



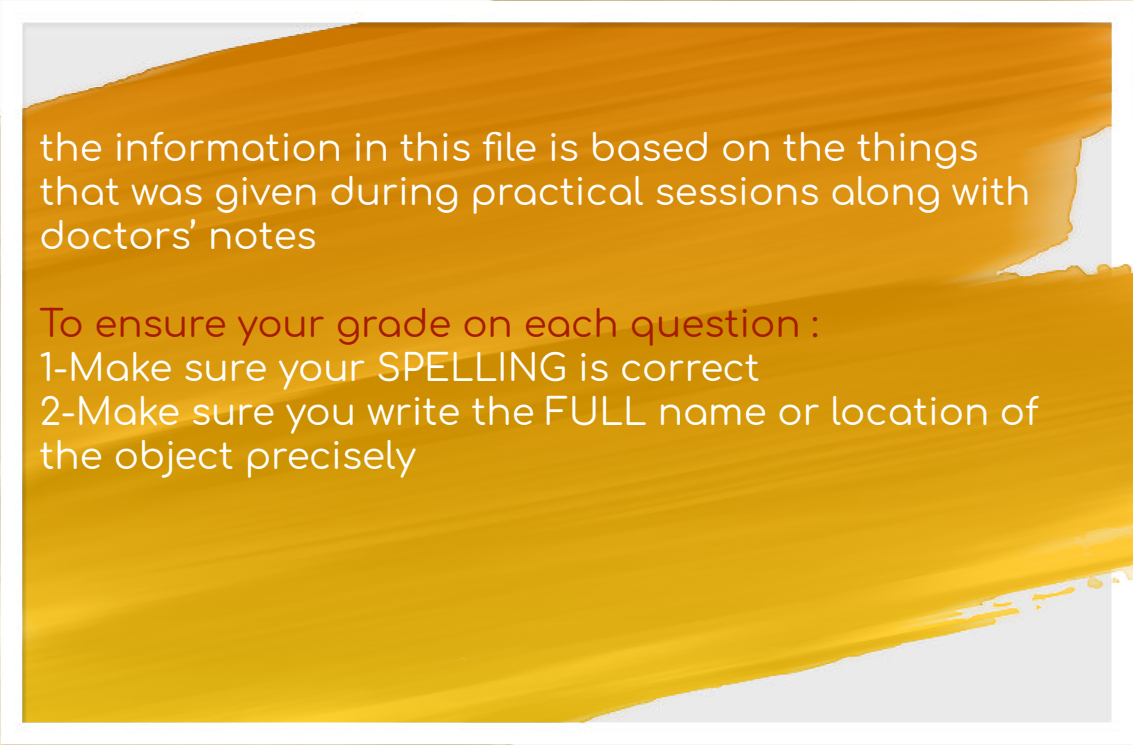
Muscles and bones of the lower limb

Musculoskeletal Block



Anatomy Practical team - Med 439





the information in this file is based on the things that was given during practical sessions along with doctors' notes

To ensure your grade on each question :

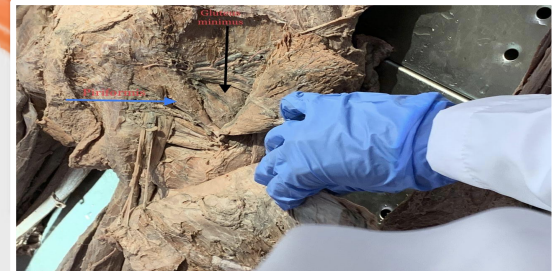
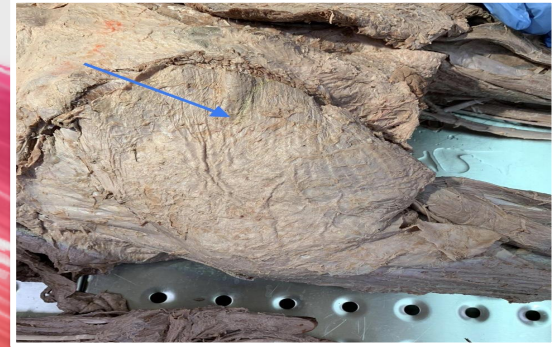
1-Make sure your SPELLING is correct

2-Make sure you write the FULL name or location of the object precisely

A graphic featuring three horizontal brush strokes in shades of red, orange, and yellow. A white rectangular border is centered over the strokes, containing the text "Gluteal region" in a white, sans-serif font.

