

## MUSCLES OF LOWER LIMB



### Iliac Region

Muscle	Origin	Insertion	Innervation	Action
<b>Psoas Major</b>	Transverse process and body of T12 and upper four lumbar vertebra, intervertebral discs, between T12 and L5	Lesser trochanter of femur (Receives fibers of iliacus muscle)	Branches from upper four lumbar nerves	Powerful flexor of thigh
<b>Psoas Minor</b>	Lateral surface of bodies of T12 and L1 vertebrae	Pectineal line and iliopectineal eminence and the iliac fascia	Branches from L1 nerve	Weak flexor of thigh at the hip joint
<b>Iliacus</b>	Iliac fossa, anterior inferior iliac spine	Lesser trochanter of femur	Femoral Nerve	Powerful flexor of thigh at the hip joint

### Anterior Thigh Muscles

Muscle	Origin	Insertion	Innervation	Action
<b>Sartorius Muscle</b>	Anterior superior iliac spine	Superior part of the medial surface of tibia	Femoral Nerve	Flex, abducts and laterally rotates the thigh at hip joint. Flex and medially rotates the leg at knee joint
<b>Quadriceps Femoris Muscle, Rectus Femoris</b>	<i>Straight Head:</i> Anterior Inferior iliac spine <i>Reflected Head:</i> The groove above acetabulum	All four parts of quadriceps form a common tendon that encase the patella and finally insert into the tibial tuberosity	Femoral Nerve	Extend the leg at the knee joint, the rectus femoris also helps to flex the thigh at hip joint
<b>Vastus Medialis</b>	Intertrochanteric line and the medial lip of linea aspera on femur			
<b>Vastus Lateralis</b>	Greater trochanter and the lateral lip of linea aspera			
<b>Vastus Intermedius</b>	Anterior and lateral surface of the body of the femur			
<b>Articularis Genu</b>	Anterior surface of lower part of femur	Upper part of synovial membrane of knee joint	Femoral Nerve	Draws the synovial membrane upward during extension of leg

### Medial Thigh Muscles

Muscle	Origin	Insertion	Innervation	Action
<b>Pectineus Muscle</b>	Pectineal line of Pubis	Along the pectineal line of the femur	Femoral Nerve, may be obturator or accessory obturator nerve	Flexes, adducts and medially rotates the femur
<b>Adductor Longus Muscle</b>	From anterior pubis where pubic crest joins symphysis pubis	Middle 1/3 <sup>rd</sup> of femur along linea aspera	Obturator Nerve	Adducts, flexes and medially rotates the femur
<b>Adductor Brevis Muscle</b>	Outer surface of inferior pubic ramus between gracilis and obturator externus	Along pectineal line of femur and the upper part of linea aspera	Obturator Nerve	Adducts, flexes and medially rotates femur
<b>Adductor Magnus Muscle</b>	Inferior ramus of pubis, ramus of ischium and ischial tuberosity	Medial lip of upper 2/3 <sup>rd</sup> of linea aspera, the medial supracondylar line and the adductor tubercle	Obturator Nerve, Sciatic Nerve (tibial division)	Powerful adductor of the thigh
<b>Adductor Minimus Muscle</b>	Same as adductor magnus			
<b>Gracilis Muscle</b>	From body of pubis and adjacent inferior pubic ramus	Upper part of medial surface of tibia below medial condyle	Obturator Nerve	Adducts the thigh
<b>Obturator Externus Muscle</b>	Medial part of outer surface of obturator foramen and medial margin of obturator foramen	Trochanteric fossa of femur	Obturator Nerve	Laterally rotates the thigh

### Lateral Thigh Muscle

Muscle	Origin	Insertion	Innervation	Action
<b>Tensor Fascia Latae Muscle</b>	Outer lip of iliac crest, also from anterior superior iliac spine	Iliotibial tract which then descends to attach to the lateral condyle of tibia	Superior gluteal Nerve	Abducts, flexes and medially rotates the thigh, tenses the iliotibial tract thereby helping to extend leg at knee

