

**The University Of Jordan
Faculty Of Medicine**



THE THIGH

Dr.Ahmed Salman

Associate Professor of Anatomy

Thigh

The thigh has

- 1- Skin
- 2- Superficial fascia
- 3- Deep fascia
- 4- Muscles
- 5- Nerves
- 6- Vessels

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Superficial fascia

It contains cutaneous nerves and lymph nodes

I- Cutaneous nerve supply (SENSORY)

Front

- 1- Ilioinguinal N.(upper anteromedial thigh and partially the external genitalia)
- 2-The femoral branch of genitofemoral N
3. The lateral cutaneous nerve of the thigh (lateral 1/3)
4. Intermediate cutaneous N. of the thigh (Intermediate 1/3)
5. The medial cutaneous N. (Medial 1/3)
(4,5 are branches of femoral nerve)

Posterior

Posterior cutaneous nerve of the thigh

A

Subcostal, T12

M

Femoral branch of genitofemoral L1, 2

Ilio-inguinal, L1

Lateral cutaneous of thigh, L2, 3

Obturator, L2, 3, 4

Medial and intermediate cutaneous of thigh, L2, 3

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B

Iliohypogastric, L1

Subcostal, T12

Dorsal rami, L1, 2, 3

Dorsal rami, S1, 2, 3

Lateral cutaneous of thigh, L2, 3

Obturator, L2, 3, 4

Medial cutaneous of thigh, L2, 3

Posterior cutaneous of thigh, S1, 2, 3

II-Superficial Inguinal Lymph Nodes

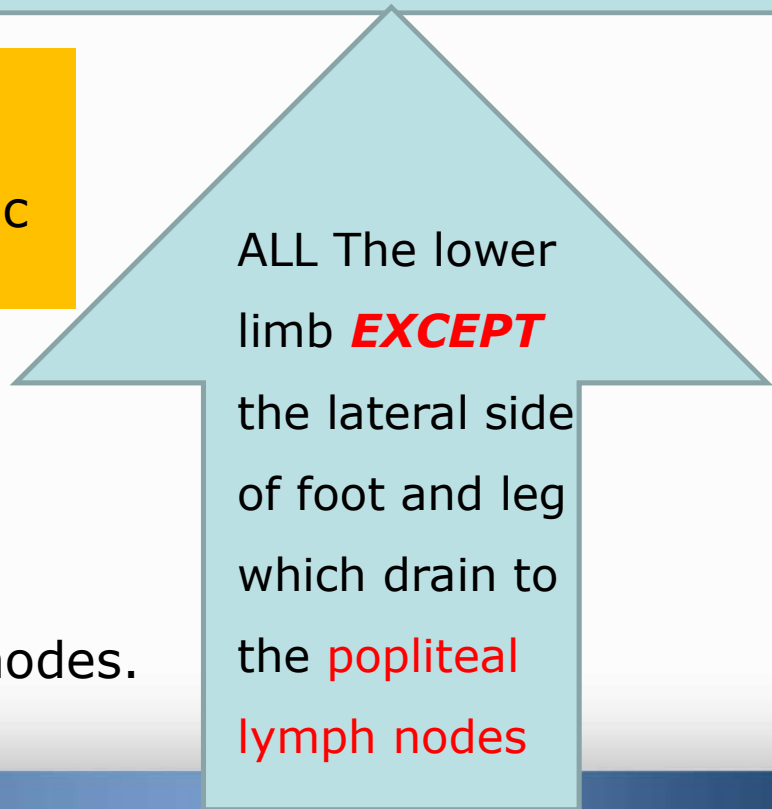
It is T shaped ,it has medial and lateral horizontal group below the inguinal ligament and a vertical group along the upper part of the great saphenous vein.

Afferent :



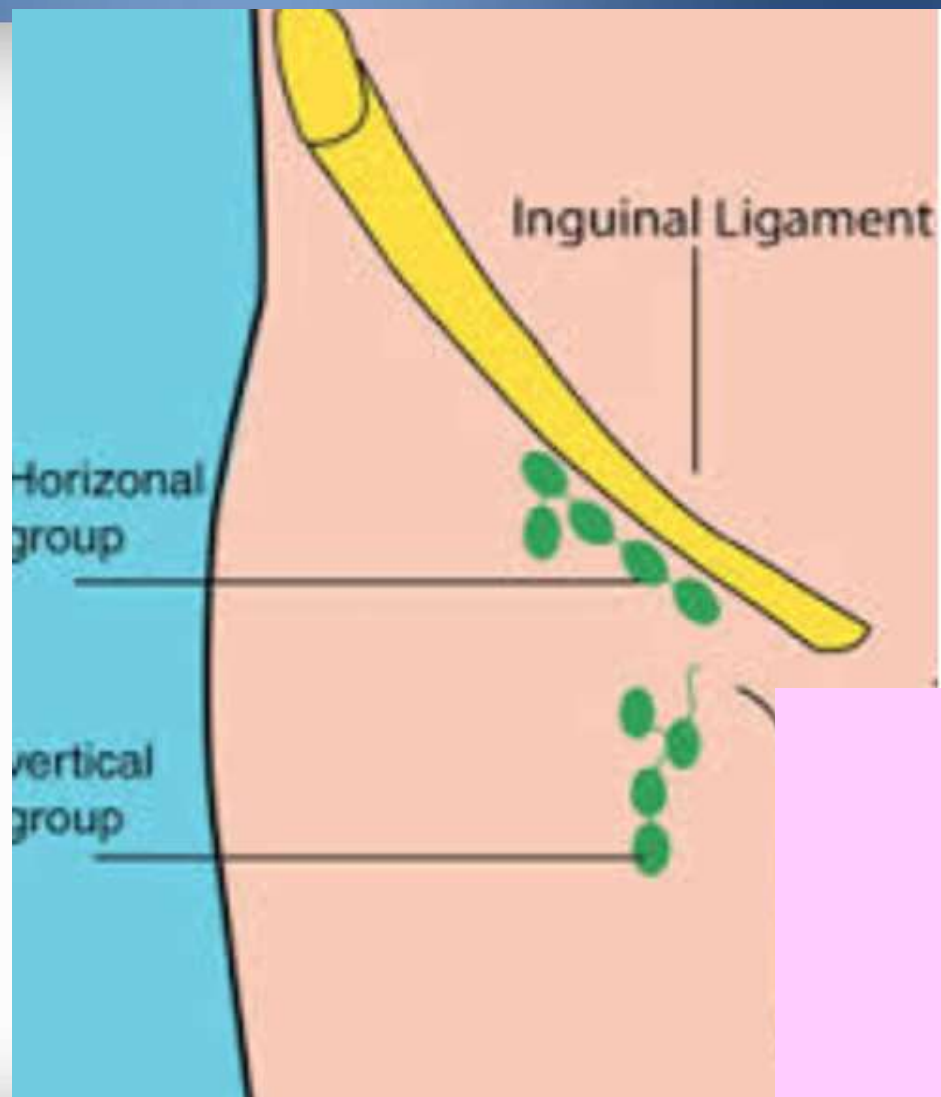
- ❑ Superficial parts of the buttock
- ❑ Back below the iliac crest.

- ❑ The infraumbilical part of the anterior abdominal wall.
- ❑ The perineum, external genitalia and lower part of anal canal .

