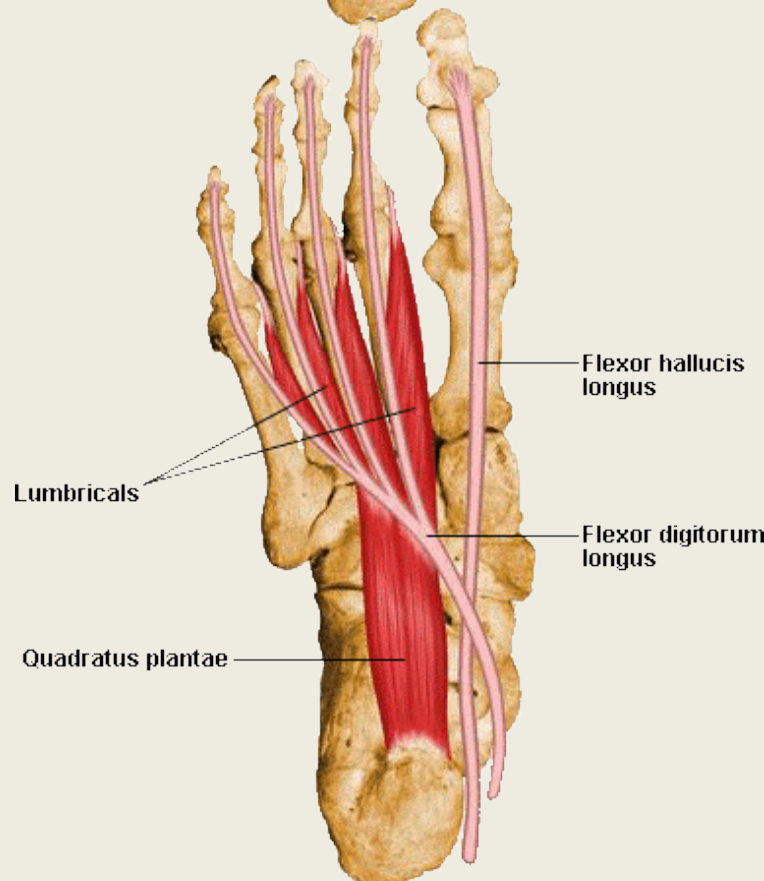
First Layer

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



Second Layer

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

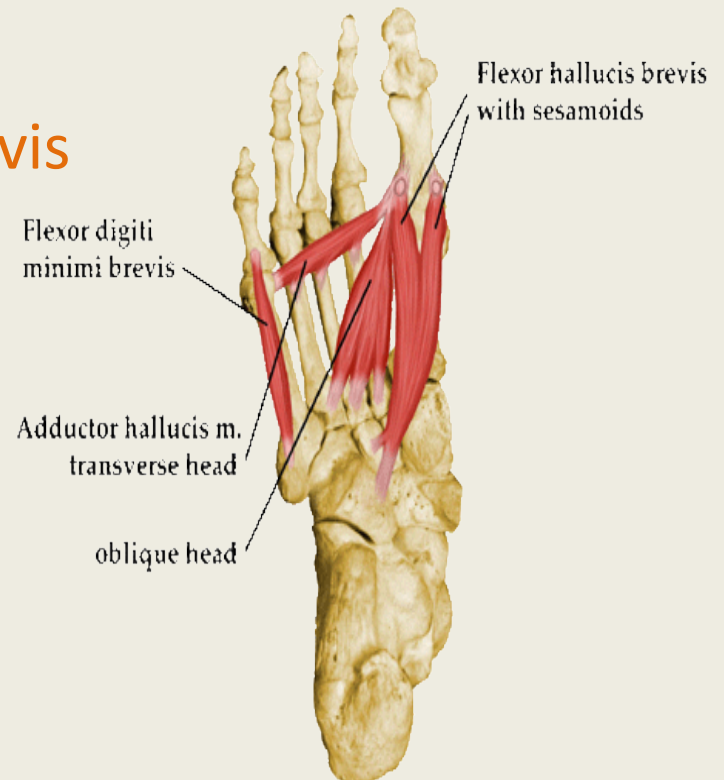


Third Layer

1 - Flexor hallucis brevis

2 - Adductor hallucis

3 - Flexor digiti
minimi brevis

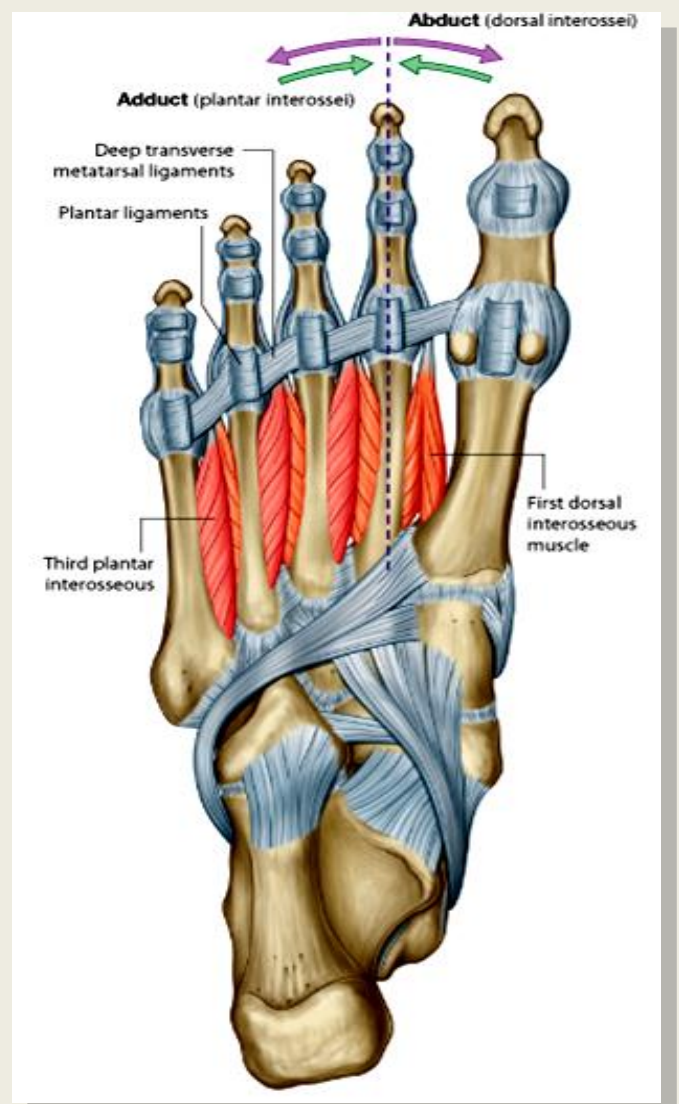


Fourth Layer

1 – Interossei (3
plantar + 4 dorsal)

2 - Peroneus longus
(tendon)

3 - Tibialis posterior
(tendon)



Summary of leg movement

Movement	Muscles ^a
Metatarsophalangeal joints	
Flexion (A)	Flexor digitorum brevis Lumbricals Interossei Flexor hallucis brevis Flexor hallucis longus Flexor digit minimi brevis Flexor digitorum longus
Extension (B)	Extensor hallucis longus Extensor digitorum longus Extensor digitorum brevis
Abduction (C)	Abductor hallucis Abductor digiti minimi Dorsal interossei
Adduction (D)	Adductor hallucis Plantar interossei

^aMuscles in boldface are chiefly responsible for the movement; the other muscles assist them.

Movement	Muscles ^a
Interphalangeal joints	
Flexion (fig. A)	Flexor hallucis longus Flexor digitorum longus Flexor digitorum brevis Quadratus plantae
Extension (fig. B)	Extensor hallucis longus Extensor digitorum longus Extensor digitorum brevis

^aMuscles in boldface are chiefly responsible for the movement; the other muscles assist them.