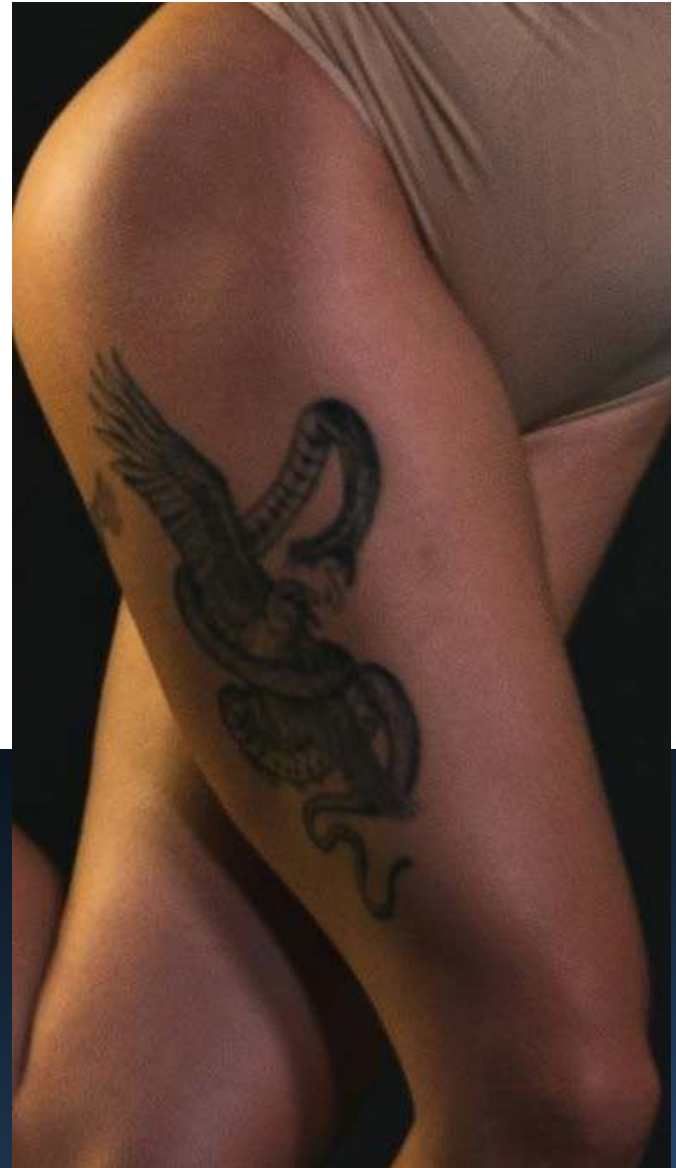


The thigh

Prof. Oluwadiya KS
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The Thigh: Boundaries

- The thigh is the region of the lower limb that is approximately between the hip and knee joints
- Anteriorly, it is separated from the abdominal wall by the inguinal ligament
- Posteriorly, it is separated from the gluteal region by the gluteal fold externally, and by the inferior margins of the gluteus maximus and quadratus femoris internally

Routes to and from the Thigh

- Posteriorly, the thigh communicates with the gluteal region and the major structure passing between the two regions is the sciatic nerve
- Anteriorly, the thigh communicates with the abdominal cavity through the aperture posterior to the inguinal ligament. The major structures passing through this aperture are the iliopsoas and pectineus muscles, the femoral nerve, artery and vein, and lymphatic vessels.
- Medially, structures pass between the thigh and pelvic cavity through the obturator canal. These are the obturator nerve and associated vessels.

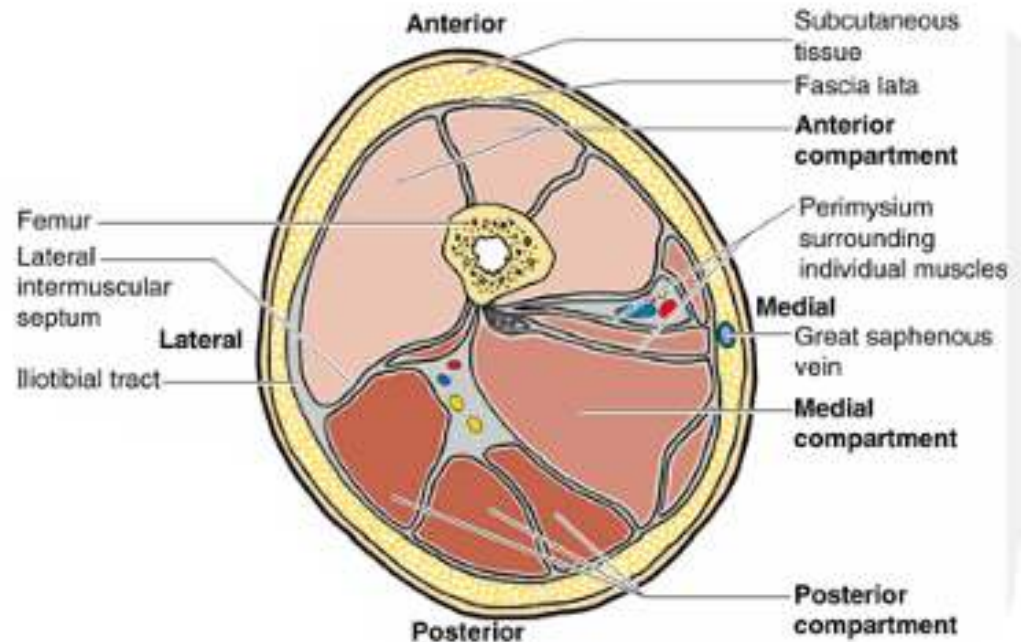
Organization of the thigh

Three intermuscular septae

- i. Lateral (Strong)
- ii. Medial
- iii. Posterior

Divides the thigh into 3 compartments

- i. Anterior
- ii. Medial
- iii. Posterior



Compartments of the thigh

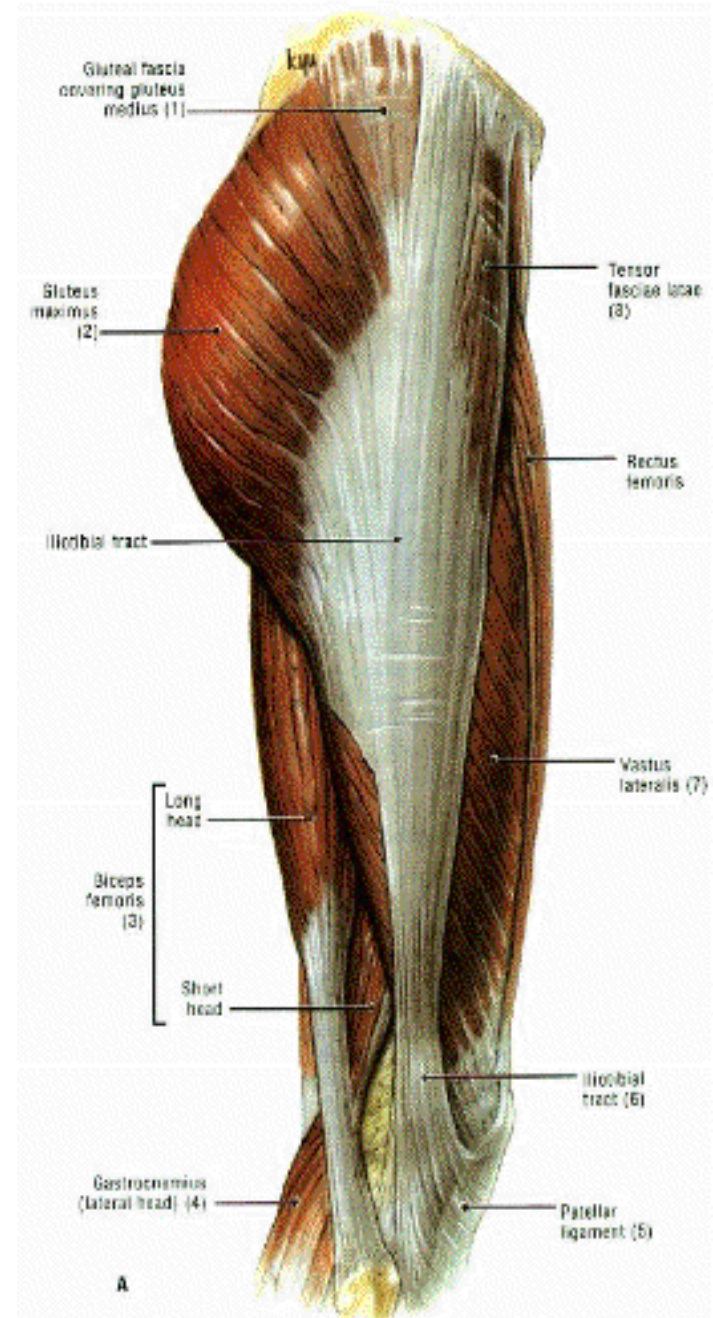
- **Anterior compartment of thigh** contains muscles that mainly extend the leg at the knee joint
- **Posterior compartment of thigh** contains muscles that mainly extend the thigh at the hip joint and flex the leg at the knee joint
- **Medial compartment of thigh** consists of muscles that mainly adduct the thigh at the hip joint.

Nerves of the compartments

- The sciatic nerve innervates muscles in the posterior compartment of thigh
- The femoral nerve innervates muscles in the anterior compartment of thigh
- The obturator nerve innervates most muscles in the medial compartment of thigh.

Fascia of the Thigh

- Superficial fascia : thin and tenuous
- Deep fascia (fascia lata)
 - Strong, dense, investing fascia
 - Holds thigh muscles like a stocking
 - Prevents bulging of muscles, allowing more effective contraction



Muscles of the Anterior Compartment

Psoas Major

- O:** Lumbar transverse processes, intervertebral discs, and adjacent bodies from T12 to L5
- I:** Lesser trochanter of femur
- A:** Flexes the thigh at the hip
- N:** Anterior rami of L1, L2 and L3