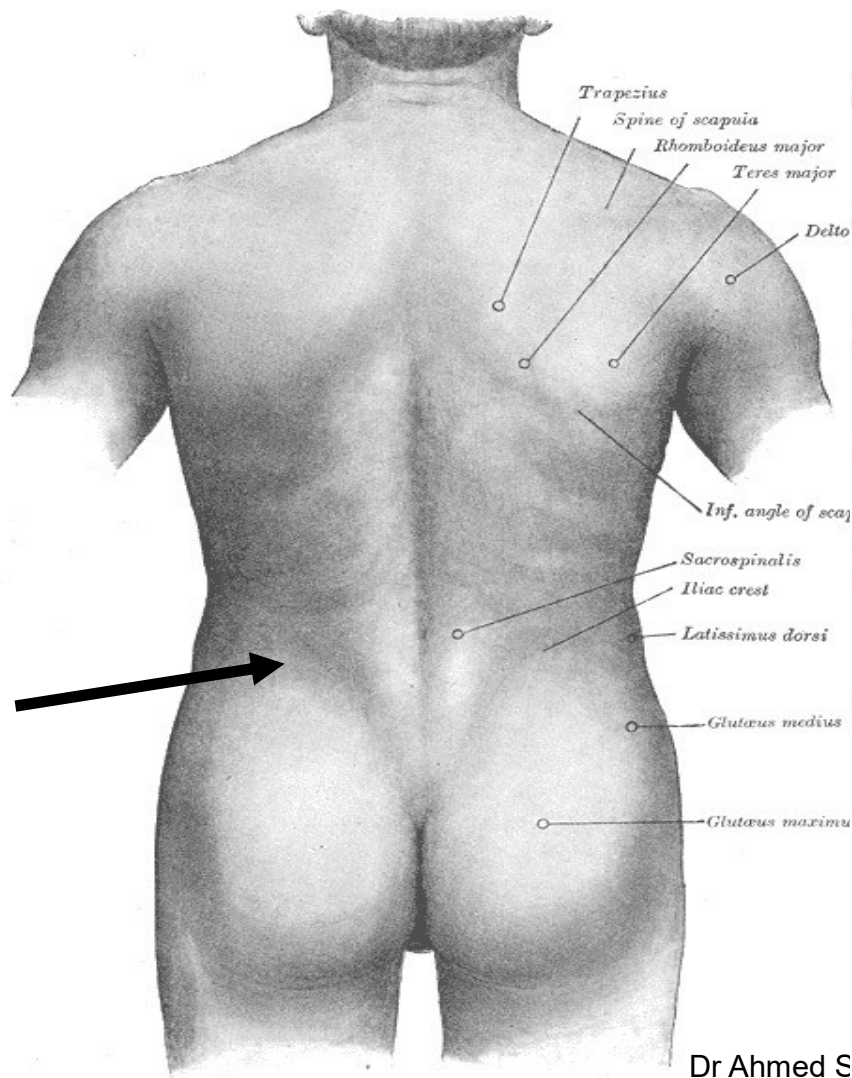


Efferent :

Deep inguinal lymph nodes.



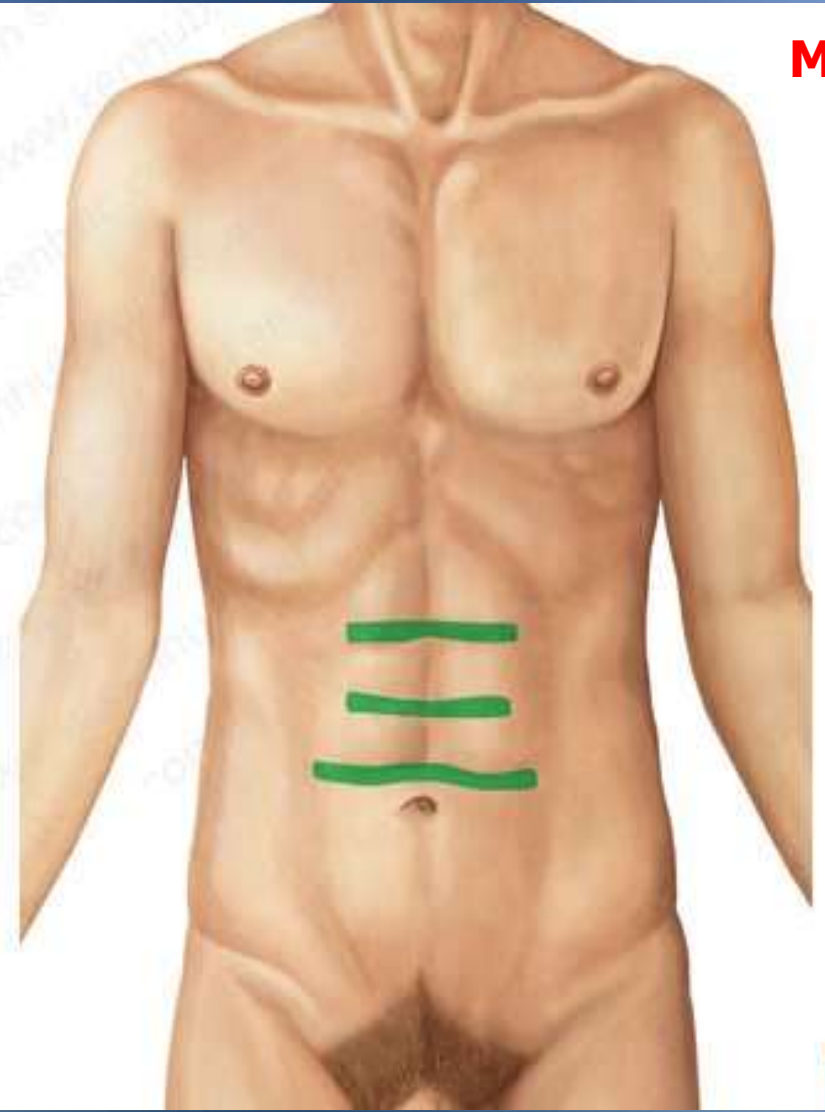
L



Iliac crest

Dr Ahmed S

M



Deep Fascia of the Thigh (Fascia Lata)

Fascia lata Is a strong **fibrous sheet** that surrounds the whole of the thigh like a **tight trousers**

