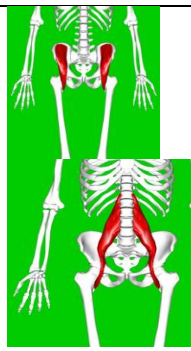
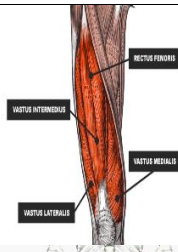
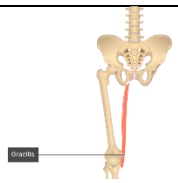
| muscle | origin | insertion | nerve | movement | picture |
|---|---|---|---|---|---|
| Iliopsoas (2muscles: Ilicaus, psoas major) | Ilicaus : Iliac fossa Psoas: transvesre Processes+ inter vertebral discs of (T12-L5) | Lesser Trochanter Of femur | Femoral Nerve Psoas Major: (L1-L3) | Flex the thigh. Psoas : Flex trunk on thigh |  Unknown Author |
| sartorius | Anterior superior iliac spine | Upper medial surface of tibia (SGS) | Femoral Nerve | Tailor position: (flex +abduct+ Laterally rotate the thigh ) (Flex + medially rotate the knee) |  |
| Quadriceps (4 heads) | Rectus femoris (2 heads): Straight head :anterior inferior iliac spine Reflected head : above the acetabulum 2-vastus intermediates | All of them inserted in :patella +tibia tuberosity via the | Femoral nerve | Extend knee<br><br>Rectus femoris: Flex thigh also |    |

| | | | | | |
|---|---|---|---|---|---|
| | :anterior +lateral surface of femur 3-vastus medialis+4-vastus lateralis: Upper end shaft of femur | patellar ligament | | | |
| Pectineus muscle | Superior pubic ramus | Linea aspera | Femoral nerve | Flex+ Adduct Thigh |  |
| Adductor Longus | Body of pubis | Linea aspera | Obturator nerve | Adduct thigh |  |
| Adductor brevis | Inferior Pubic ramus | Linea aspera | Obturator nerve | Adduct Thigh |  |
| Adductor magnus | Pubic arch | Linea aspera | Obturator nerve | Adduct Thigh |  |

| | | | | | |
|---|---|---|---|---|---|
| Gracilis | Pubic arch | Upper medial surface of Tibia (SGS) | Obturator nerve | Adduct Thigh+ flex And medial Rotate of leg |  |

Note :

The first 4 muscles located in the anterior compartment of the thigh

The last 4 muscles located in the medial compartment of the thigh.

| muscle | origin | insertion | nerve | movement | picture |
|---|---|---|---|---|---|
| Gluteus maximus | Outer surface of (ilium+sacrum Coccyx) | Gluteal tuberosity +iliotibial tract | Infragluteal Nerve | Extend+lateral rotate of the Thigh . Extend the knee (iliotibial tract) |  |
| Gluteus Medius +minimums | Outer surface Of ilium | Greater trochanter | Supra gluteal nerve | Abduction . Prevent tilting of the pelvis. |  |
| Tensor fascia latae | Iliac crest | Iliotibial tract | Supra gluteal nerve | Help gluteal maximus in knee extension |  |