Psoas Major



Muscles of the Anterior Compartment

Iliacus

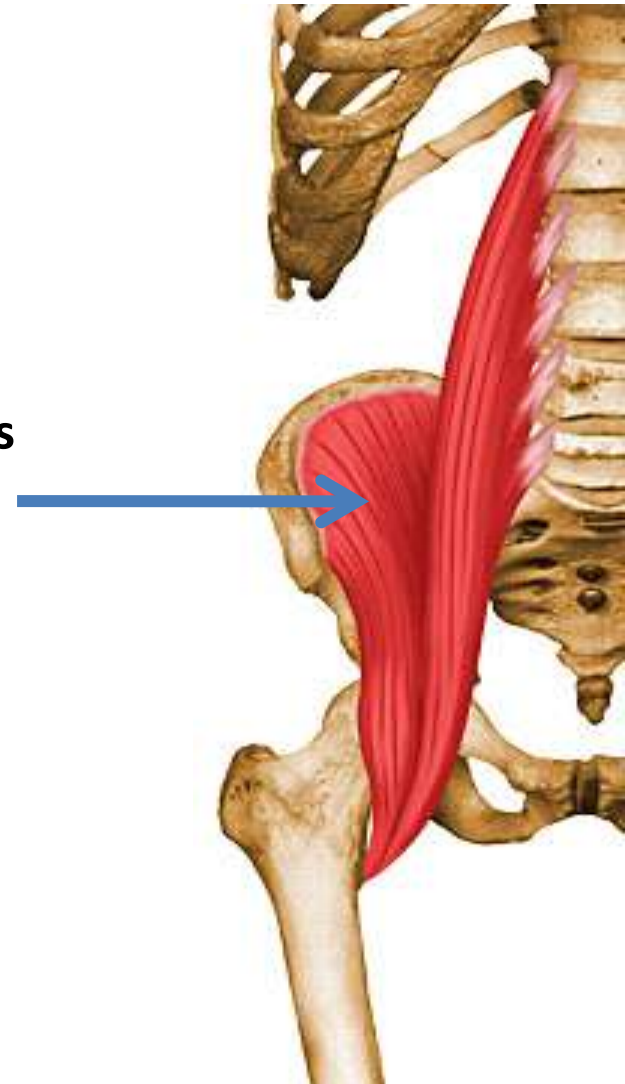
O: Iliac fossa

I: Lesser trochanter of femur

A: Flexes the thigh at the hip

N: Femoral Nerve

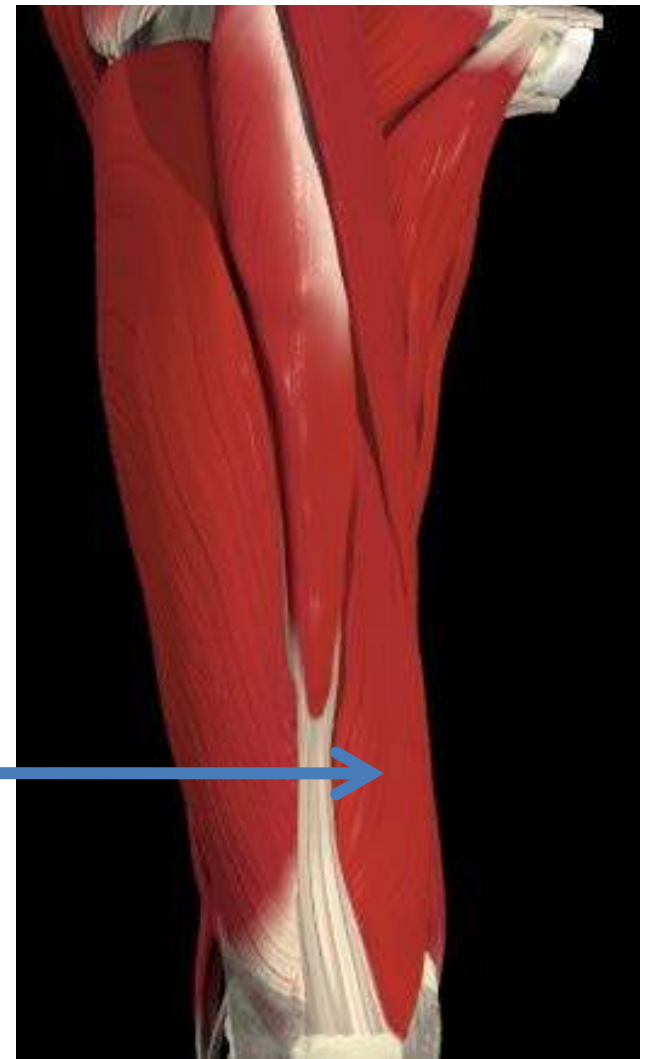
Iliacus



Muscles of the Anterior Compartment

Vastus Medialis

- O:** **Femur:** Intertrochanteric line (medial part), pectineal line, linea aspera & medial supracondylar line
- I:** Quadriceps femoris tendon and medial border of patella
- A:** Extends the leg at the knee joint
- N:** Femoral Nerve



Muscles of the Anterior Compartment

Rectus femoris

O: 2 Heads: **Straight head**

originates from the anterior inferior iliac spine

Reflected head originates from the ilium just superior to the acetabulum

I: Quadriceps femoris tendon

A: Flexes the thigh at the hip joint and extends the leg at the knee joint

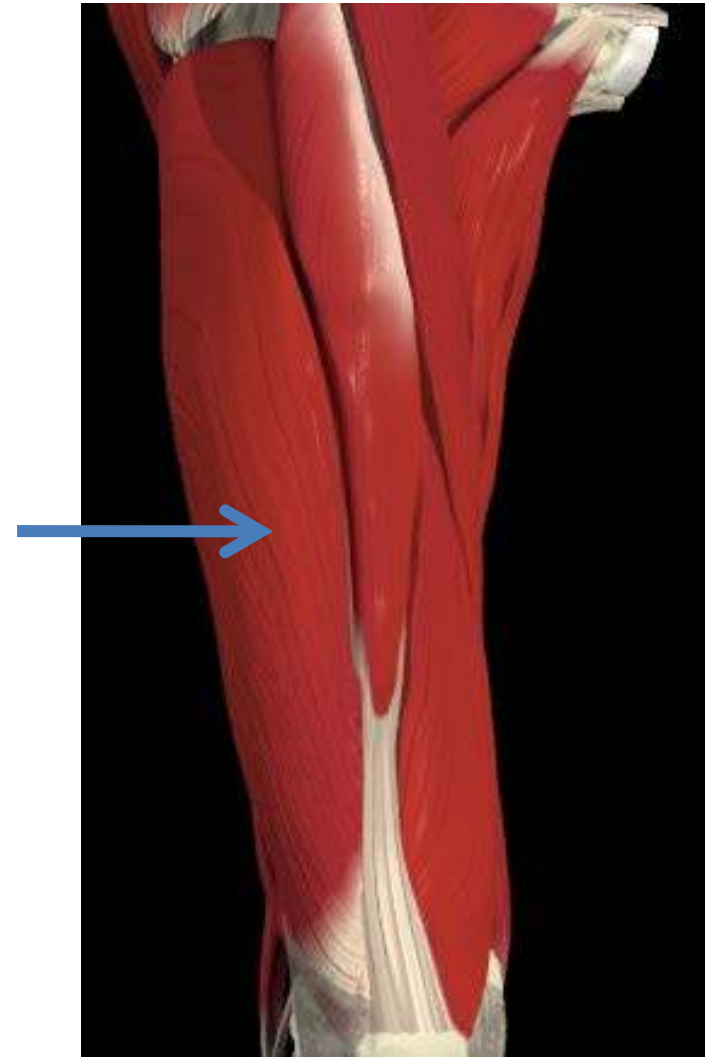
N: Femoral Nerve



Muscles of the Anterior Compartment

Vastus lateralis

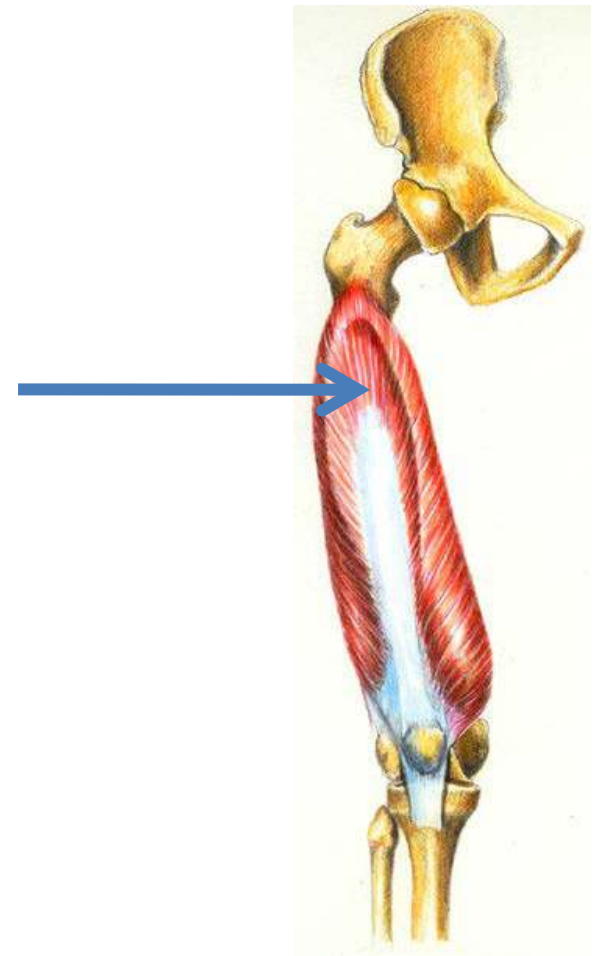
- O:** Femur: lateral part of intertrochanteric line, margin of greater trochanter, lateral margin of gluteal tuberosity, lateral lip of the linea aspera
 - I:** Quadriceps femoris tendon and lateral margin of patella
 - A:** Extends the leg at the knee joint
 - N:** Femoral Nerve
- Largest of the vasti muscles



Muscles of the Anterior Compartment

Vastus intermedius

- O:** Upper two-thirds of anterior and lateral surfaces of the femur
- I:** Quadriceps femoris tendon and lateral margin of patella
- A:** Extends the leg at the knee joint
- N:** Femoral Nerve



Muscles of the Anterior Compartment

Sartorius

O: Anterior superior iliac spine

I: Anterior surface of tibia just inferomedial to tibial tuberosity (Pes anserinus)

A: Flexes the thigh at the hip joint and flexes the leg at the knee joint

N: Femoral Nerve

In the upper one-third of the thigh, the medial margin of the sartorius forms the lateral margin of the femoral triangle.

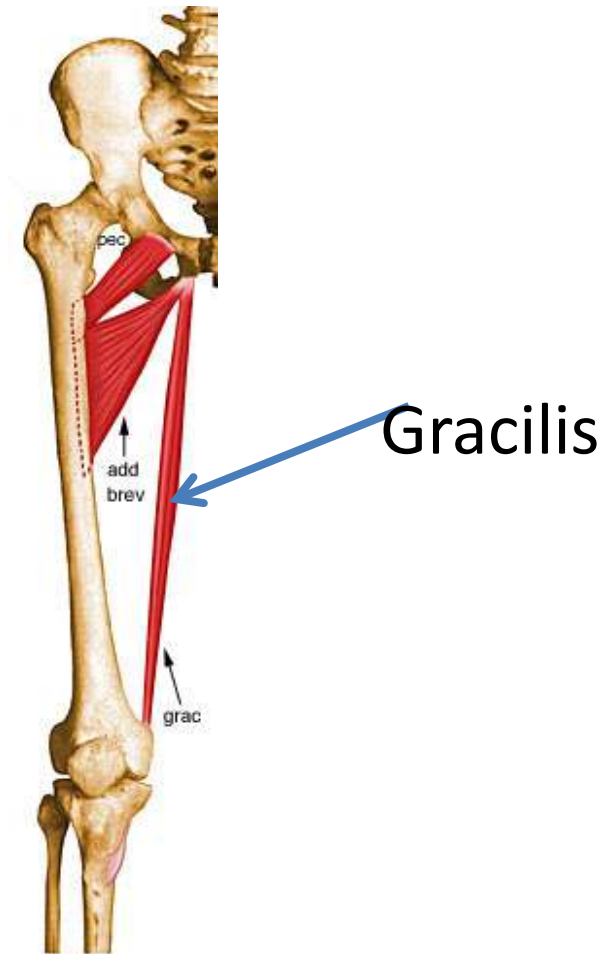
In the middle one-third of the thigh, sartorius forms the anterior wall of the adductor canal.



Muscles of the Medial Compartment

Gracilis

- O:** Pubic Symphysis and inferior pubic ramus
- I:** Medial surface of proximal shaft of the tibia near sartorius insertion (Pes anserinus)
- A:** Adducts thigh at hip joint and flexes leg at knee joint
- N:** Obturator Nerve



Muscles of the Medial Compartment

Pectineus

O: Pectineal line and adjacent bone of pelvis

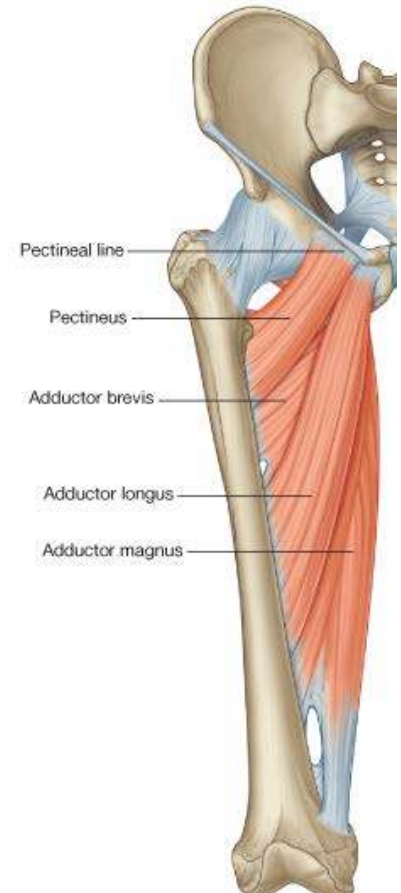
I: Oblique line extending from base of lesser trochanter to linea aspera on posterior surface of proximal femur

A: Adducts and flexes thigh at hip joint

N: Femoral Nerve

The only muscle in the medial compartment supplied by the femoral nerve

It forms a part of the floor of the femoral triangle



Muscles of the Medial Compartment

Adductor longus

- O:** External surface of body of pubis
- I:** Linea aspera on middle one-third of shaft of femur
- A:** Adducts and medially rotates thigh at hip joint
- N:** Obturator Nerve
 - It is the most superficial of the adductors
 - It forms part of the floor as well as the medial wall of the femoral triangle



Muscles of the Medial Compartment

Adductor Brevis



- O** - Inferior Pubic Ramus
- I** - Pectineal Line and Linea Aspera above the insertion of Adductor Longus
- A** - Adducts, flexes, and medially rotates femur
- N:** obturator nerve

Adductor
Brevis

Muscles of the Medial Compartment

Adductor magnus



- O** - Ischiopubic ramus and ischial tuberosity
- I** - linea aspera of the femur, the ischiocondylar part inserts on the adductor tubercle of the femur
- A** - adducts, flexes, and medially rotates the femur
- N** - Adductor part by the obturator nerve & Hamstring part by the tibial nerve