### Muscles of Gluteal Region

Muscle	Origin	Insertion	Innervation	Action
<b>Gluteal Maximus Muscle</b>	Outer surface of ilium and iliac crest, dorsal surface of sacrum, lateral side of coccyx and sacrotuberous ligament	Into iliotibial band which then descends to attach to the lateral condyle of tibia, also onto gluteal tuberosity of femur	Inferior Gluteal Nerve	Powerful Extensor of thigh, lateral rotator of thigh, helps steady the extended leg, extends trunk when distal end is fixed
<b>Gluteal Medius Muscle</b>	Extensor surface of ilium between anterior and posterior gluteal lines	Lateral surface of greater trochanter of femur	Superior gluteal nerve	Abducts and medially rotates the thigh, help steady the pelvis

<b>Gluteus Minimus Muscle</b>	Outer surface of ilium between the anterior and inferior gluteal lines	Anterior border of greater trochanter and on fibrous capsule of hip joint	Superior Gluteal Nerve	Abducts and medially rotates the thigh, helps steady pelvis
<b>Piriformis Muscle</b>	Anterior surface of the sacrum and inner surface of sacrotuberous ligament	Upper border of greater trochanter of femur	Muscular Nerve from S1 and S2 nerve	Laterally rotates the extended thigh, when thigh is flexed it abducts femur
<b>Obturator Internus Muscle</b>	Pelvic surface of obturator membrane and from the bone surrounding obturator foramen	Medial surface of greater trochanter proximal to trochanteric fossa	Nerve to obturator internus	Laterally rotates extended thigh and abducts the flexed thigh
<b>Superior Gemellus Muscle</b>	Outer surface of ischial spine	Medial surface of Greater Trochanter with tendons of obturator internus	Nerve to obturator internus	Laterally rotates extended thigh and abducts the flexed thigh
<b>Inferior Gemellus Muscle</b>	From ischial tuberosity	Medial surface of greater trochanter with tendon of obturator internus	Nerve to quadrates femoris	Laterally rotates extended thigh and abducts the flexed thigh
<b>Quadratus Femoris</b>	Lateral body of ischial tuberosity	Quadratus tubercle on posterior surface of the femur, also onto the intertrochanteric crest of femur	Nerve to quadrates femoris	Laterally rotates the thigh

### Posterior Thigh Muscles

<b>Muscle</b>	<b>Origin</b>	<b>Insertion</b>	<b>Innervation</b>	<b>Action</b>
<b>Biceps Femoris Muscle</b>	<i>Long Head:</i> Ischial tuberosity <i>Short Head:</i> Lateral lip of linea aspera of femur	Lateral surface of head of fibula and a small slip to lateral condyle of tibia	<i>Long Head:</i> Tibial part of sciatic nerve <i>Short Head:</i> Peroneal part of sciatic nerve	Flexes the leg and rotates the tibia laterally, long head also extends the thigh at the hip joint
<b>Semitendinosus Muscle</b>	Ischial tuberosity	Medial surface upper part of body of tibia	Tibial part of sciatic nerve	Flexes the leg and rotates the tibia medially, extends thigh
<b>Semimembranosus Muscle</b>	Ischial tuberosity	Posterior aspect of medial condyle of tibia	Tibial part of sciatic nerve	Flexes the leg and rotates it medially, extends thigh

### Muscles of Anterior Compartment of Leg

<b>Muscle</b>	<b>Origin</b>	<b>Insertion</b>	<b>Innervation</b>	<b>Action</b>
<b>Tibialis Anterior Muscle</b>	Lateral condyle and lateral surface of upper half of tibia, interosseous membrane and crural fascia	On the medial and planter surface of the 1 <sup>st</sup> metatarsal bone and medial cuneiform bone	Deep fibular(peroneal) nerve	Dorsiflexes the foot at the ankle joint, inverts and adducts the foot at subtalar and midtarsal joints