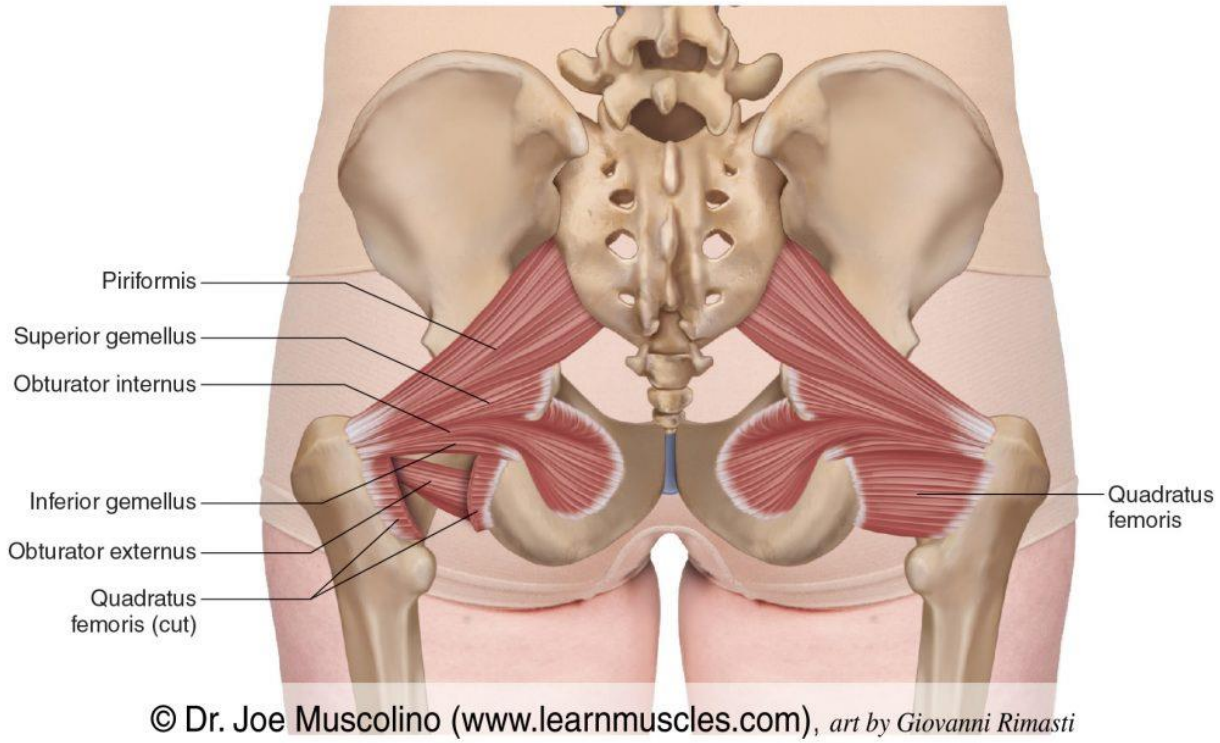
| | | | | | |
|---|---|---|---|---|---|
| Biceps femoris (2heads) | Long head : Ischial tuberosity<br>Short head : Linea aspera+ Lateral supracondylar line | Styloid process of fibula | Long: sciatic<br>Short: common peroneal | Long:<br>Extend hip+ Flex knee<br>Short:<br>Flex knee<br>Both:<br>Laterally rotate the knee |  |
| semitendinosus | Ischial tuberosity | Upper medial surface of tibia (SGS) | Sciatic nerve | Extend hip+ Flex knee medially rotate the knee |  |
| semimembranosus | ischial tuberosity | Back of medial condyle of the tibia | Sciatic nerve | Extend hip+ Flex knee medially rotate the knee |  |
| Adductor Magnus (ischial head) | Ischial tuberosity | Adductor tubercle of femur | Sciatic nerve | Extend hip+ Flex knee medially rotate the knee | |

The last four muscles located in the posterior of the thigh

The first three muscles located in the gluteal region

Note :

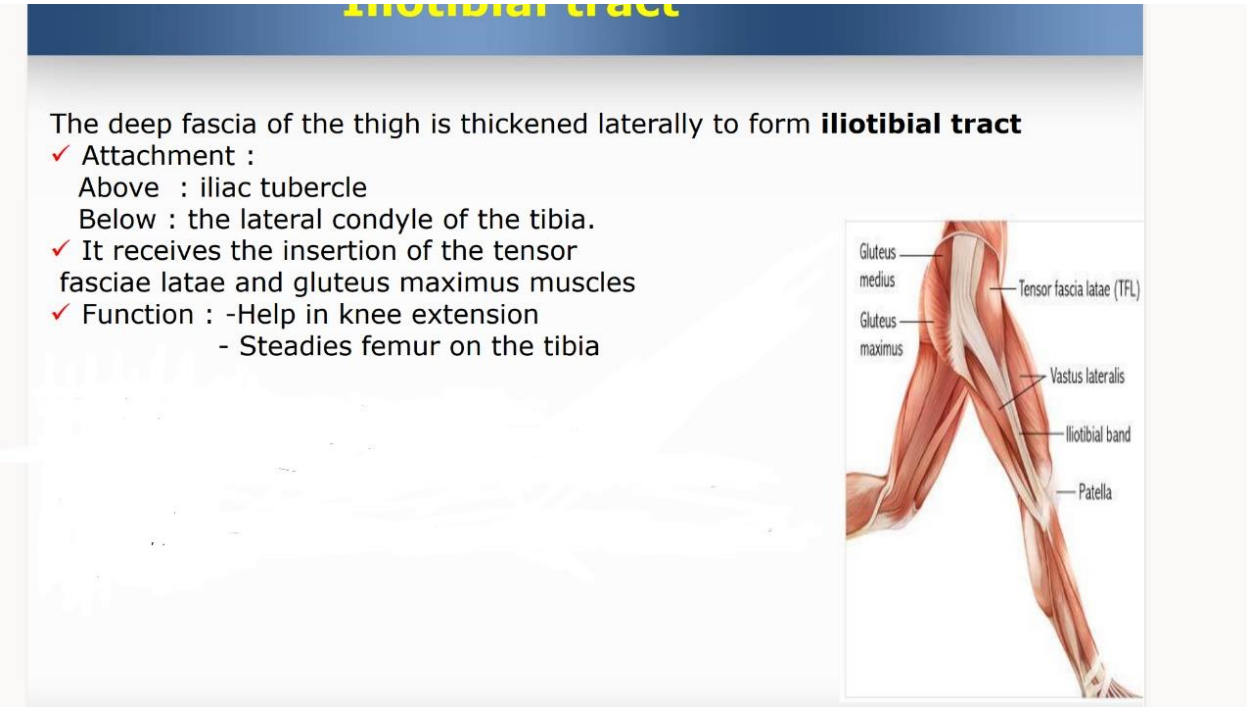
There are muscles called the “ lateral rotators of the thigh”: function : lateral rotation of the thigh