Muscles of the Medial Compartment

Obturator Externus

O: External surface of obturator membrane and adjacent bone

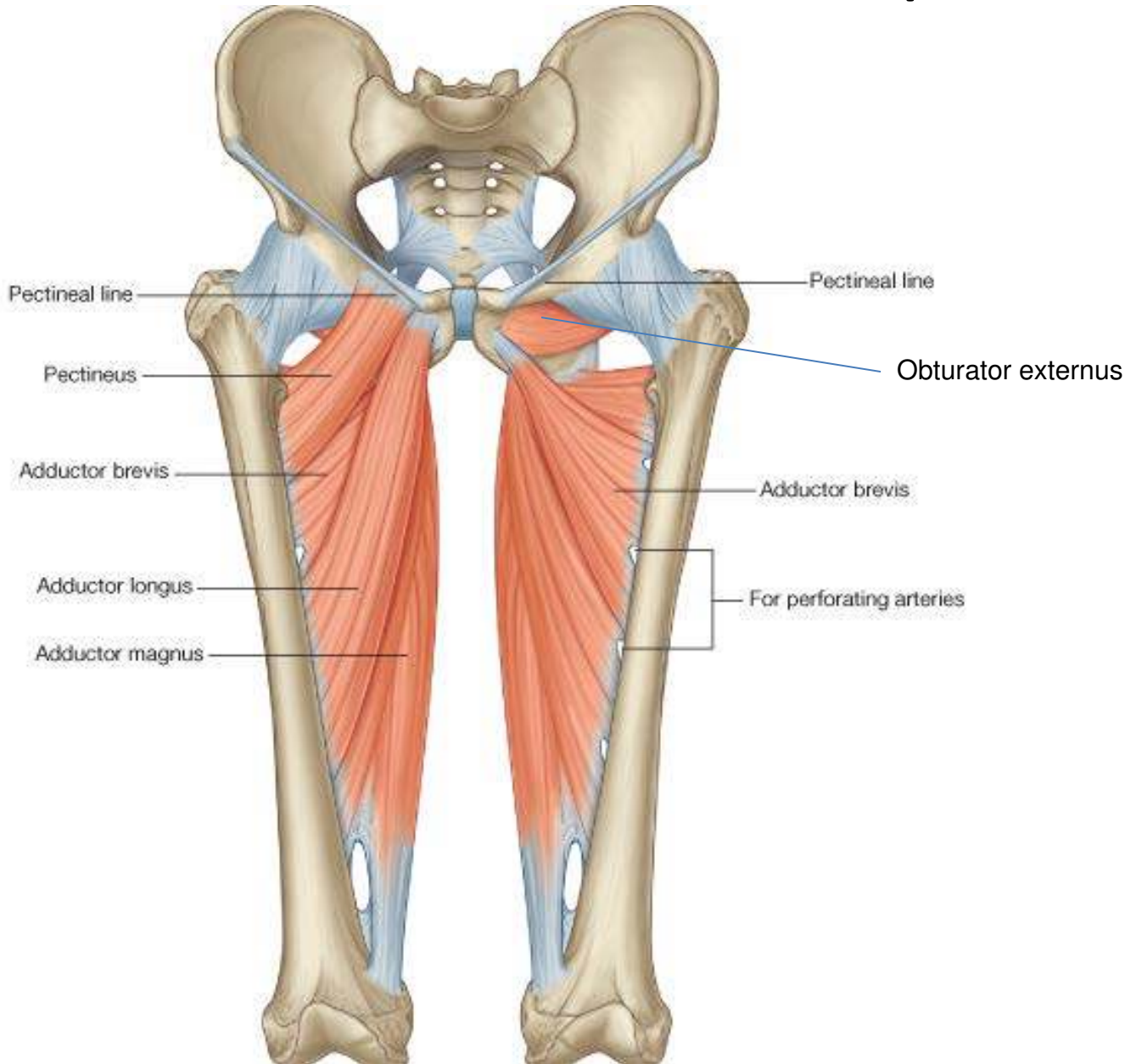
I: Trochanteric fossa

A: Externally rotates thigh at hip joint

N: Obturator Nerve



Overview of the adductor compartment



Muscles of the Posterior Compartment

Semimembranosus

- O:** Superolateral impression on the ischial tuberosity
- I:** Groove and adjacent bone on medial and posterior surface of medial tibial condyle
- A:** Flexes leg at knee joint; extends and laterally rotates thigh at hip joint and laterally rotates leg at knee joint
- N:** Sciatic Nerve



Muscles of the Posterior Compartment

Semitendinosus

- O:** Inferomedial part of the upper area of the ischial tuberosity
- I:** Medial surface of proximal shaft of the tibia close to the insertion of sartorius and gracilis (Pes anserinus)
- A:** Flexes leg at knee joint and extends thigh at hip joint; medially rotates the thigh at the hip joint and leg at the knee joint
- N:** Sciatic Nerve



Muscles of the Posterior Compartment

Biceps Femoris

O: Long head-inferomedial part of the upper area of the ischial tuberosity; short head-lateral lip of linea aspera

I: Head of fibula

A: Flexes leg at knee joint; extends and laterally rotates thigh at hip joint and laterally rotates leg at knee joint