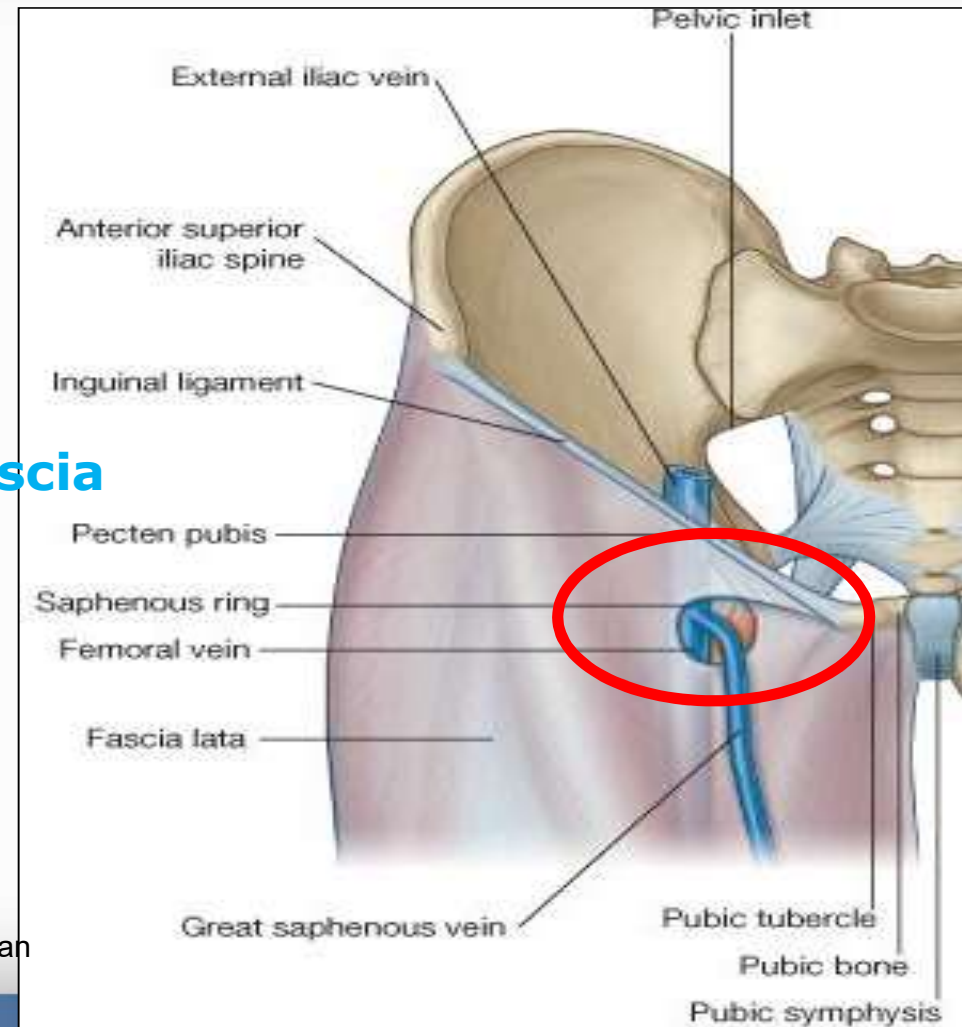
The Saphenous Opening:

It is an oval opening in the supero medial part of the fascia lata

It is covered by the cribriform fascia

Structures passes through cribriform fascia

- Great saphenous vein
- The 3 superficial branches of the femoral artery
- Efferent lymphatics from the superficial inguinal lymph nodes.



Iliotibial tract



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Iliotibial tract

The deep fascia of the thigh is thickened laterally to form **iliotibial tract**

✓ **Attachment :**

Above : iliac tubercle

Below : the lateral condyle of the tibia.

- ✓ It receives the insertion of the tensor fasciae latae and gluteus maximus muscles
- ✓ Function : -Help in knee extension
- Steadies femur on the tibia

Iliotibial Band Syndrome (ITBS)

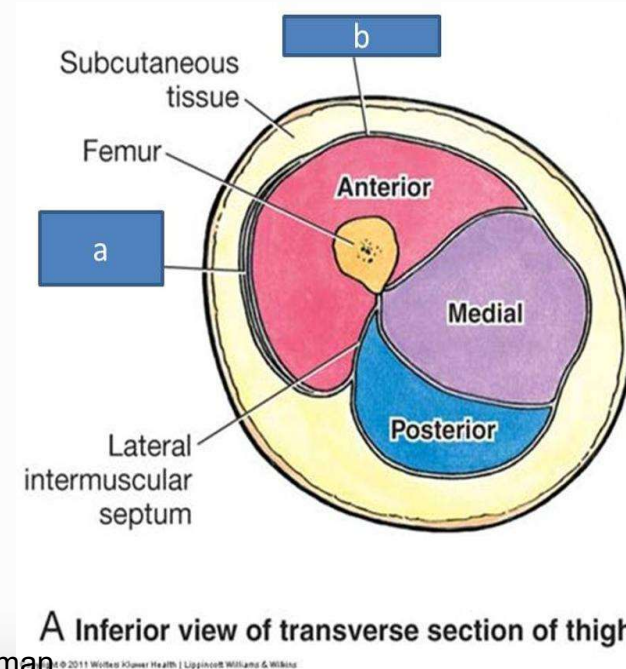
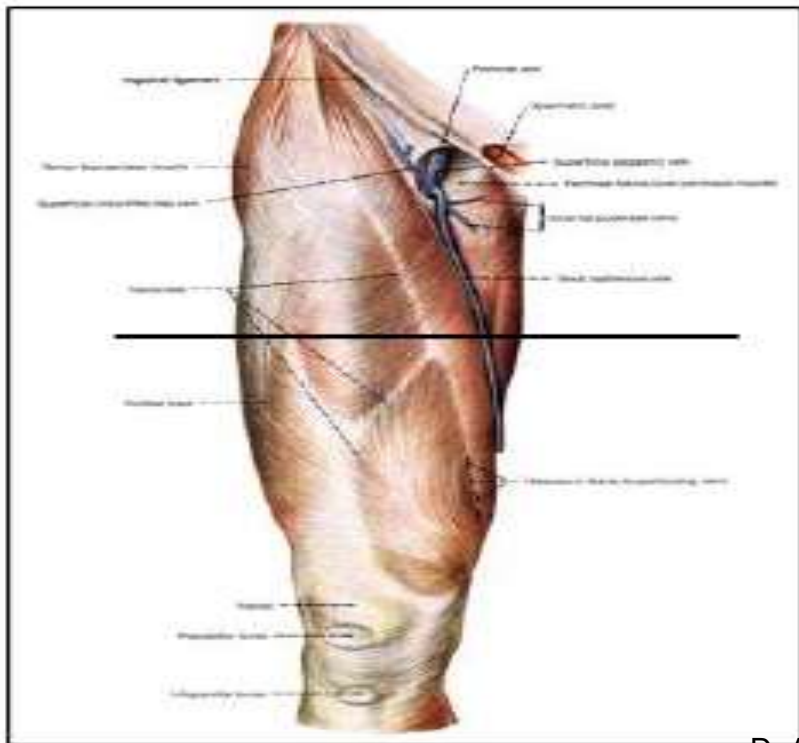
- It is more common within runners
- It occurred when the Iliotibial tract becomes tight or inflamed .
- Symptom is typically swelling and pain on the outside of the knee