Gluteal
region

	Origin	Insertion	Action	Nerve supply
Gluteus Maximus	<p>-<u>Posterior</u> part of the gluteal surface of ilium</p> <p>-Back of sacrum & coccyx & back of Sacrotuberous ligament</p>	<p>-Main insertion: iliotibial tract</p> <p>-Other insertion: gluteal tuberosity of the femur (posterior)</p>	<p>-Extension & lateral rotation of the hip joint</p> <p>-Through its attachment to iliotibial tract, it stabilizes the femur on the tibia during standing</p>	Inferior gluteal nerve.
Gluteus medius	<u>Middle</u> part of the gluteal surface of ilium	<u>Lateral</u> surface of the greater trochanter	<p>-Abduction & Medial rotation of hip joint.</p> <p>-Also prevent tilt of the pelvis on raising the other limb from ground</p>	Superior gluteal nerve.
Gluteus minimus	<u>Anterior</u> part of the gluteal surface of ilium	<u>Anterior</u> surface of the greater trochanter		
Piriformis Important	Pelvic surface of middle 3 sacral vertebrae	Greater trochanter	<p>- Lateral rotation of the hip joint.</p> <p>- Control movement of the hip joint.</p>	Anterior rami of S1,2



Obturator internus located in the middle between superior and inferior Gemellus, In addition superior and inferior Gemellus continues in completed with a tendon of obturator internus



	Origin	Insertion	Action	Nerve supply
Obturator internus	Inner surface of the side wall of the pelvis	Into the medial surface of the greater trochanter	<ul style="list-style-type: none"> • Lateral rotation of the hip joint. • Control movement of the hip joint. 	Nerve to obturator internus
Superior Gemellus	Upper part of lesser sciatic notch	Upper & lower part into tendon of obturator internus		
Inferior Gemellus	Lower part of lesser sciatic notch			Nerve to Quadratus femoris
Quadratus Femoris Important	Lateral border of the ischial tuberosity	Quadratus tubercle		



Muscles of
the thigh

The image features three horizontal brush strokes of varying colors: a dark red stroke at the top, a medium red stroke in the middle, and an orange stroke at the bottom. A white rectangular frame is superimposed over the strokes, and the word "Anterior" is written in a white, sans-serif font within the frame.

Anterior

iliopsoas

iliacus

Psoas major

Pectineus

below the vessels

ilium of hip bone

transverse process of
laumbrical vertebral

Superior pubic ramus

Origin

Lesser trochanter of femur

Back of femur (below
lesser trochanter)

Insertion

Flexion of hip joint

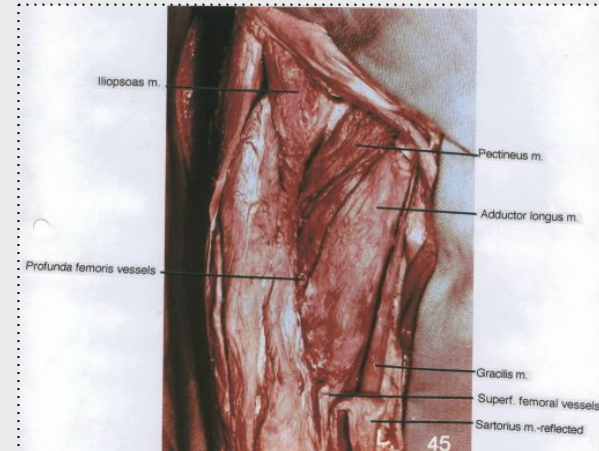
Flexion & adduction of
hip joint

Action

Femoral nerve

Nerve supply

Only one muscle insert in the (lesser trochanter), but (greater trochanter) has many muscles



Sartorius

important

Quadriceps Femoris

Vastus lateralis

Vastus medialis

Vastus intermedius

Rectus Femoris

Anterior superior iliac spine

Lateral lip of the linea aspera of the femur

Medial lip of the linea aspera of the femur

Anterior and lateral surface of the femur.