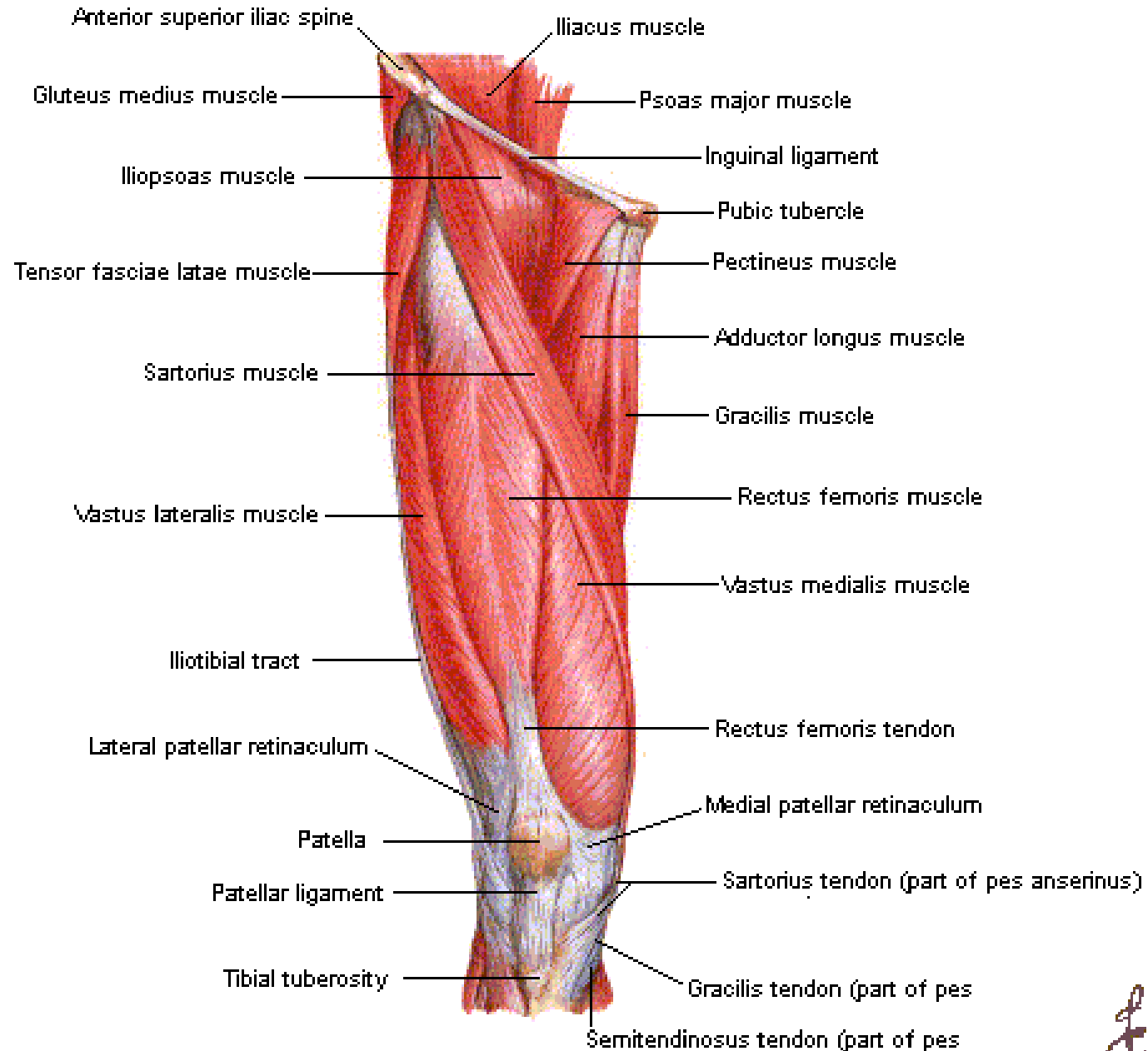
N: Sciatic Nerve



Muscular Anatomy

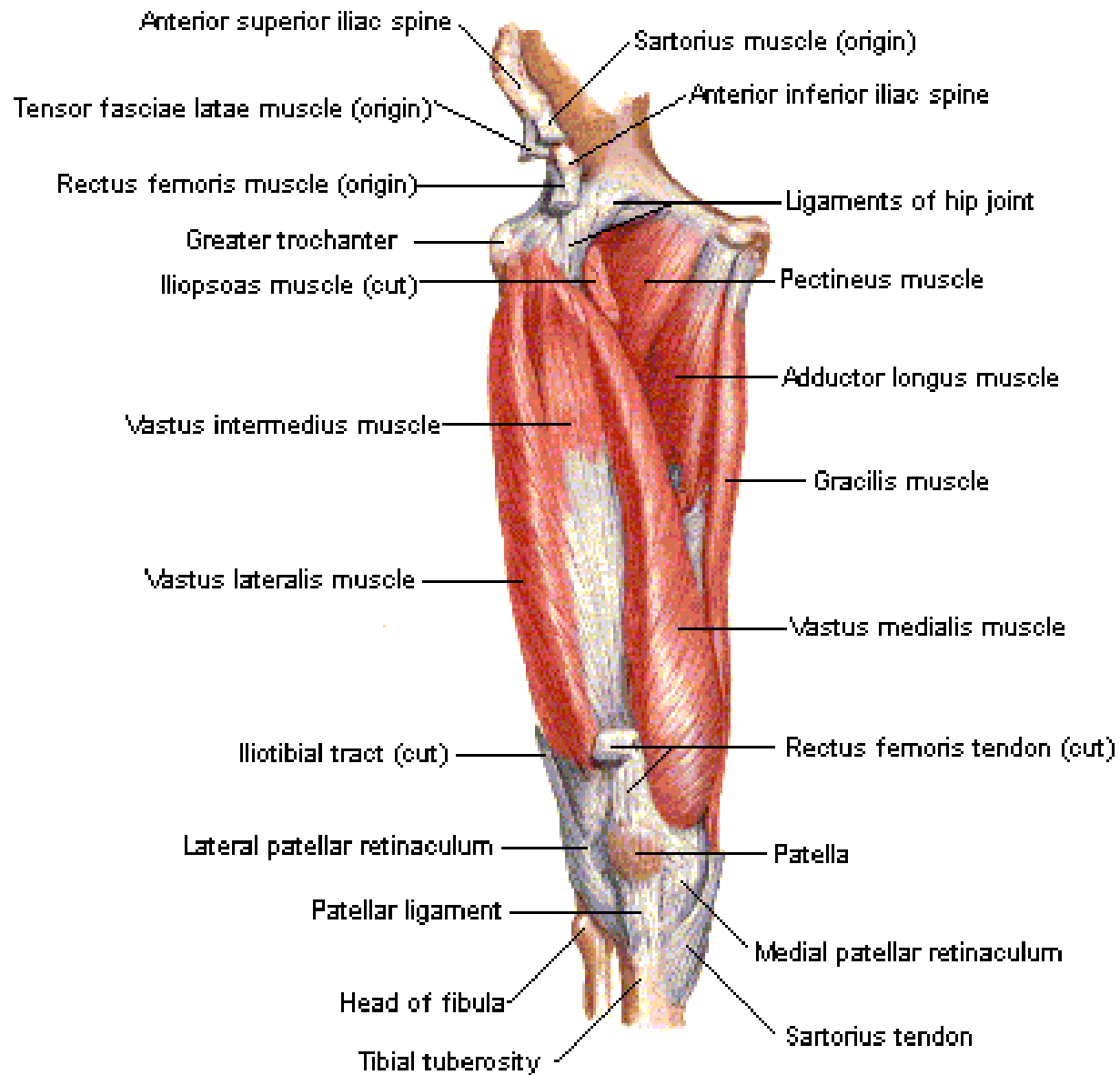
Muscles of Thigh

Anterior View - Superficial Dissection



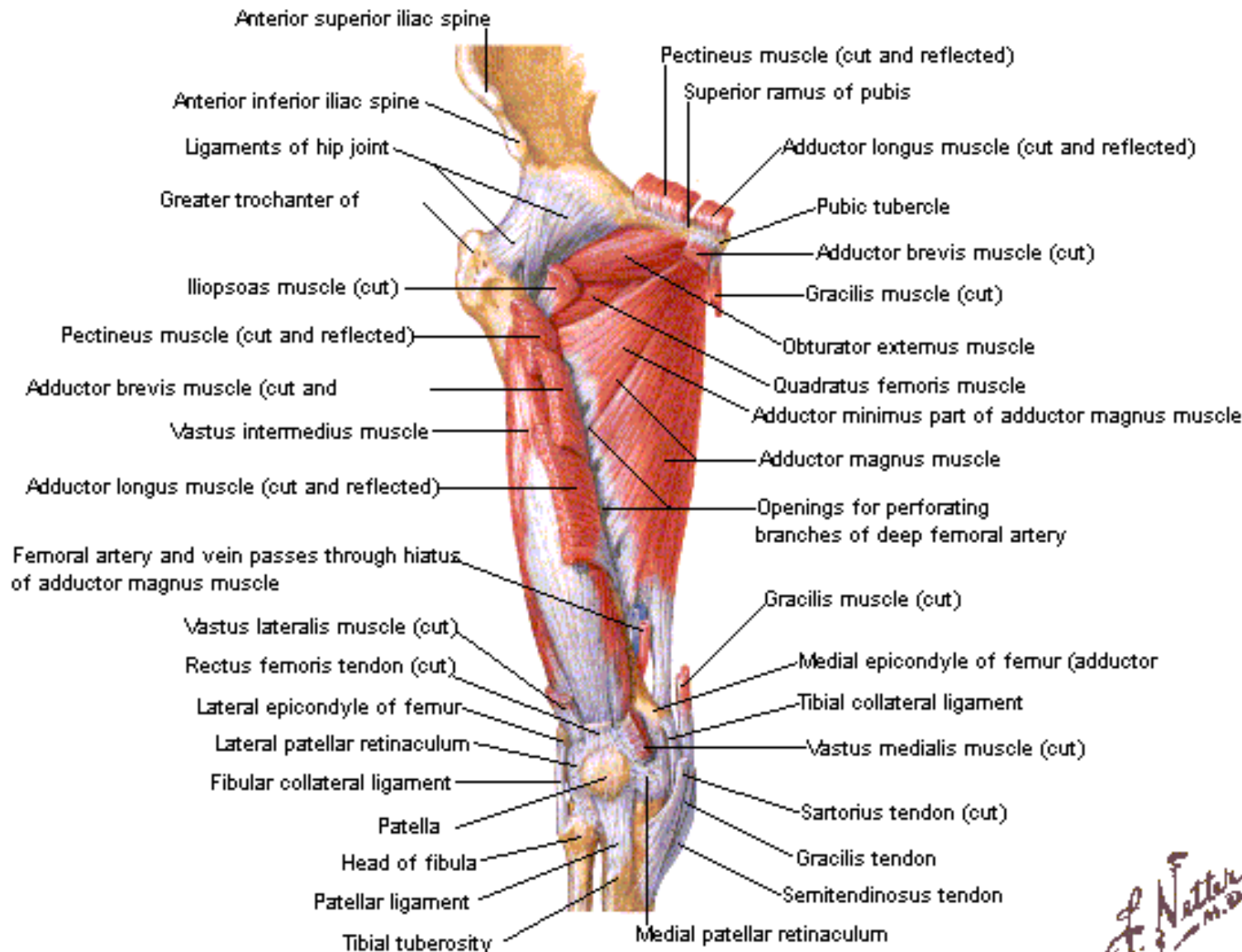
Muscular Anatomy

Muscles of Thigh Anterior View - Deeper Dissection



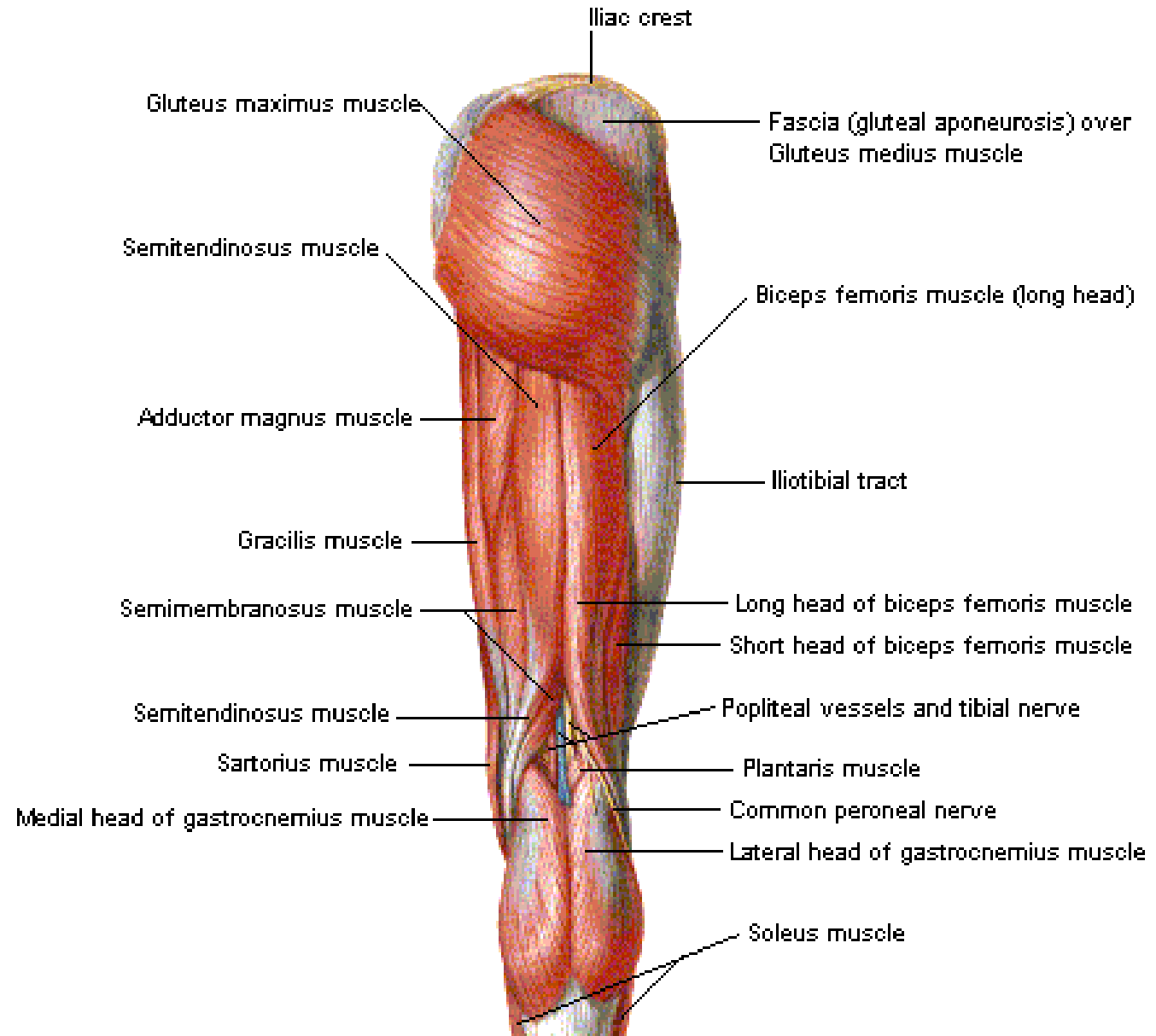