REED ONLY



Thigh

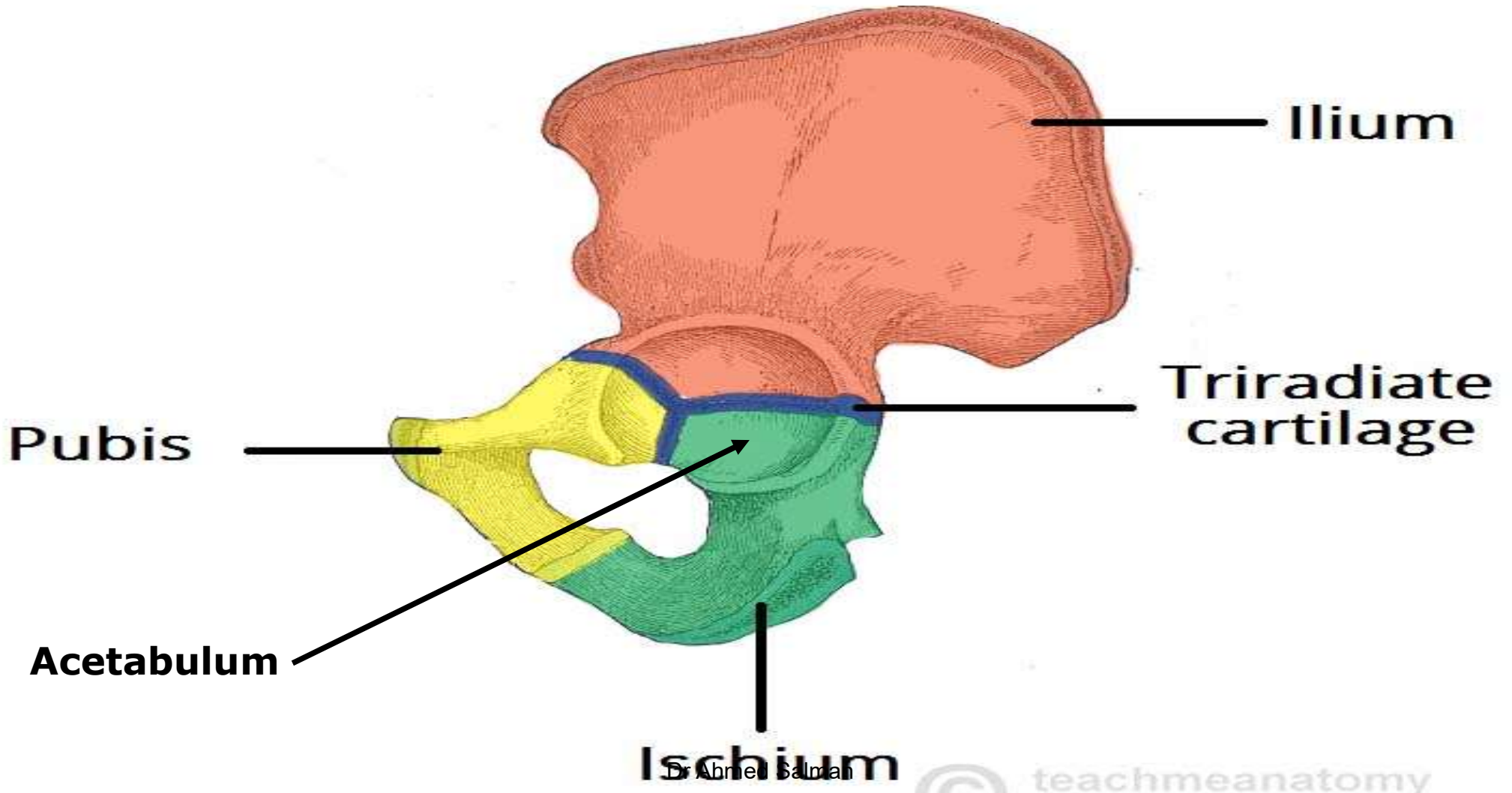
The thigh is divided into three compartments ,anterior ,medial and posterior by three fascial septa pass from the inner aspect of the deep fascia of the thigh to the linea aspera of the femur .



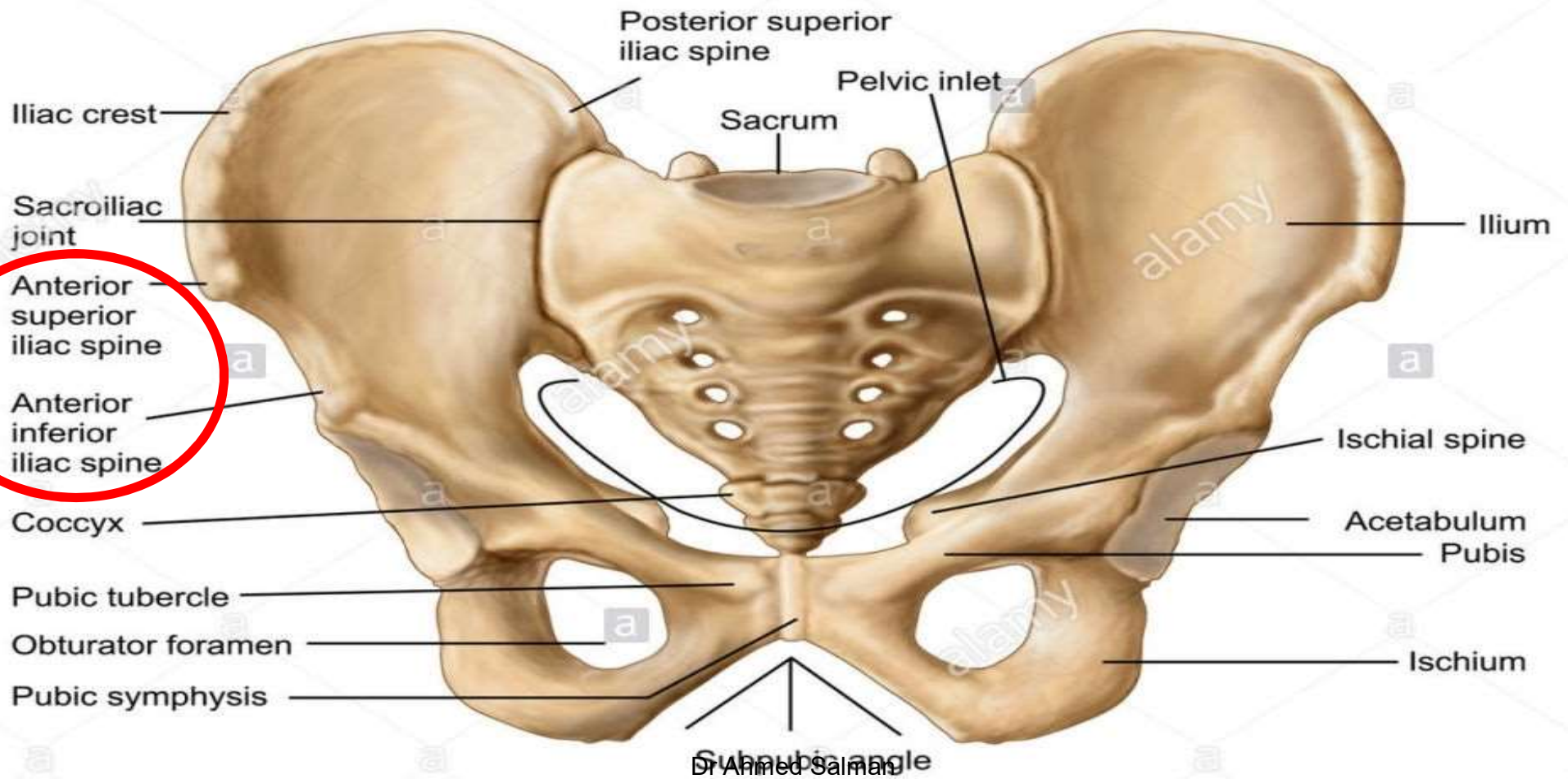
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Thigh compartments

| | ANTERIOR COMPARTMENT | MEDIAL COMPARTMENT | POSTERIOR COMPARTMENT |
|---------------------------|--|---------------------------------|--------------------------------------|
| MUSCLES | Quadriceps + Iliopsoas , Sartorius | Adductors + Gracilis | Hamstrings |
| MOVEMENT (Mainly) | Flexion of thigh Extension of leg | Adduction of thigh | Extension of thigh Flexion of leg |
| Motor NERVE Supply | Femoral n. (lumbar plexus) | Obturator N. (lumbar plexus) | Sciatic n. (sacral plexus) |