<b>Extensor Hallucis Longus Muscle</b>	Medial surface of fibula, anterior part of interosseous membrane and the crural fascia	Dorsal surface of the base of distal phalanx of great toe	Deep fibular (peroneal) Nerve	Extends the great toe, dorsiflexes the foot and tends to invert the foot
<b>Extensor Digitorum Longus Muscle</b>	Lateral Condyle of Tibia, Upper 3/4ths of anterior surface of fibula and the interosseous membrane	On the distal phalanges of the four lateral toes	Deep fibular (Peroneal) Nerve	Extends the lateral four digits, dorsiflexes the foot and tends to evert (pronate) the foot
<b>Fibularis Tertius Muscle</b>	Distal 1/3 <sup>rd</sup> of the anterior surface of the fibula and the interosseous membrane	Dorsal surface of the base of the 5 <sup>th</sup> metatarsal bone	Deep fibular (Peroneal) Nerve	Dorsiflexes the foot and assist in everting the foot

### **Muscles of Lateral Compartment of Leg**

<b>Muscle</b>	<b>Origin</b>	<b>Insertion</b>	<b>Innervation</b>	<b>Action</b>
<b>Fibularis Longus Muscle</b>	Head and upper 2/3 <sup>rd</sup> of the lateral surface of the body of fibula	Lateral aspect of the base of 1 <sup>st</sup> metatarsal bone and the medial cuneiform bone	Superficial fibular (peroneal) nerve	Everts the foot (Tends to pronate the foot)
<b>Fibularis Brevis Muscle</b>	Distal 2/3 <sup>rd</sup> of lateral surface of fibula and intermuscular septum	Lateral surface and base of the 5 <sup>th</sup> metatarsal bone	Superficial fibular (peroneal) nerve	Everts the foot (Tends to pronate the foot)

### **Muscles of Posterior Compartment of Leg** **Superficial Group**

<b>Muscle</b>	<b>Origin</b>	<b>Insertion</b>	<b>Innervation</b>	<b>Action</b>
<b>Gastrocnemius Muscle</b>	<u>Medial Head:</u> Medial Epicondyl of Femur <u>Lateral Head:</u> Lateral Epicondyl of Femur	Posterior surface of calcaneus by means of calcaneal tendon	Tibial Nerve	Plantarflexes the foot, flexes the leg at knee joint, tends to supinate the foot
<b>Soleus Muscle</b>	Posterior surface of head and upper 1/3 <sup>rd</sup> of body of fibula, soleal line and medial border of tibia	Joins the tendon of gastrocnemius to insert on the calcaneus by means of calcaneal tendon	Tibial Nerve	Plantarflexes the foot
<b>Plantaris Muscle</b>	Posterior aspect of lateral epicondyl of femur and from oblique popliteal ligament	Into the calcaneal tendon with gastrocnemius and soleus muscle	Tibial Nerve	Assist gastrocnemius in plantarflexion of foot and flexing the leg

## Deep Group

Muscle	Origin	Insertion	Innervation	Action
<b>Popliteus Muscle</b>	Lateral Epicondyl of femur, lateral meniscus of the knee joint	Posterior surface of body of tibia proximal to soleal line	Tibial Nerve	Flexes and medially rotates the tibia when femur is fixed, Laterally rotates the femur to unlock knee joint when tibia is fixed
<b>Tibialis Posterior Muscle</b>	Posterior surface of intosseous membrane, posterior surface of tibia and medial surface of fibula	Tuberosity of navicular bone, slips t calcaneus, the 3 cuneiforms the cuboid and the 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> metatarsal bones	Tibial Nerve	Planterflexes the foot, inverts and adducts the foot
<b>Flexor Digitorum Longus Muscle</b>	Posterior surface of tibia and fascia over tibialis posterior	Bases of the distal phalanx of the four lateral toes	Tibial Nerve	Flexes distal phalanx of lateral four toes. Planterflexes and supinates the foot
<b>Flexor Hallucis Longus</b>	Lower 2/3 <sup>rd</sup> of posterior fibula and lower part of intosseous membrane	Base of the distal phalanx of large toe	Tibial Nerve	Flexes distal phalanx of large toe, Planterflexes and supinates foot