Muscles of Thigh

Anterior View - Deepest Dissection



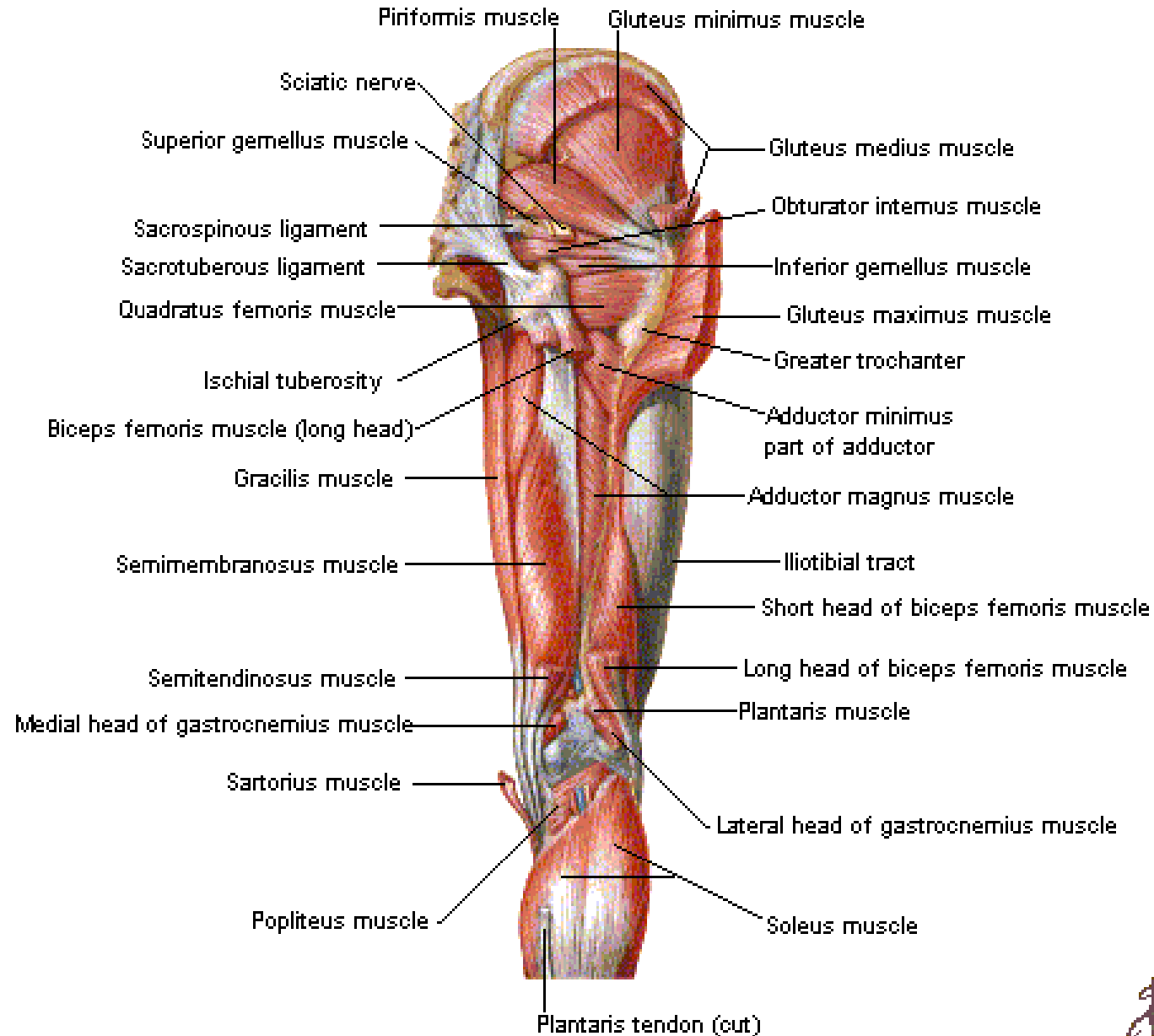
Muscular Anatomy

Muscles of Hip and Thigh Posterior View - Superficial Dissection



Muscular Anatomy

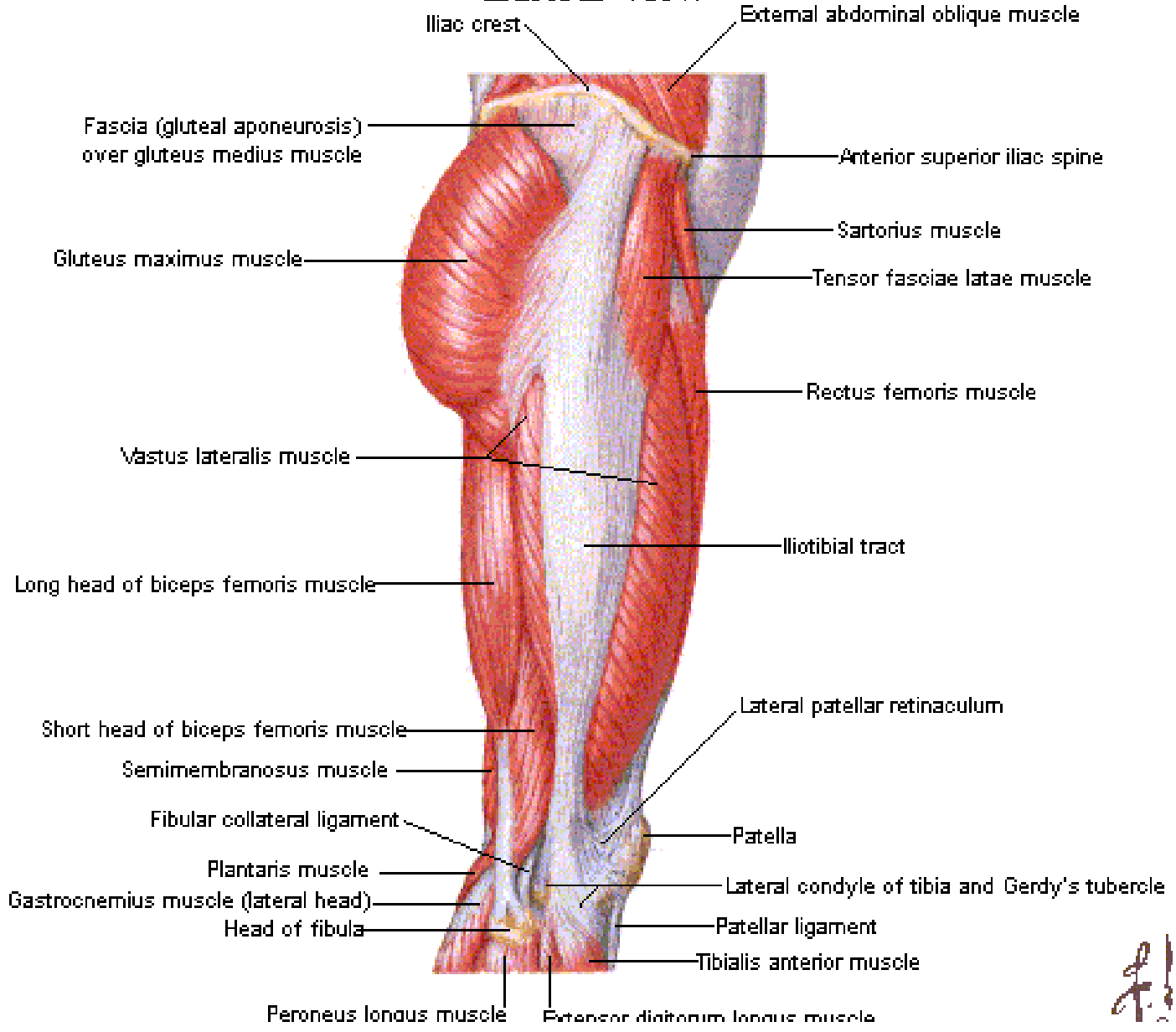
Muscles of Hip and Thigh Posterior View - Deeper Dissection