Dr. Ahmed Samir



Dr. Ahmed Samir

Anterior Compartment of the Thigh

I-Muscles

1- Iliopsoas

2- Quadriceps femoris

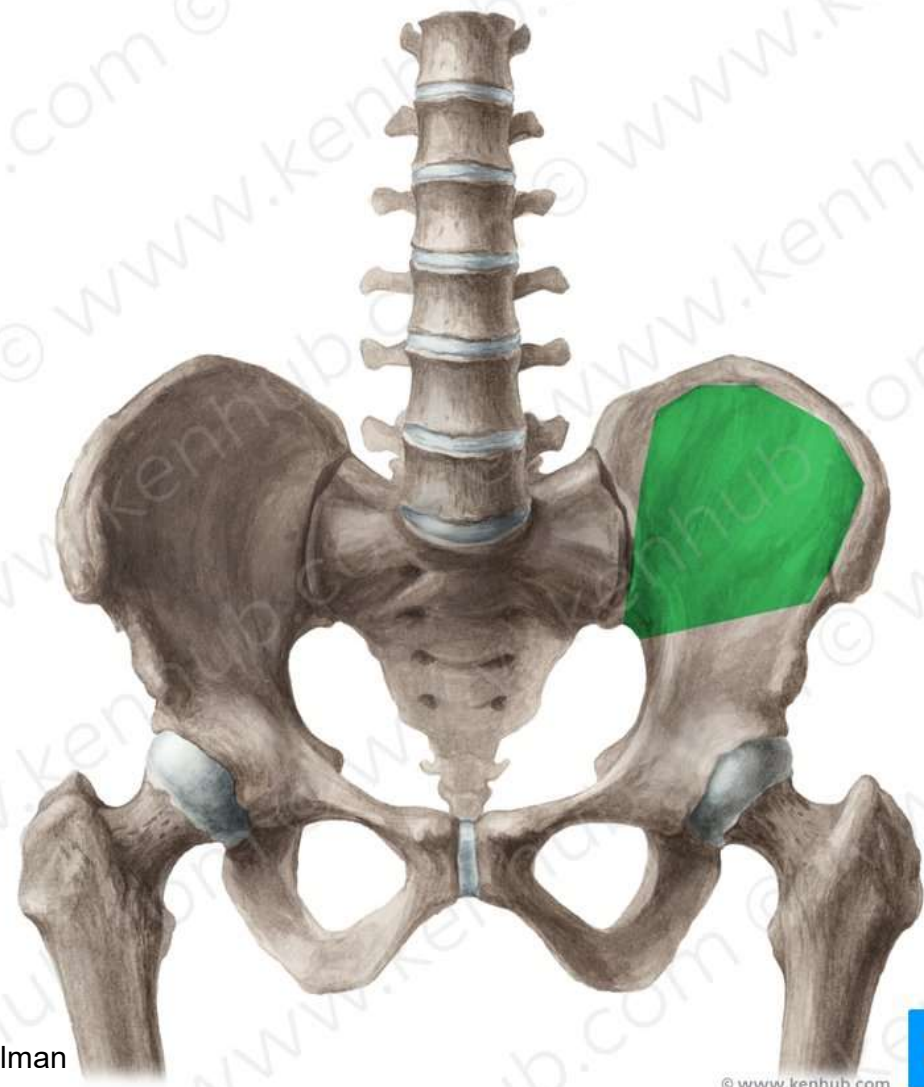
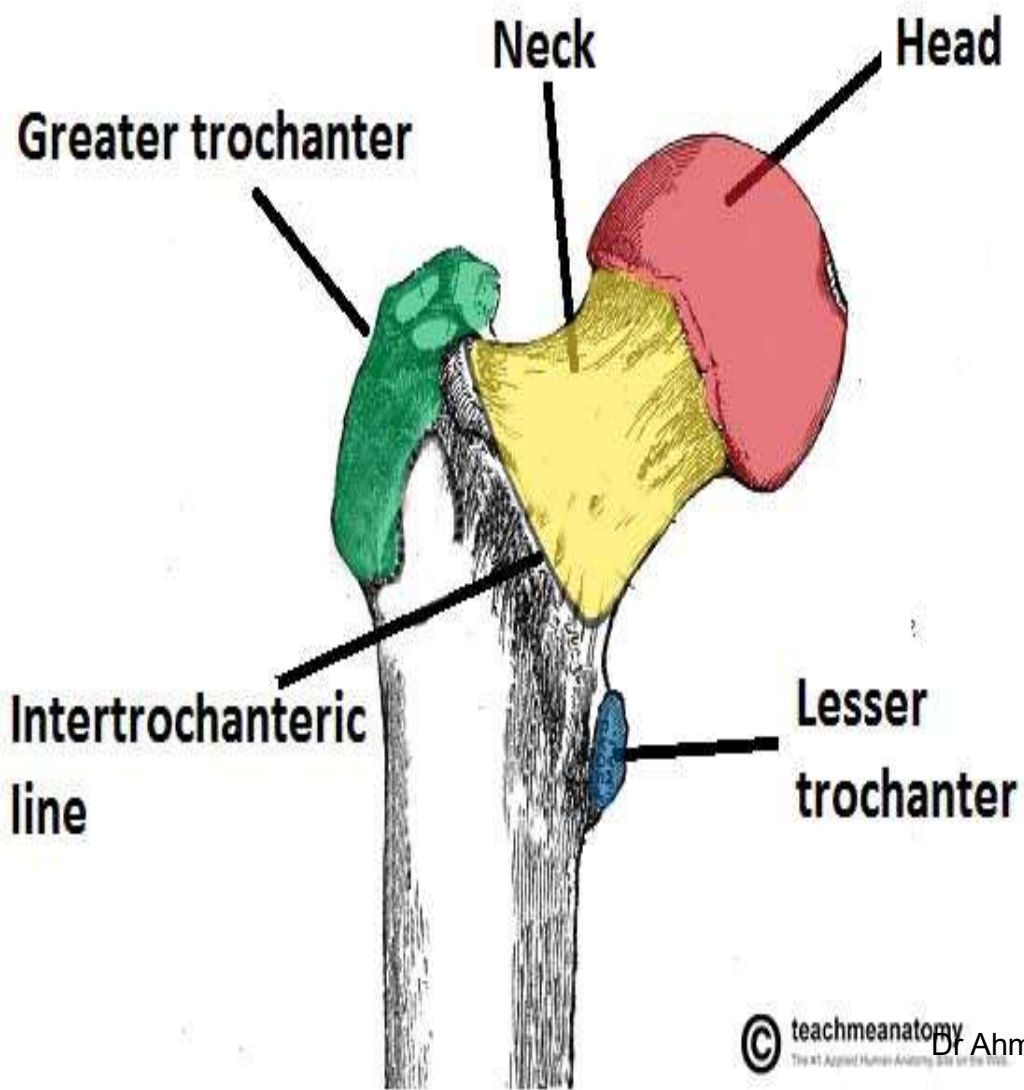
3- Sartorius

4- Pectineus

All are innervated by the FEMORAL nerve

EXCEPT

Psoas Major by L1,2,3



1-Iliopsoas (it composed of 2 muscles Iliacus Psoas Major)

