MUSCLES ACTING ON THE LOWER LIMB

David B. Fankhauser, PhD

Martini's 6th, pp 367-377, 7th: 363-372, 8th: 371-383

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MUSCLES ACTING ON FEMUR: (p 373) most arise from the pelvis except:

principle ***flexor of hip***, together called **iliopsoas**, both insert into **lesser trochanter** by same tendon, under inguinal ligament

psoas major and minor origin: lumbar vertebrae (beef tenderloin: filet mignon, *chateaux briand*)(p. minor is absent in 40% pop)

iliacus origin: iliac crest and fossa insert: lesser trochanter (psoas inserts distal to lesser trochanter)

GLUTEAL (BUTTOCKS): important for bipedal locomotion, stabilizing weight bearing: G max: knee, G med & G min: hip.

Gluteus maximus	*extensor and lateral rotator*	origin: ilium, sacrum and coccyx. Insert: **iliotibial band**&gluteal tuberosity important for bipedal locomotion: strengthens extended knee
gluteus medius	*abduct, medially rotate*	outer surf. ilium to lat. surf. of greater trochanter, passes above hip joint
gluteus minimus	*abduct, medially rotate*	outer surf. ilium to ant. surface of greater trochanter, passes anteriorly

tensor fascia lata: (lata: broad) fascia lata invests all of the thigh muscles. inserts into iliotibial band, **stabilizes knee**.

THIGH (p 375) **divided into *three compartments*, anterior, posterior, medial:** Bottom, 375

MEDIAL COMPARTMENT: *adductor compartment* (of thigh), ***all originate fr pubis***, adduct thigh (pulled = pulled groin muscle)

adductor magnus	Inserts	along whole length of linea aspera
adductor longus	Inserts	middle third of linea aspera, anterior to magnus
adductor brevis	Inserts	upper portion of linea aspera, anterior to magnus
pectineus	most proximal. origin: superior pubic ramus	

MUSCLES ACTING ON LEG: (p 375 & 366)

gracilis: in medial compartment, but inserts medial surface of tibia. Can act to flex leg, assist adduction.

ANTERIOR COMPARTMENT: *extensor compartment* (all extend the knee)

quadriceps femoris: formed from four muscles, all insert into patella, anchored to the patellar ligament, different origins:

rectus femoris	Origin:	anterior inferior iliac spine and superior acetabular rim
vastus intermedius	Origin:	anterior surface femur, linea aspera
vastus lateralis	Origin:	below greater trochanter
vastus medialis	Origin:	length of linea aspera

sartorius: Origin: ant. sup. iliac spine Insertion: medial tibial tuberosity, flexes both leg and thigh, lateral rotation

POSTERIOR COMPARTMENT *flexor compartment* (of the knee) **Hamstring muscles**. ***All originate from ischial tuberosities***.

biceps femoris	lateral most, tendon also lateral at knee (2nd origin: along linea aspera of femur)
semimembranosus	head of fibula, lateral condyle tibia. At insertions, all posterior compartment tendons form **popliteal fossa.**
semitendinosus	medial most, long tendon of insertion, lies on top of membranosus

MUSCLES ACTING ON ANKLE AND FOOT: (p 377)

THREE COMPARTMENTS OF THE LEG: (p 381)

ANTERIOR COMPARTMENT: dorsiflex foot, extends toes. tendons of insertion are held down by two retinacula ankle

tibialis anterior	medial cuneiform, 1st metatarsal	dorsiflex, invert (small tears = shin splints)
extensor digitorum longus	inserts superior surf, of phalanges 2-5	extends toes, everts foot
extensor hallucis longus	inserts superior surf dist 1st phalanx	extends great toe, inverts foot

LATERAL COMPARTMENT: everts foot. (Very small compartment)

fibularis longus	tendon under foot to 1st metatarsal, med cuneiform	evert foot, plantar flex,	(**peroneus longus**)
fibularis brevis:	inserts lateral side of 5th metatarsal	evert foot, plantar flex	(**peroneus brevis**)

POSTERIOR COMPARTMENT: all but last plantar flex foot

gastrocnemius	lateral and medial condyles of femur, inserts into Achilles tendon
soleus	underlies gastrocnemius, fibula and tibia, inserts into Achilles tendon
plantaris	posterior surface of femur, above lateral condyle, inserts posterior calcaneus, plantar flex
popliteus	flexes and med rotates leg

These internal muscles have tendons which pass behind medial malleolus, act on foot and toes

flexor hallucis longus	origin: fibula	insert: distal 1st phalanx	flexes big toe, plantar flex foot, inverts foot
flexor digitorum longus	origin: tibia	insert: distal phalanges 2-5	plantar flexes toes 2-5
tibialis posterior	inserts:	medial tarsals, 2nd-4th metatarsals	inversion, dorsiflexion

Intrinsic muscles of the foot are similar to hand, but heavier. The foot possesses supporting arch. Covered with plantar aponeurosis

INTRINSIC MUSCLES OF FOOT: (p 379)

DORSAL:

extensor hallucis brevis

extensor digitorum brevis

PLANTAR four layers:

flexor digitorum brevis	superficial (step on a stone, bruise this muscle = "stone bruise")
abductor digiti minimi	superficial
lumbricales	second layer
adductor hallucis	third layer
plantar interossei	deepest layer