Muscular anatomy

Muscles of Hip and Thigh

Lateral View

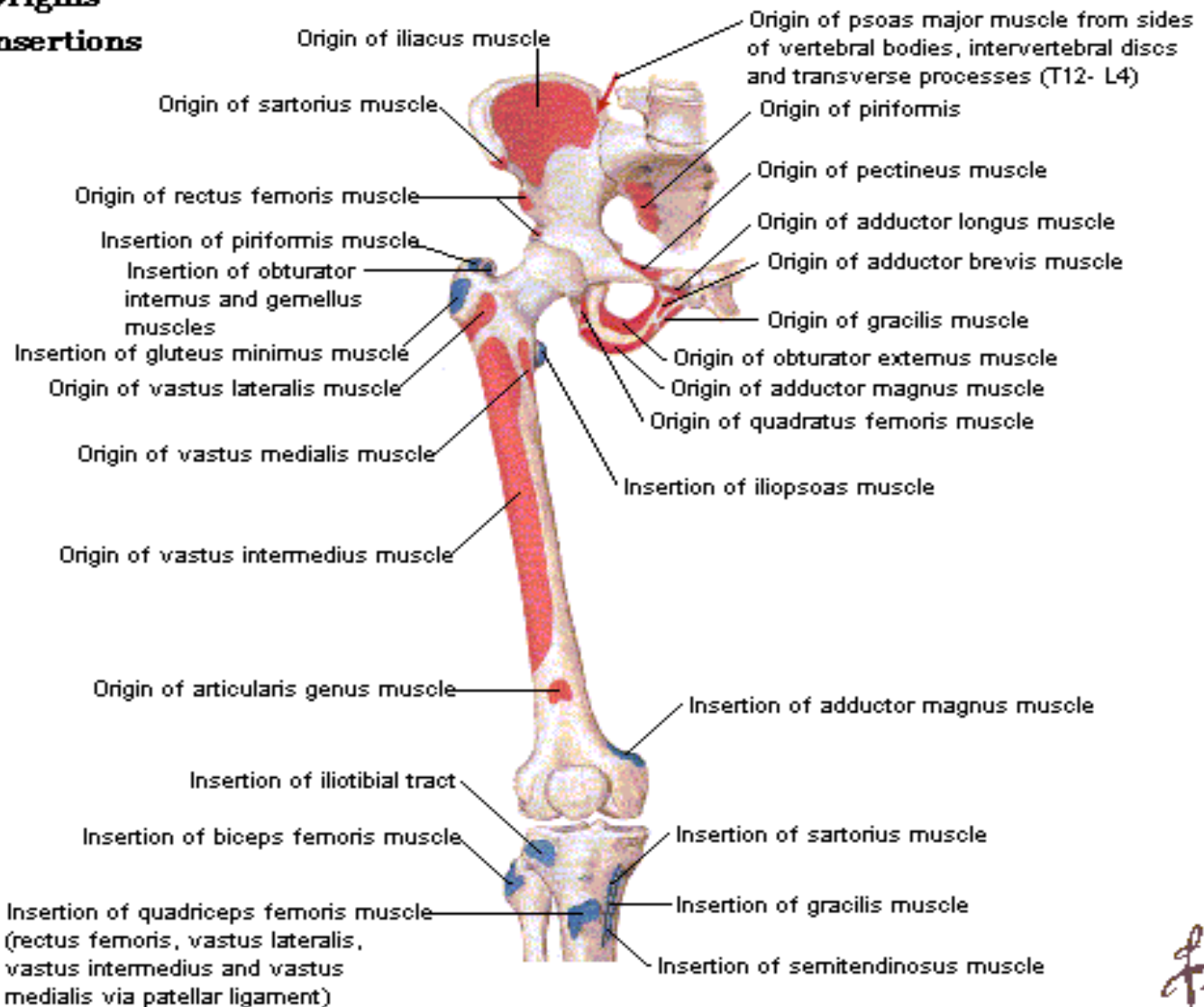


Origins/Insertions

Bony Attachments of Muscles of Hip and Thigh

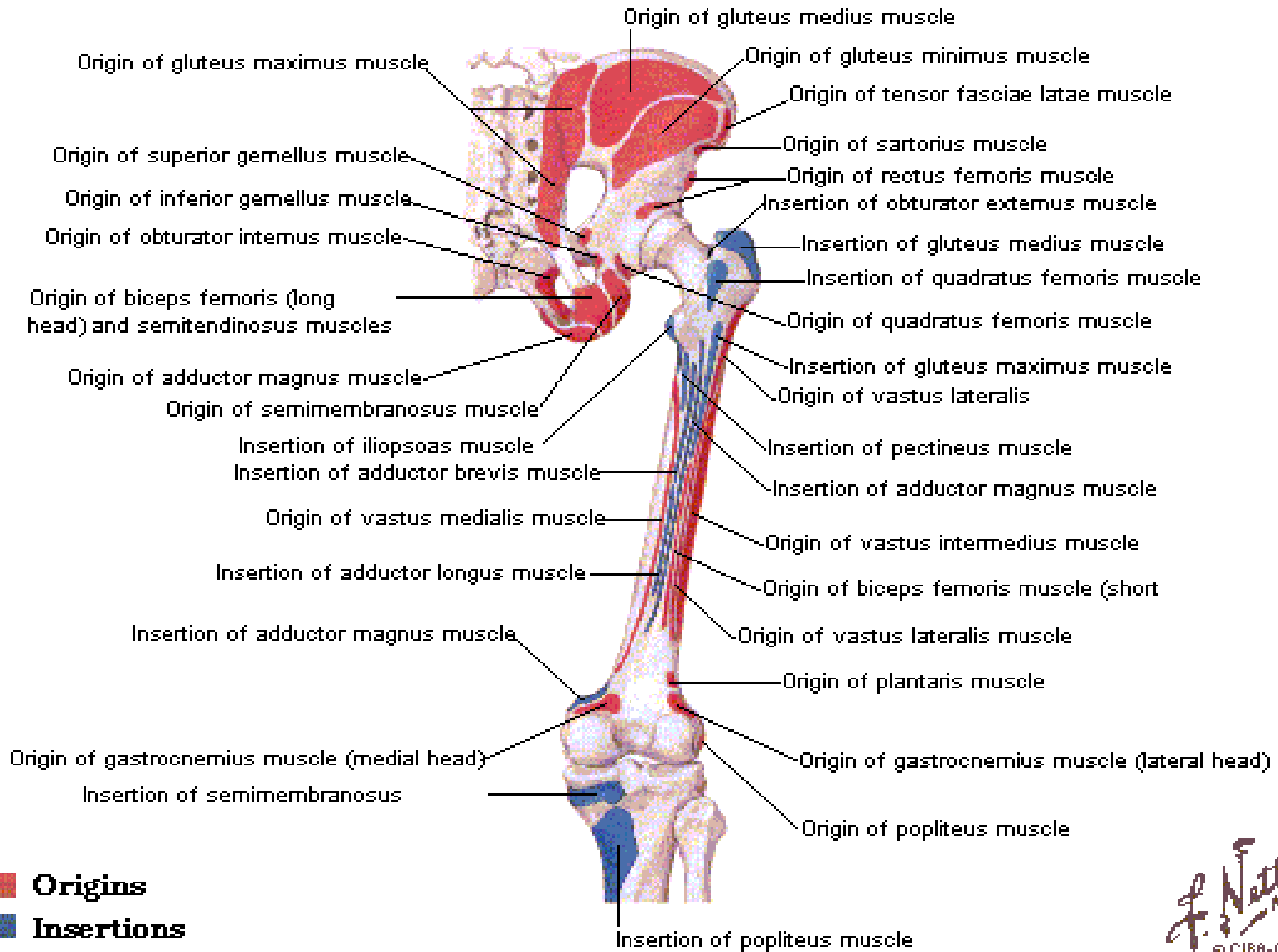
Origins
Insertions

Anterior View



Origins/Insertions

Bony Attachments of Muscles of Hip and Thigh Posterior View



 **Origins**
 **Insertions**

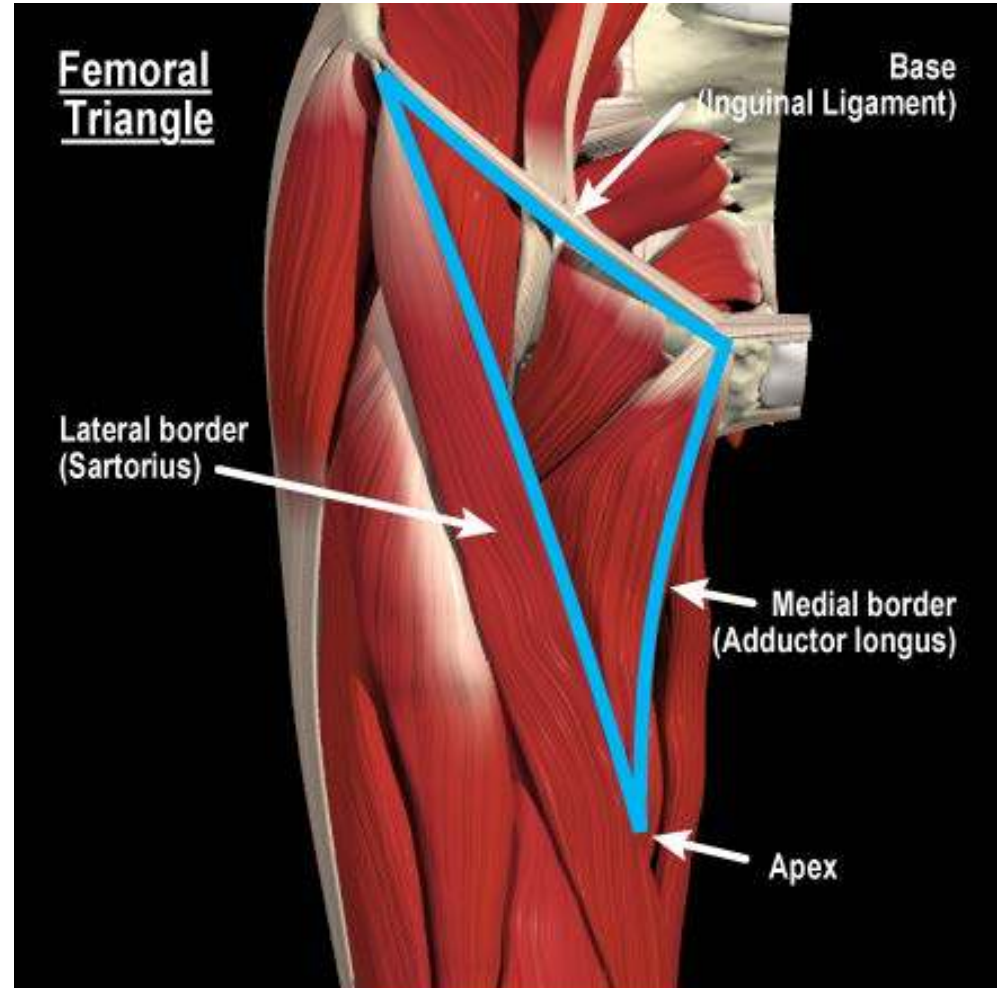
Femoral Triangle: Borders

Lateral: Medial border of sartorius muscle.

Medial: Medial border of adductor longus muscle.

Superior: Inguinal ligament: From ASIS to pubic tubercle.

Continuous distally at its apex with the adductor canal

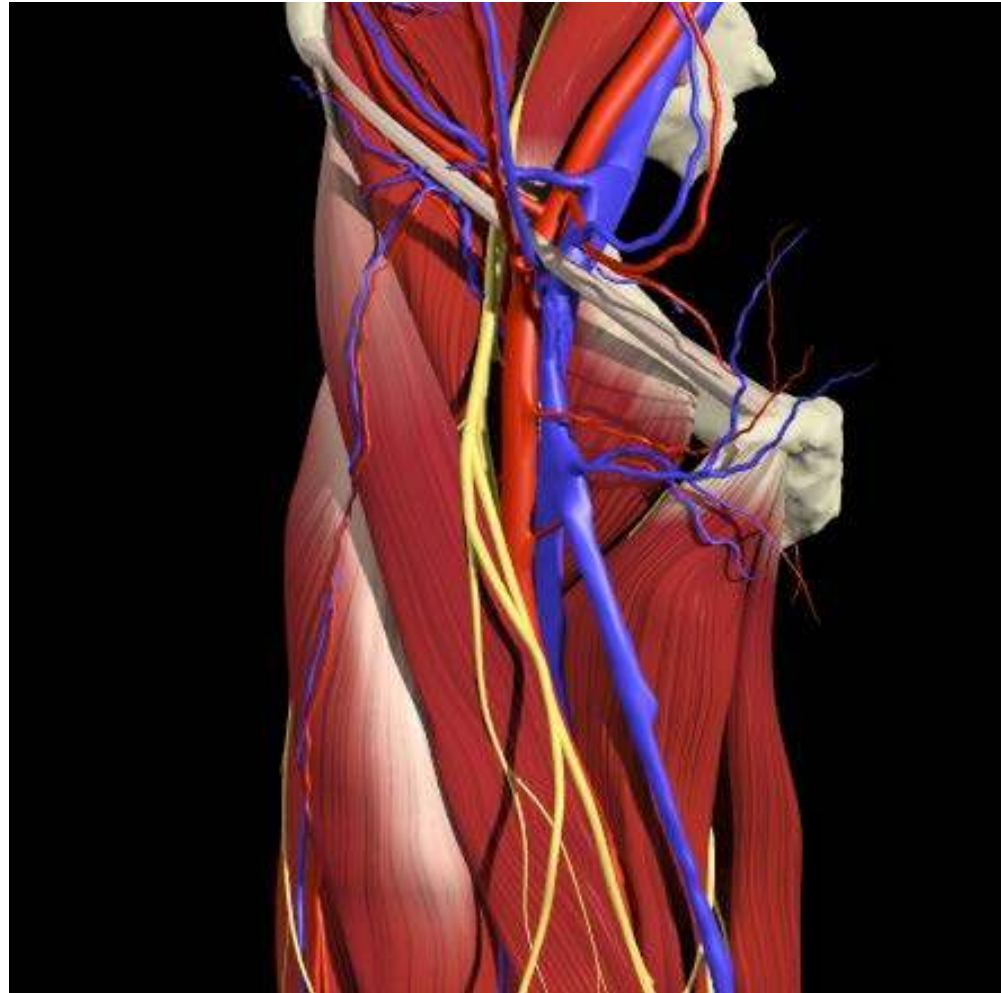


Femoral Triangle: Contents

Arrangement from Medial to Lateral:

- i. Femoral Vein (in femoral sheath)
- ii. Femoral Artery (in femoral sheath)
- iii. Femoral Nerve (not in femoral sheath)
- iv. Lymphatics (in femoral sheath)

Pneumonics:VAN

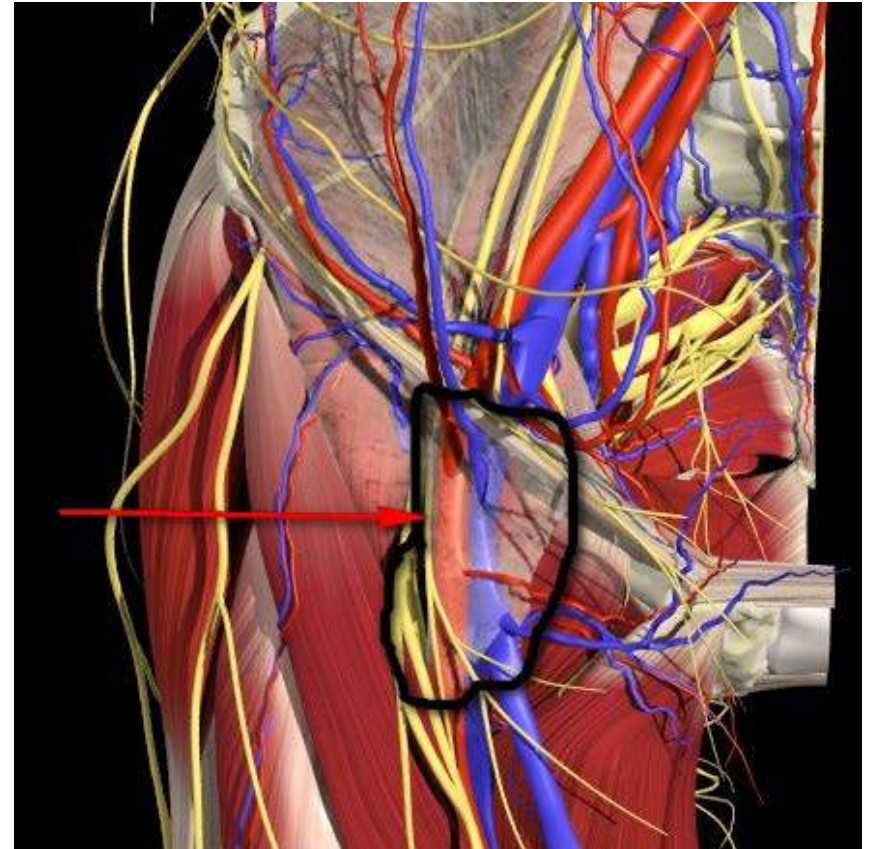


Femoral Triangle: Femoral sheath

Found in the femoral triangle

Has three compartments:

- i. Lateral compartment contains the Femoral artery
- ii. Middle compartment contains the femoral vein
- iii. Medial Compartments is the Femoral Canal which contains lymphatics



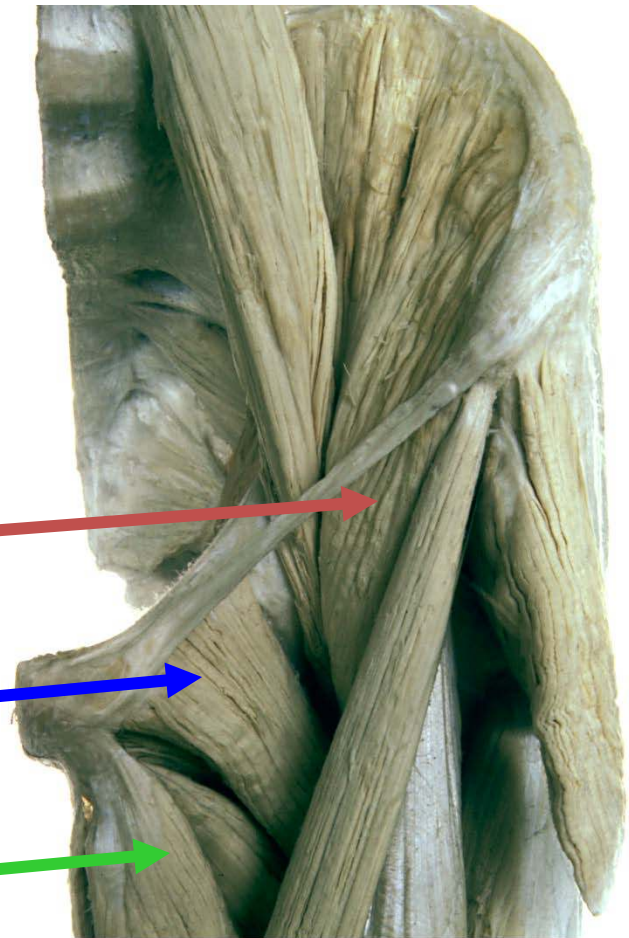
Femoral Triangle: Floor

- i. Iliopsoas muscle.
- ii. Pectineus muscle.
- iii. Adductor longus muscle.