✓ Origin

Iliacus : iliac fossa

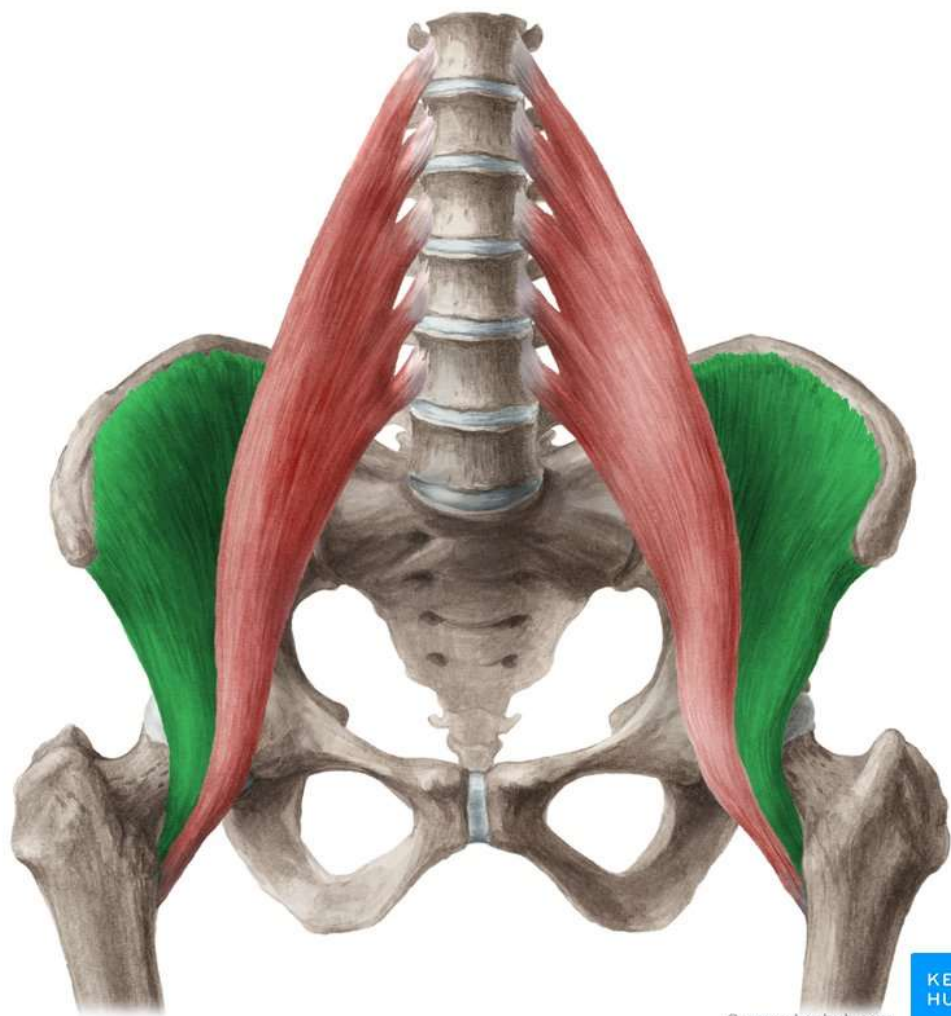
Psoas Major : Transverse processes, bodies, and intervertebral discs of T12-L5 vertebrae

✓ **Insertion :** lesser trochanter of femur

✓ Action :

- Flexes the thigh
- Psoas major Flexes trunk on thigh; if thigh is fixed.