Anterior inferior of iliac spine

Origin

Upper part of medial surface of the shaft of the tibia (SGS)

-Into PATELLA
-From patella into TUBEROSITY OF TIBIA through LIGAMENTUM PATELLAE (PATELLAR LIGAMENT)

Insertion
Important

- Flexion of knee joint
-Abduction & lateral rotation of hip joint

Extension of knee joint (Rectus femoris also can flex the hip joint)

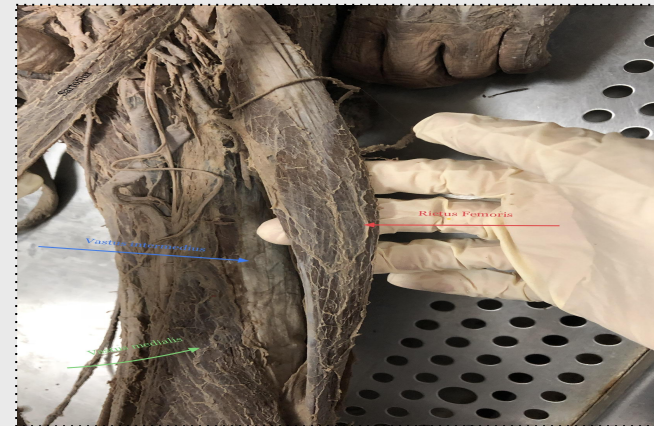
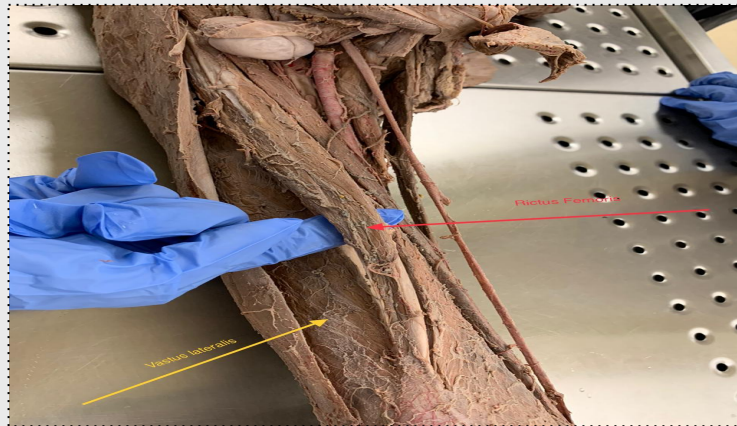
Action

Femoral nerve

Nerve supply

(Deep) نائمة على العظم

Superficially





Medial

Adductor Magnus	Adductor Brevis	Adductor Longus	Gracilis	
-Inferior pubic ramus -Ischial ramus	-Body of pubis -Inferior pubic ramus	Body of pubis	Ischial ramus	Origin
Posterior border of femur (Linea aspera)			Upper part of medial surface of tibia (behind sartorius) (SGS)	Insertion
Adduction of hip joint			- Adduction of hip joint - Flexes knee joint	Action
Obturator nerve				Nerve supply



Adductor longus is clearly and biggest one and medially to it there is adductor Magnus, the adductor brevis located between them and behind adductor Longus

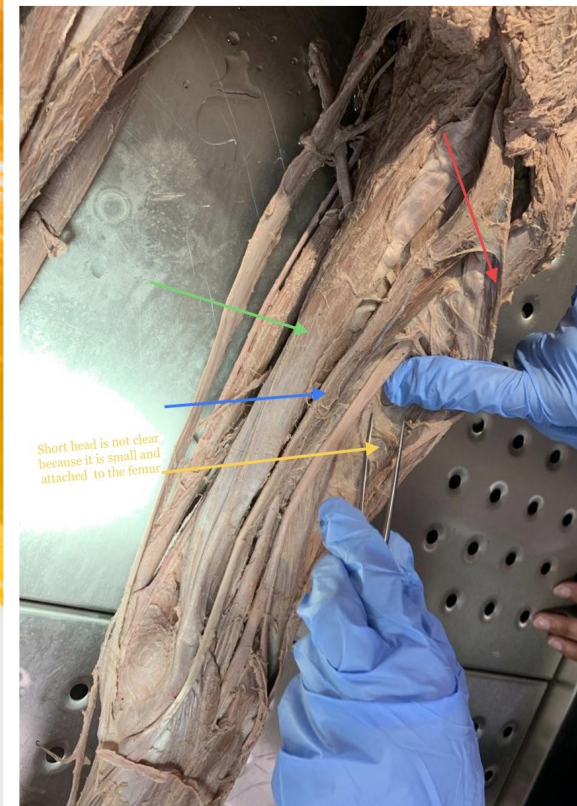
Gracilis is further and in clear position

The image features three horizontal brush strokes of varying lengths and colors, ranging from a deep magenta at the top to a bright orange at the bottom. A white rectangular frame is superimposed over the middle stroke, containing the word "Posterior" in a clean, white, sans-serif font.