| muscle | nerve |
|---|---|
| piriformis | S1,S2 |
| Obturator internus | Nerve to obturator internus |
| Superior gemillus | Nerve to obturator internus |
| Quadratus femoris | Nerve to Quadratus femoris |

| | |
|---|---|
| Inferior gemillus | Nerve to Quadratus femoris |
| Obturator externus | Obturator nerve |

Ok let’s don’t forget to talk about iliotibial tract:




And lets talk about injuries :

1-Injury of superior gluteal nerve:

Unilateral injury of superior gluteal nerve leads to lurching gait. (a positive Trendelenburg's sign.)

Bilateral injury of superior gluteal nerve leads to waddling gait.

2- Sciatica:

Causes :

Prolapse of an intervertebral disc with pressure of one or more

roots of lower lumbar or sacral nerves.

Manifestation:

Pain along the sensory distribution of the sciatic nerve as,

posterior aspect of the thigh, the posterior and lateral sides of the

leg, and the lateral part of the foot.

3- Sciatic nerve Injury

Causes :

Penetrating wounds, fractures of the pelvis, or

dislocations of the hip joint and Wrong intramuscular

injections.

Manifestation :

Motor :

1-Week flexion of the knee

2-Foot drop

Sensory:

loss of sensation below the knee, except for a narrow area down the medial side of the leg and the medial border of the foot.

Differ:

Thigh has: medial, anterior, posterior compartments.

Leg has: lateral , anterior , posterior compartments.

## Muscles of the leg

The Deep Fascia of the Leg

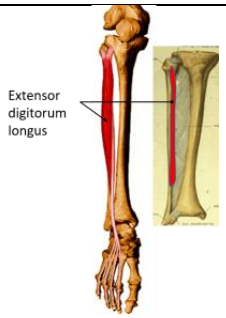
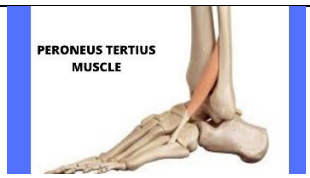
1. It is very strong and surrounds the leg

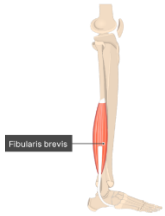
2. It is thickened to form 5 retinaculae:

Two extensor retinaculae (superior and inferior)

Two peroneal (Fibular) retinacula (superior and inferior)

One flexor retinaculum.

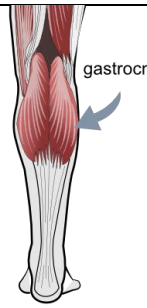
| muscle | origin | insertion | nerve | movement | picture |
|---|---|---|---|---|---|
| Tibialis anterior | Lateral surface of tibia | Medial cuneiform and first metatarsal | Deep Peroneal nerve | Dorsiflexion + inversion Of foot |  |
| Extensor hallucis longus | Anterior surface of fibula | Distal phalanx of the big toe | Deep peroneal nerve | Extends big toe+ Dorsiflexion Of foot |  |
| Extensor digitorum longus | Anterior surface of fibula | Extensor expansion of the lateral four toes | Deep peroneal nerve | Extends lateral 4 toes+ Dorsiflexion Of foot |  |
| Peroneus tertius | Anterior surface of fibula | Base of the fifth metatarsal bone | Deep peroneal nerve | Dorsiflexion + eversion Of foot |  |
| Extensor digitorum brevis | calcaneus | Proximal phalanx of the big toe+ the second third +fourth toes | Deep peroneal nerve | Extend medial four toes.<br><br>Focus: ***medial*** |  |