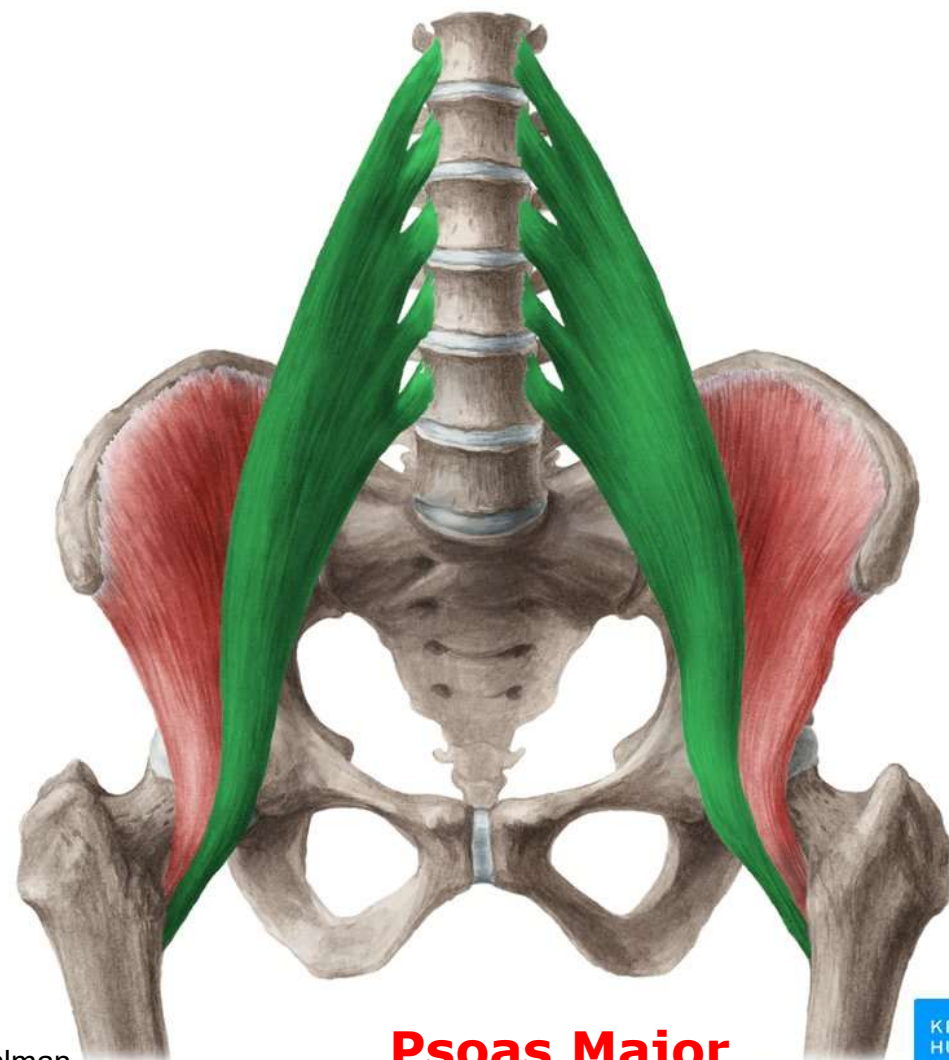


Iliacus

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Psoas Major

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Psoas sign

In case of appendicitis ,flexion of the hip is painful

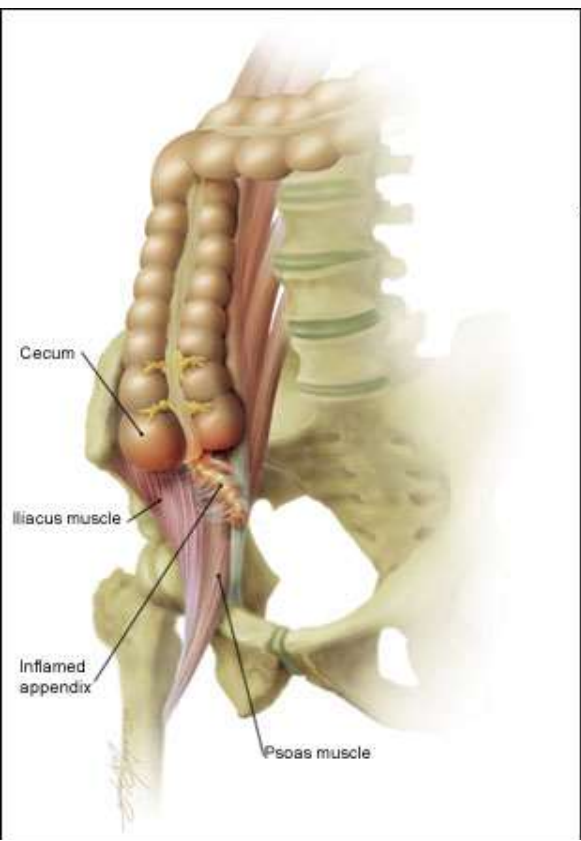
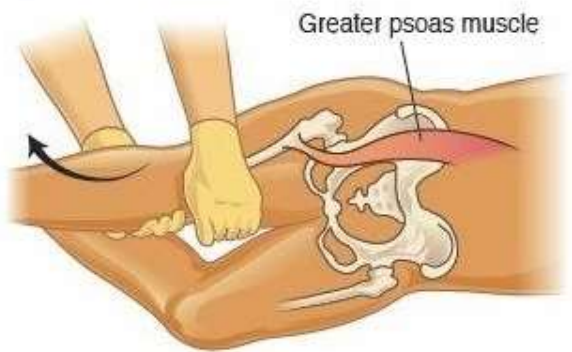


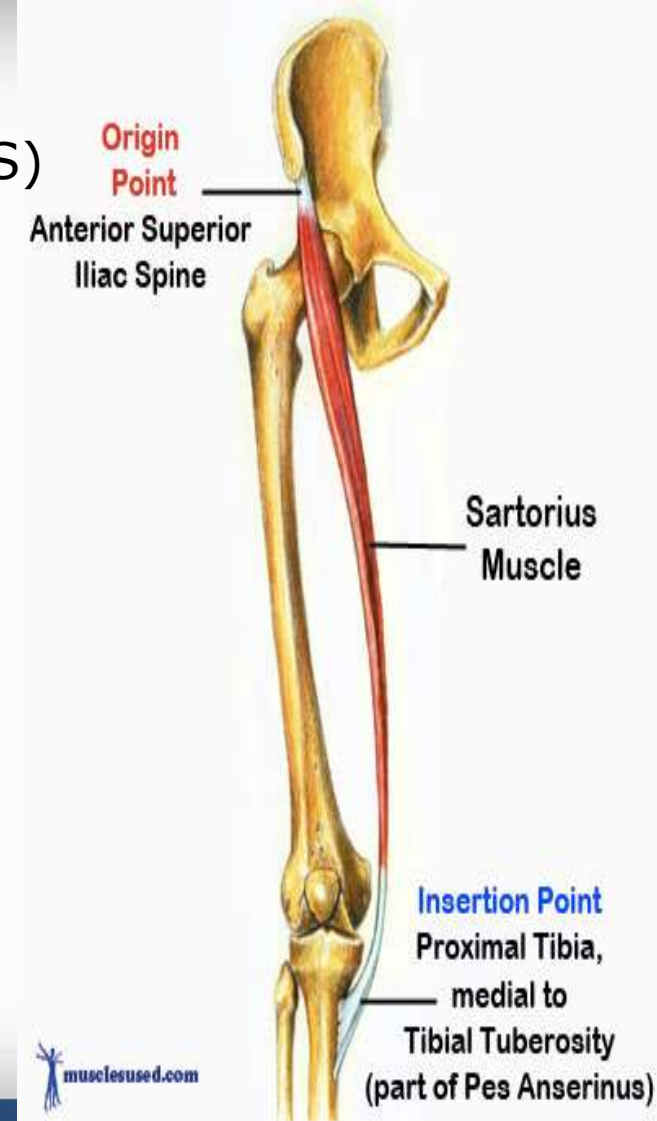
Illustration © 1999 Floyd E. Hosmer

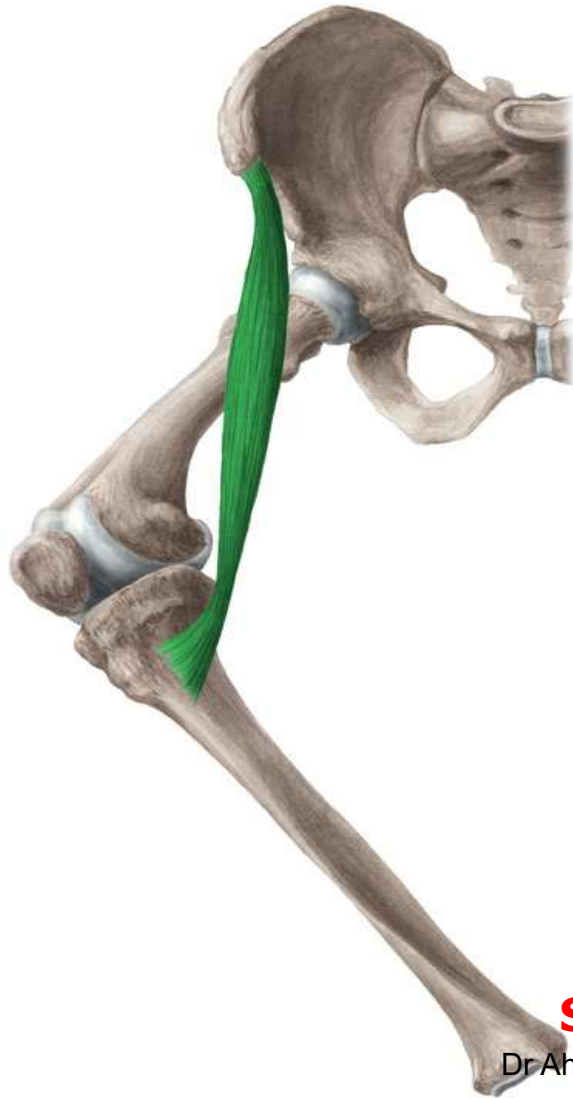


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2-Sartorius

- ✓ **Origin:** anterior superior iliac spine
- ✓ **Insertion :** Upper medial surface of shaft of tibia (SGS)
- ✓ **Action :** Tailor position
Flexes, abduct, laterally rotate the thigh
Flexes and medially rotates the knee





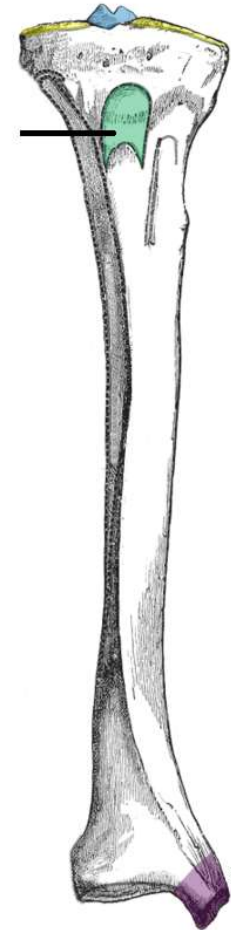
Sartorius

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Patella tendon



Medial malleolus

Anterior

3-Quadriceps femoris

Has four head with different origin and same insertion

Origin :

1. Rectus femoris

Straight head :Anterior inferior iliac spine
Reflected head Above the acetabulum.