Posterior

Hamstring muscles

	Biceps femoris		Semitendinosus Long tendon at the distal part	Semimembranosus Membrane at the proximal part
	Short head تأيم على العظم	Long head Share Semitendinosus in the same origin "Exactly"		
Origin	Linea aspera of the femur	Ischial tuberosity		
Insertion	Into the head of the fibula		Upper part of the medial surface of the shaft of the tibia (SGS)	Posterior surface of the medial condyle of the tibia
Nerve supply	Common peroneal part of the sciatic	Tibial part of the sciatic		
Blood supply	Branches of the profunda femoris artery			
Action	Flexion of knee & lateral rotation of flexed leg.	Flexion of knee , lateral rotation of flexed leg & extends the hib.	Flexes and medially rotates the leg at the knee joint, Extends the of the hip joint	





Muscles of the leg

The image features three horizontal brush strokes of varying lengths and colors, ranging from a deep red at the top to a bright orange at the bottom. A white rectangular frame is superimposed over the middle stroke, containing the word "Anterior" in a clean, white, sans-serif font.

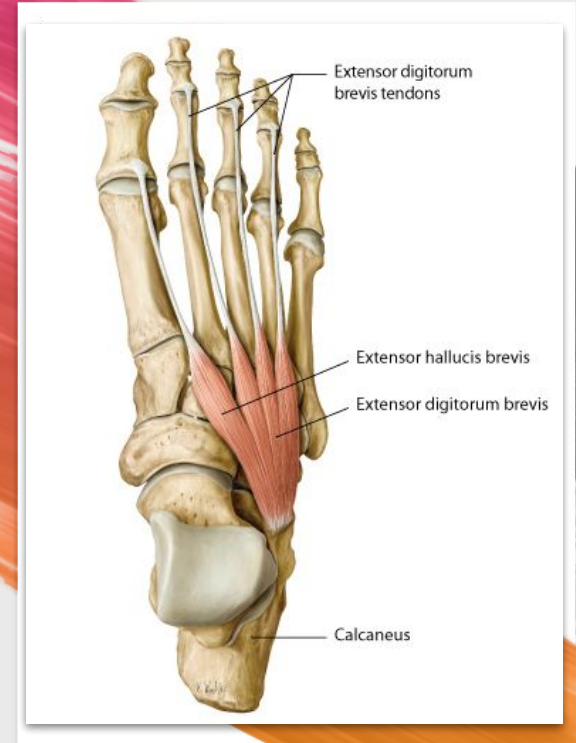
Anterior

	Tibialis anterior	Extensor digitorum longus	Extensor hallucis longus	Peroneus tertius
Origin	Lateral surface of Shaft of the tibia & interosseous membrane	Anterior surface of shaft of fibula & interosseous membrane		
Insertion	Medial cuneiform & base of 1st metatarsal bone	Extensor expansion of lateral 4 toes	Base of distal phalanx of big toe	In the base of 5th metatarsal bone
Nerve supply	Anterior tibial or (deep peroneal) nerve			
Action	- Extension of ankle joint (dorsiFlexion) - Inverts the foot at subtalar joint - Support medial longitudinal arch <small>Insert medially "big toe" = Inversion Insert laterally "little toe" = Eversion</small>	Extends foot at ankle joint - Extends lateral 4 toes	Extends big toe - Extends foot at ankle joint - Inverts the foot at subtalar joint	Extends foot at ankle joint - Evert the foot at subtalar joint



Extensor digitorum brevis

Origin	Anterior part of upper surface of the calcaneum
Insertion	By to 4 tendons into the proximal phalanx of big toe & Extensor expansion of 2nd & 3rd & 4th
Nerve supply	Deep fibular nerve
Action	Extends the toes