Iliopsoas

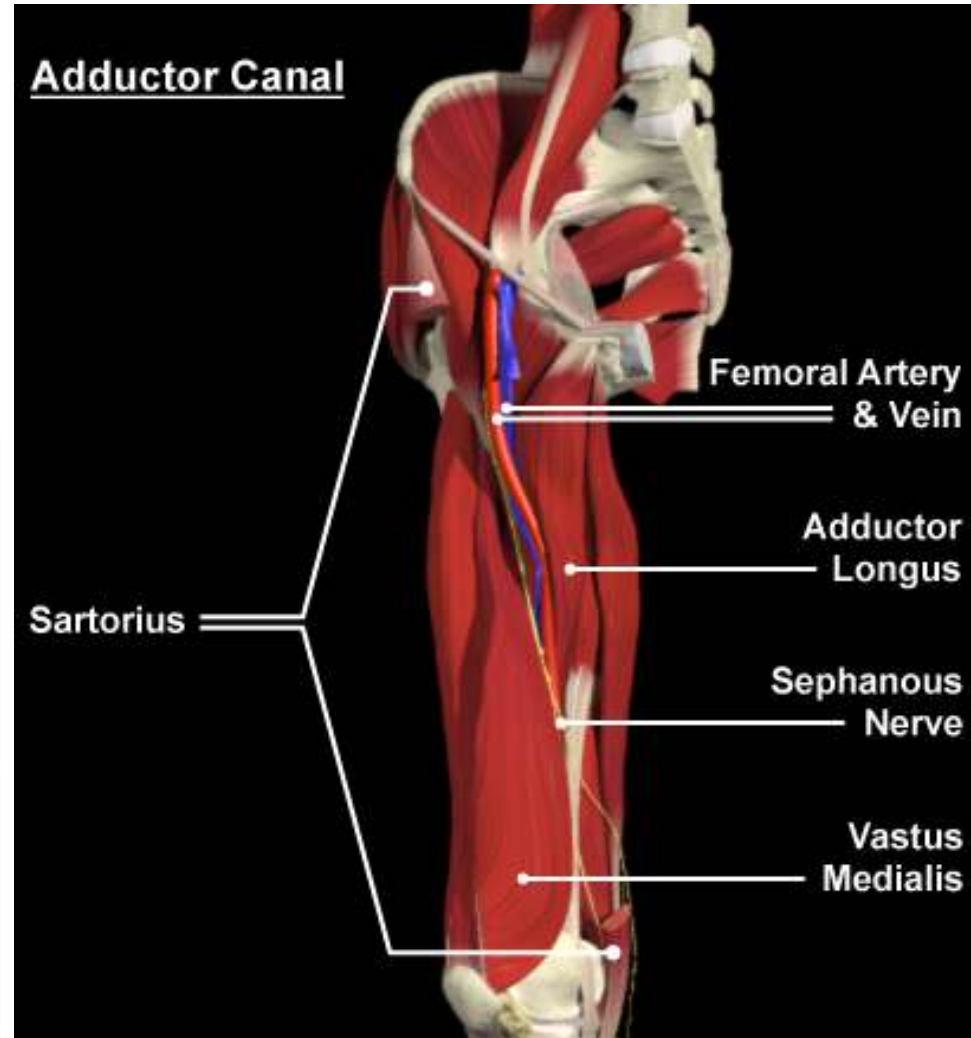
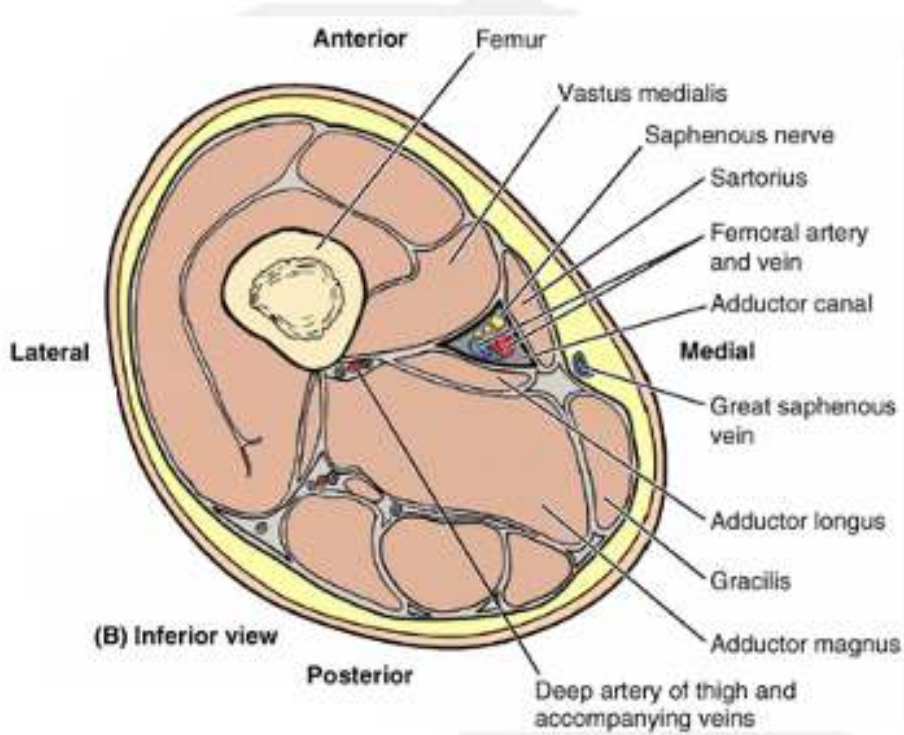
Pectinius

Adductor Longus



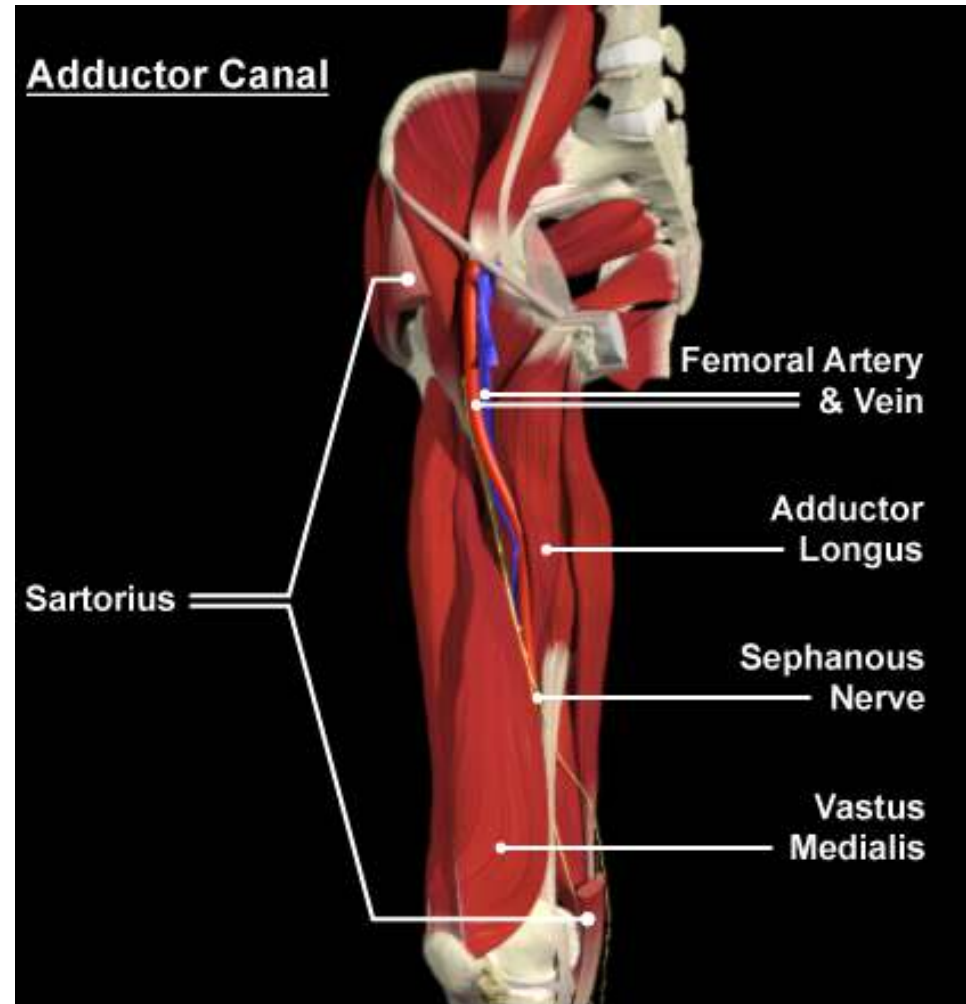
Borders: Adductor Canal:

- i. Lateral: Vastus medialis muscle.
- ii. Posterior: Adductor longus and magnus.
- iii. Anteromedial or roof: Sartorius muscle.



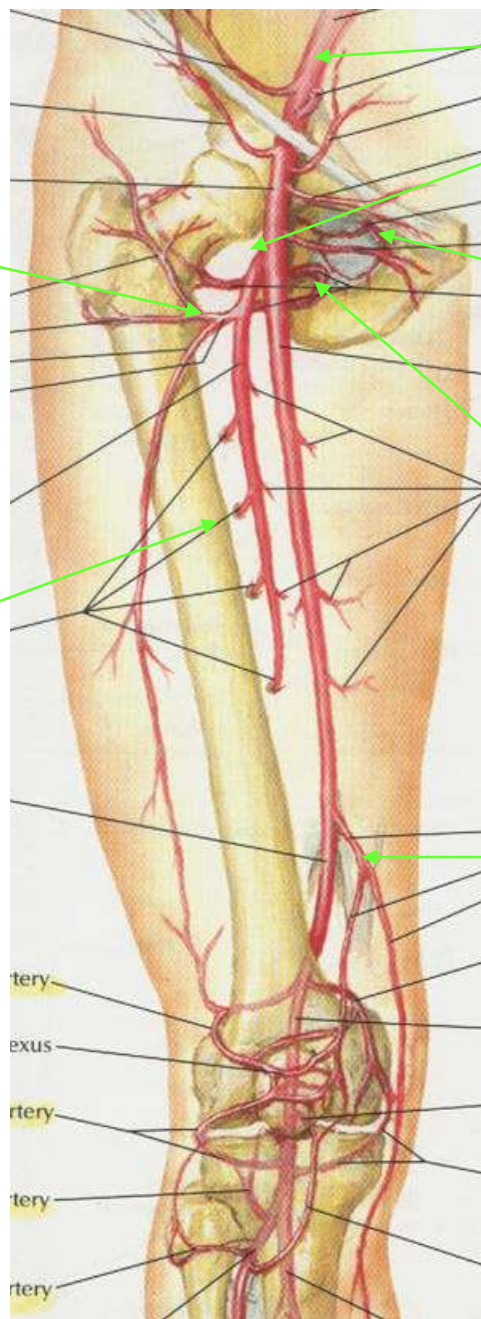
Adductor Canal: Contents

- i. Saphenous nerve:
Termination of the femoral nerve.
- ii. Nerve to vastus medialis.
- iii. Terminal part of obturator nerve.
- iv. Terminal parts of femoral artery and vein.
- v. Deep lymph vessels.



Arteries of the Thigh

- Femoral artery
 - Deep (profunda) femoral artery
 - medial and lateral circumflex femoral arteries
 - terminates as 4th perforating branch
 - Descending genicular artery
 - articular branch
 - Becomes the popliteal artery after passing through the adductor hiatus
- Obturator artery
 - branch of the internal iliac
 - Supplies the medial compartment
 - Also gives off the artery of the ligament of the head of the femur



External iliac

Deep femoral

Obturator

Med circumflex femoral

Descending genicular

Lat circumflex femoral

(ascending, transverse, descending)