## Muscles of Sole of the Foot

### 1<sup>st</sup> Layer of Muscles

Muscle	Origin	Insertion	Innervation	Action
<b>Abductor Hallucis Muscle</b>	Flexor retinaculum, Medial process of calcaneal tuberosity, Planter aponeurosis	Medil side of the base of the proximal phalanx of large toe	Medial Planter Nerve	Abducts and flexes the large toe
<b>Flexor Digitorum Brevis</b>	Medial process of Calcaneal tuberosity, Planter aponeurosis	By four tendons onto the middle phalanx of lateral four toes	Medial Planter Nerve	Flexes the lateral four toes
<b>Abductor Digiti Minimi Muscle</b>	Medial and Lateral processes of the calcaneal tuberosity, Planter aponeurosis	Lateral side of base of the proximal phalanx of small toe	Lateral Planter Nerve	Abducts and flexes the little toe

### 2<sup>nd</sup> Layer of Muscles

Muscle	Origin	Insertion	Innervation	Action
<b>Quadratus Plantar Muscles</b>	By two heads from the planter surface of calcaneus, Long planter ligament	Lateral and deep surfaces of tendons of flexor digitorum longus muscle	Lateral Peroneal Nerve	Assist flexor digitorum longus muscle
<b>Lumbrical Muscles</b>	Medial side of the 1 <sup>st</sup> tendon of flexor digitorum longus muscle	Dorsal digital expansion	Medial Planter Nerve	Flexes prximal phalanxat the metatarsophalangeal joint, Extends the two distal phalanges at the interphalangeal joints
<b>2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Lumbrical Muscles</b>	Each muscle by two heads from adjacent surfaces of 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> tendons of flexor digitorum muscles	Course along the medial sides of 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> toes and insert on their respective dorsal digital expansion	Lateral Planter Nerve	

### 3<sup>rd</sup> Layer of Muscles

Muscle	Origin	Insertion	Innervation	Action
<b>Flexor Hallucis Brevis Muscle</b>	Planter surface of cuboid and later cuneiform bones, Tendon of tibialis posterior	By two tendons onto the sides of the base of the proximal phalanx of large toe	Medial Planter Nerve	Flexes the proximal phalanx of the large toe at the metatarsophalangeal joint
<b>Flexor Digiti Minimi Muscle</b>	Base of 5 <sup>th</sup> metatarsal bone, the sheath of tendon of fibularis longus	Lateral side of the base of the proximal phalanx of small toe	Lateral Planter Nerve	Flexes the proximal phalanx of small toe at metatarsophalangeal joint
<b>Adductor Hallucis Muscle</b> <i>Transverse Head</i>	Planter metatarsophalangeal ligaments of 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> toes, Deep transverse metatarsal ligament between the toes	By the common tendon to lateral aspect of base of proximal phalanx of large toe	Lateral Planter Nerve	Adducts large toe, flexes large toe at metatarsophalangeal joint
<i>Oblique Head</i>	Base of 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> metatarsal bones, sheath of tendon of fibularis longus muscle			

### 4<sup>th</sup> Layer of Muscles

Muscle	Origin	Insertion	Innervation	Action
<b>Planter Introssei (3 Muscles)</b>	Base and medial sides of 3 <sup>rd</sup> , 4 <sup>th</sup> , and 5 <sup>th</sup> metatarsal bones	Bases of proximal phalanx of 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> toes (medial expansion) onto dorsal digital expansion	Lateral planter Nerve	Adduct 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> toes, flex metatarsophalangeal joints, extend interphalangeal joints
<b>Dorsal Introssei (4 Muscles)</b>	Each by 2 heads from adjacent sides of metatarsal bones	Proximal phalanx and dorsal digital expansion of 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> toes	Lateral Planter Nerve	Abduct 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> toes. Flex metatarsophalangeal joints and extend interphalangeal joints