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Lateral

	Peroneus longus Superficially	Peroneus brevis Deep "Below peroneus longus"
Origin	Lateral surface of the shaft of the fibula	
Insertion	Base of first metatarsal & medial cuneiform	Base of fifth metatarsal bone
Nerve supply	Superficial peroneal	
Action	Plantar flexes, evert the foot, support lateral longitudinal arch and <u>transverse arch</u>	Plantar flexes, everts the foot, support lateral longitudinal arch



اللي في الصورة هذي
PL
وتحتها مباشرة راح تكون
PB

The image features three horizontal brush strokes of varying lengths and colors, ranging from a deep magenta at the top to a bright orange at the bottom. The strokes have a textured, painterly appearance with visible brush marks. A white rectangular frame is superimposed over the middle stroke, containing the word "Posterior" in a clean, white, sans-serif font.

Posterior

Gastrocnemius



Soleus

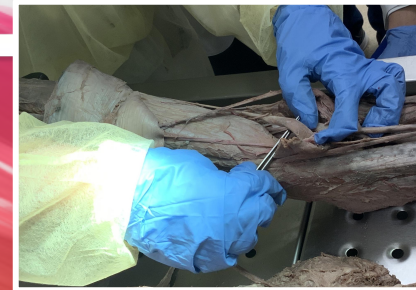
Superficial group

	Gastrocnemius		Soleus	Plantaris
	Lateral head	Medial head		
Origin	lateral condyle of femur	above medial Condyle of femur	Shaft of tibia & fibula	Lateral supracondylar ridge of femur
Insertion	Posterior of surface of calcaneum via tendocalcaneus			Posterior of surface of calcaneum
Nerve supply	Tibial nerve			
Action	<ul style="list-style-type: none"> - Plantar flexes of foot at ankle joint - Flexes the knee joint 		<ul style="list-style-type: none"> - Plantar flexes of foot at ankle joint - Flexes the knee joint - Provide main propulsive force in walking & running 	<ul style="list-style-type: none"> - Plantar flexes of foot at ankle joint - Flexes the knee joint

Deep Group

Behind malleolus:
Tom does very nice hats

Popliteus



	Popliteus	Flexor <u>d</u> igitorum longus	Flexor <u>h</u> allucis longus	<u>T</u> ibialis posterior
Origin	Groove on lateral surface of lateral condyle of femur (intracapsular)	Posterior shaft of the tibia	Posterior shaft of the fibula	Posterior shaft of the fibula & tibia & interosseous membrane
Insertion	Posterior surface of the shaft of the tibia above soleal line	Base of distal phalanges of lateral 4 toes	Base of distal phalanx of big toe	Tuberosity of navicular bone and other neighboring tarsal bones
Nerve supply	Tibial nerve			
Action	Flexes the knee joint & unlock knee joint by lateral rotation	<ul style="list-style-type: none"> - Flexes distal phalanges of lateral 4 toes - Plantar flexes at ankle joint - Supports <u>medial</u> and <u>lateral</u> longitudinal arches 	<ul style="list-style-type: none"> - Flexes distal phalanx of big toe - Plantar flexes of ankle joint - Supports <u>medial</u> longitudinal arches 	<ul style="list-style-type: none"> - Plantar flexes of ankle joint - Invert at subtalar & transverse tarsal joint - Supports <u>medial</u> longitudinal arches

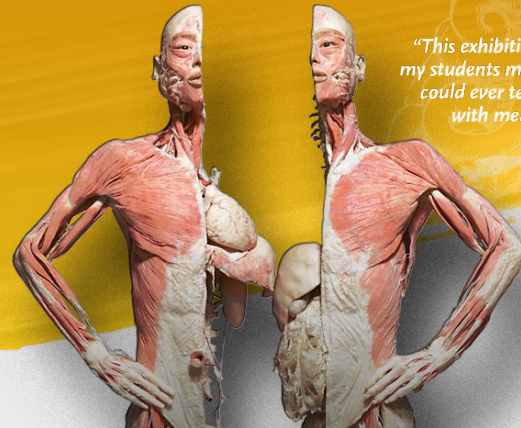
Don't stop until you are proud.

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- Nasser Alohal

Team Leaders:

- Renad Alhomaidi
- Bassam Alasmari



"This exhibition taught my students more than I could ever teach them with mere words."