Perforators

tery

exus

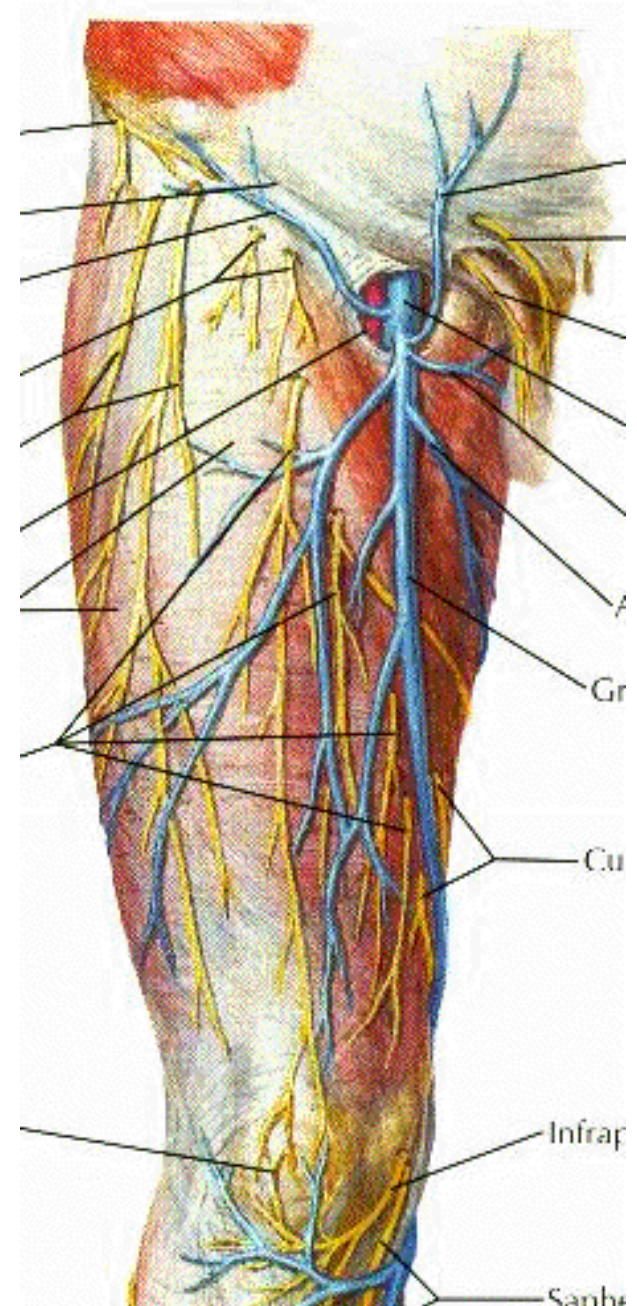
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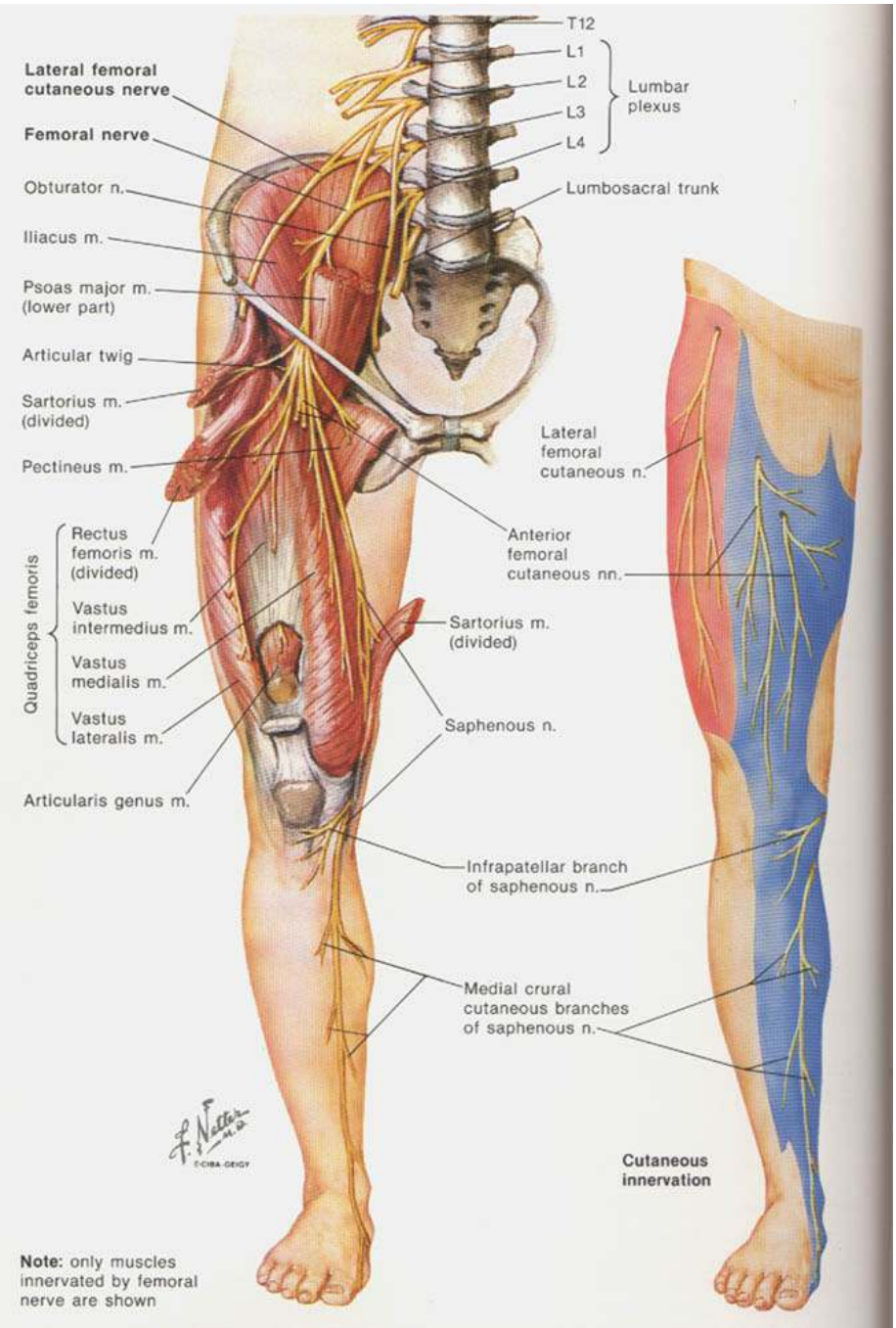
Veins

- Femoral and Profunda veins run with their corresponding arteries
- Great Saphenous
 - Longest vein in body
 - Saphenous opening in fascia lata, joins femoral vein
- Small Saphenous
 - Joins popliteal



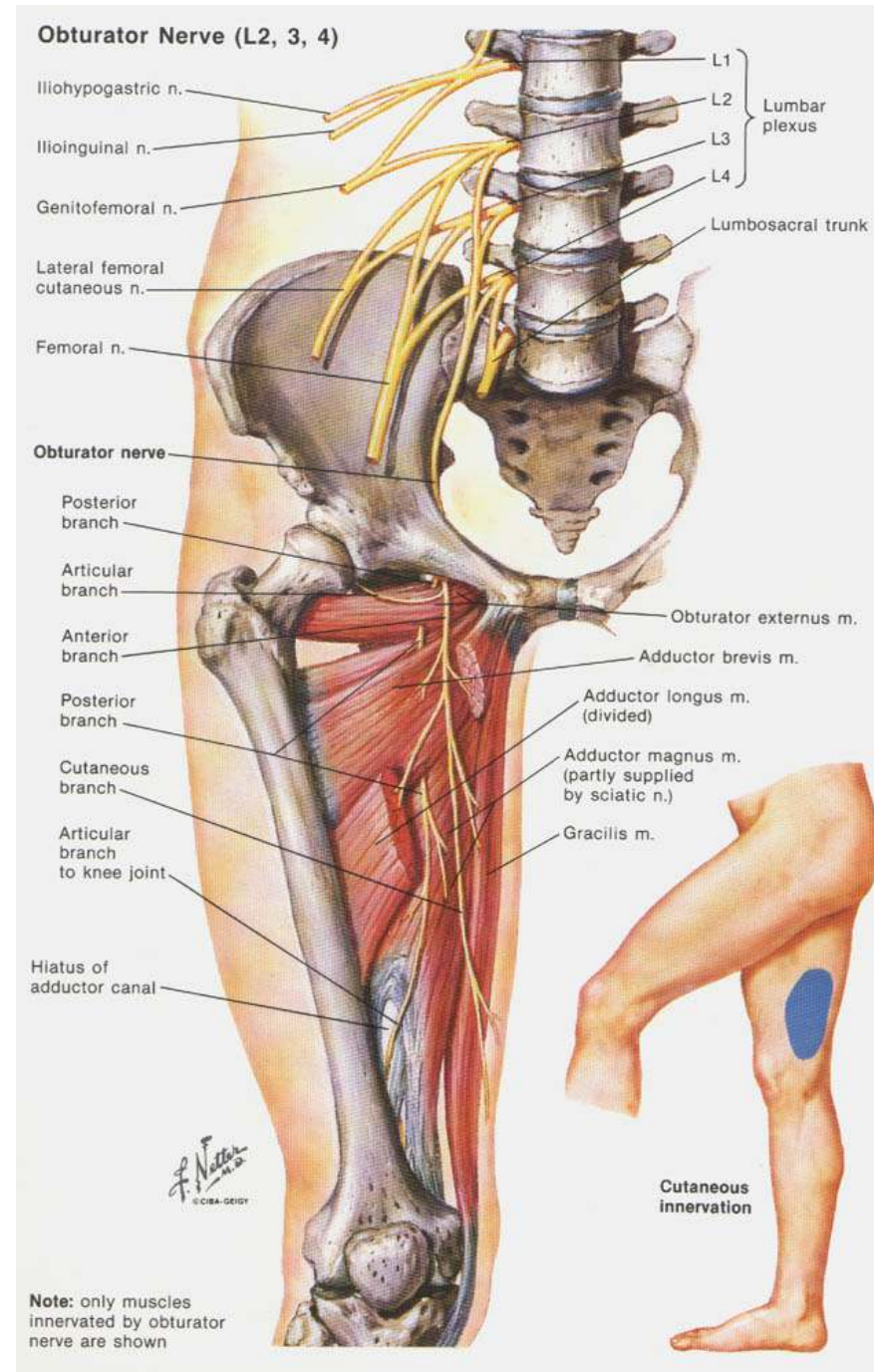
Femoral Nerve

- L2-L4 from lumbar plexus
- Enters thigh on iliopsoas posterior to inguinal ligament
- lateral to vessels in femoral triangle
- sensation to anterior/medial thigh and calf through:
 - anterior femoral cutaneous
 - saphenous nerve
- Supplies muscles of anterior compartment
- terminates in muscular branches and the saphenous nerve



Obturator Nerve

- L2-4 from lumbar plexus
- Enters the medial compartment by passing through the obturator foramen
- Has two major branches:
 1. anterior branch
 - articular branch to hip
 - cutaneous branches
 - Muscular branches
 2. posterior branch
 - articular branch to knee
 - Muscular branches

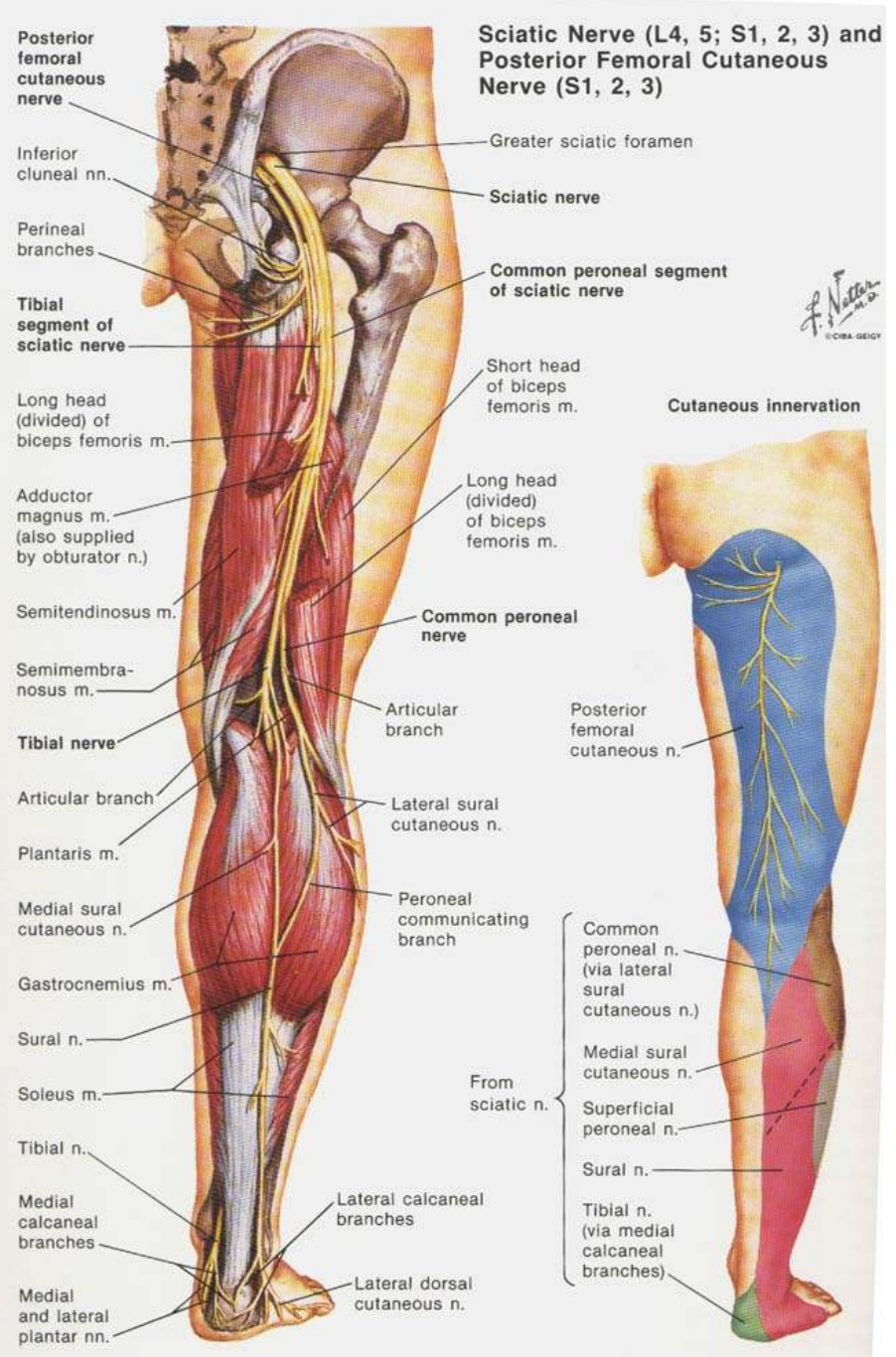


Sciatic Nerve

- L4, L5, S1-3
- Enters gluteal region via greater sciatic foramen, under piriformis
- accompanied by Posterior Femoral Cutaneous Nerve of the thigh
- terminal branches in the apex of popliteal fossa
 - Common fibular (peroneal) which is lateral
 - Tibial which is medial

Supplies

- Sensation to posterior thigh and calf, lateral calf
- Muscles - hamstring and all muscles below the knee
- Articular branches to hip and knee



Any Question?

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