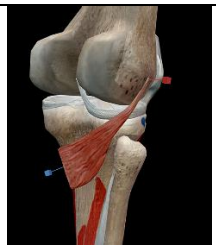
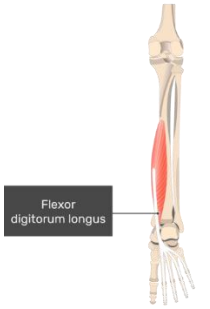
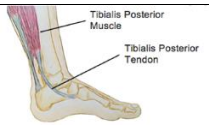
| | | | | | |
|---|---|---|---|---|---|
| Fibularis (peroneus) longus | Lateral surface of fibula | The first meta tarsal | Superficial peroneal nerve | Plantarflexion + Eversion of foot |  |
| Fibularis (peroneus) brevis | Lateral surface of fibula | The fifth meta tarsal | Superficial peroneal nerve | Plantarflexion + Eversion of foot |   |

The first 5 muscles located in the anterior compartment.

The last 2 muscles located in the lateral compartment.

## The posterior muscles of the leg

| muscle | origin | insertion | nerve | movement | picture |
|---|---|---|---|---|---|
| Gastrocnemius ( 2 heads ) | Lateral and medial condyle of the femur | Tendo calcaneus into calcaneus bone | Tibial nerve | Aid the movement+ Plantar flexion+ Week knee flexion |   |
| Soleus ( heart of lower limb ) | Shaft of tibia + fibula | Tendo calcaneus into calcaneus bone | Tibial nerve | Plantar flexion+ Week knee Flexion+ antigravity muscle |  |

| | | | | | |
|---|---|---|---|---|---|
| Plantaris | Lateral supracondylar Ridge of femur | Tendo calcaneus into calcaneus bone | Tibial nerve | Plantar flexion+ Week knee Flexion |  |
| popliteus | Lateral condyle of femur | Posterior surface of tibia above the soleal line | Tibial nerve | Flex + unlock the knee |  |
| Flexor digitorum longus | Posterior surface of tibia | The distal phalanx of lateral 4 toe | Tibial nerve | Plantar flexion of the foot + flex the toes |  |
| Flexor hallucis longus | Posterior surface of fibula | The distal phalanx of big toe | Tibial nerve | Plantar flexion of the foot + flex the big toe |  |
| Tibialis posterior | Posterior surface of tibia + fibula | All tarsals Except : talus | Tibial nerve | Plantar flexion of the foot + inversion of the foot |  |

The first 3 muscles are located in the superficial group.

The last 4 muscles are located in the deep group.

Note:

Popliteus unlock the knee joint (tibia is medially rotated OR femur is laterally rotated)

Biceps femoris lock the knee joint (tibia is laterally rotated OR femur is medially rotated) ( full extension of the knee joint )

## Muscles of the foot

### Muscles of the Sole of the Foot

- The muscles of the sole are arranged in four layers from the inferior layer superiorly.
- The 2nd and 4th layers contains tendons of muscle of posterior and lateral compartment of the leg

All the muscles of the foot are supplied **by lateral plantar nerve**
**EXCEPT**
1. Abductor halluces
2. Flexor digitorum brevis
3. Flexor hallucis brevis
4. 1st Lumbiricalis

Are supplied by medial plantar nerve

| First layer | Second layer | Third layer | Fourth layer |
|---|---|---|---|
| Abductor hallucis | Quadratus Plantae | Flexor hallucis brevis | interossei(4 dorsal + 3 plantar) |
| Flexor digitorum brevis | Lumbricals (4) | Adductor hallucis | Peroneus longus tendon |
| Abductor digiti minimi | Flexor digitorum longus | Flexor digiti minimi brevis | Tibialis posterior tendon |
| | Flexor hallucis longus | | |

The number of muscles in the foot is 20.

Doctor said that we exclude the muscles that originate from leg which are : (Flexor digitorum longus , Flexor hallucis , Peroneus longus tendon , Tibialis posterior tendon)

So, we have now 18 muscles

The last 2 are from the extensor digitorum brevis which has 2 insertion: 1- in the big toe 2- in the $2^{nd}$ $3^{rd}$ $4^{th}$ toe

So now it is 20.

Let’s end with some disorders happened in the foot:

1- Flat foot: the medial longitudinal arch is depressed or collapsed.
2- Pes cavus (claw foot ) : the medial longitudinal arch is excessively high caused by muscle imbalance as in poliomyelitis.

The end

Made by : SUHAIB ABWEINI

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