2.Vastus intermedius

Anterior and lateral surface of femur

3.Vastus lateralis and

4.Vastus medialis Upper end and shaft of femur

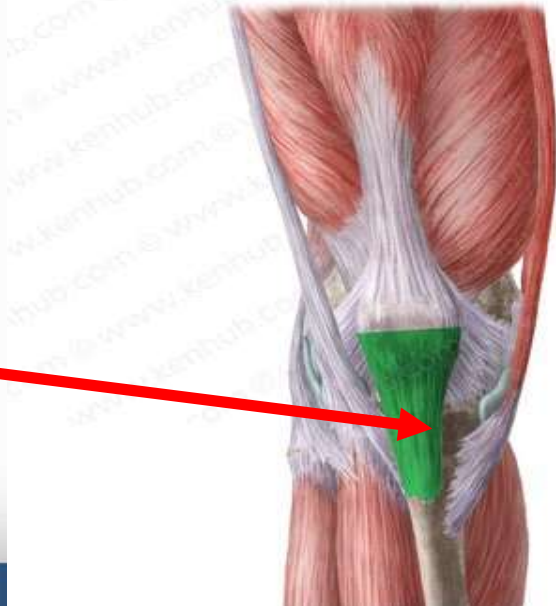
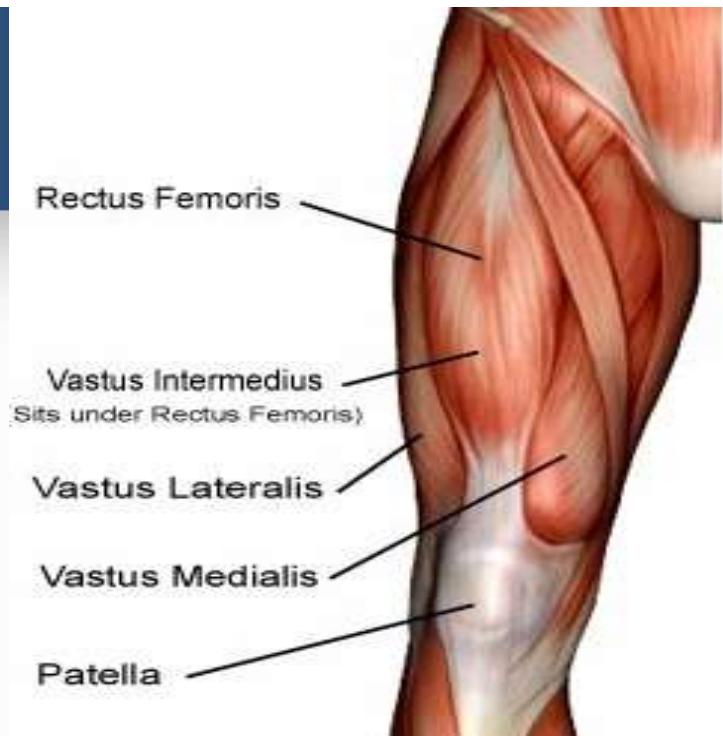
Insertion : patella and tibia tuberosity
via the patellar ligament

Action :

extends knee.

(rectus femoris) flexes thigh also.

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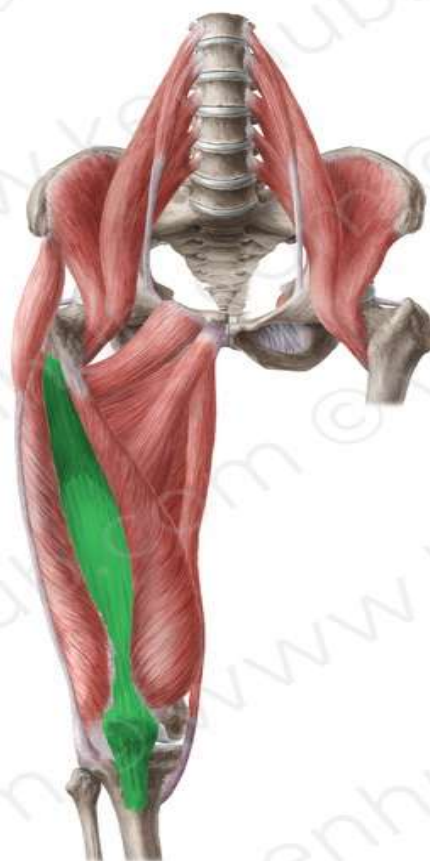




Vastus medialis



Vastus intermedius

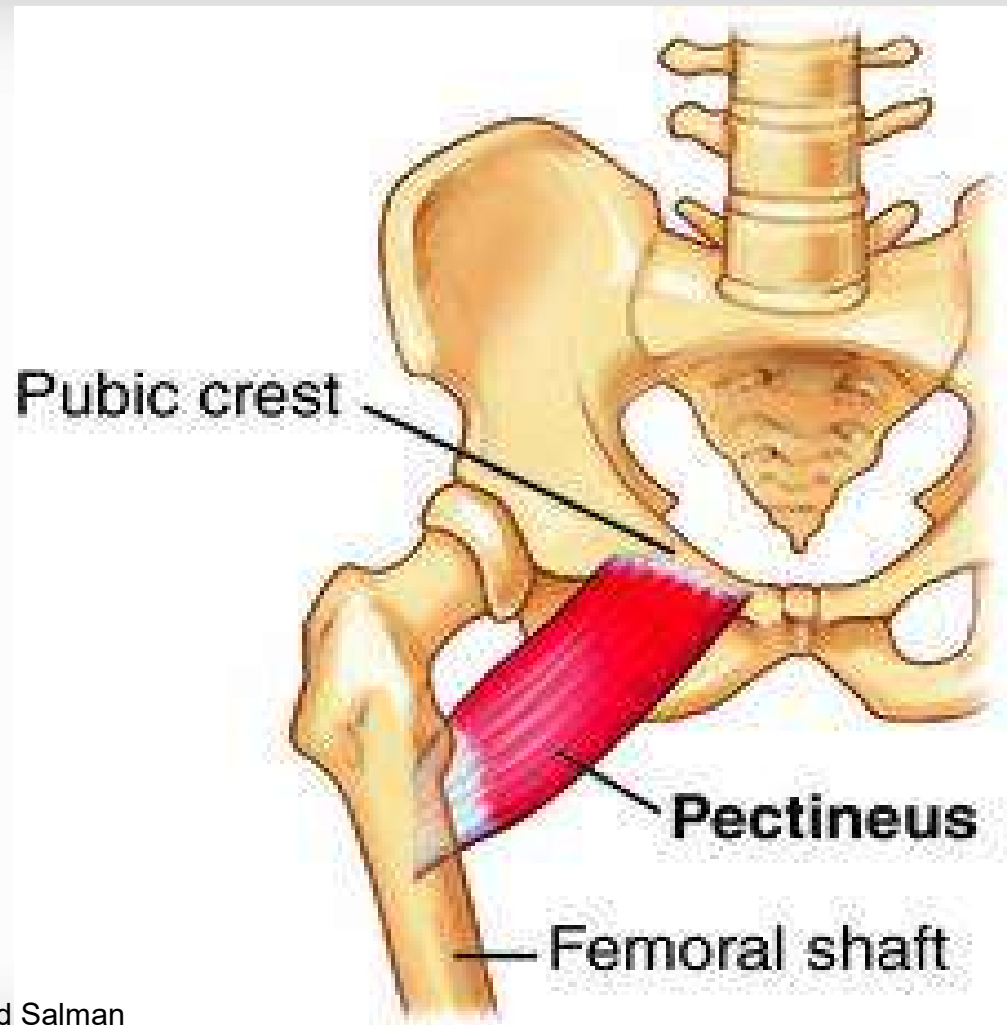


Vastus lateralis



4-Pectineus

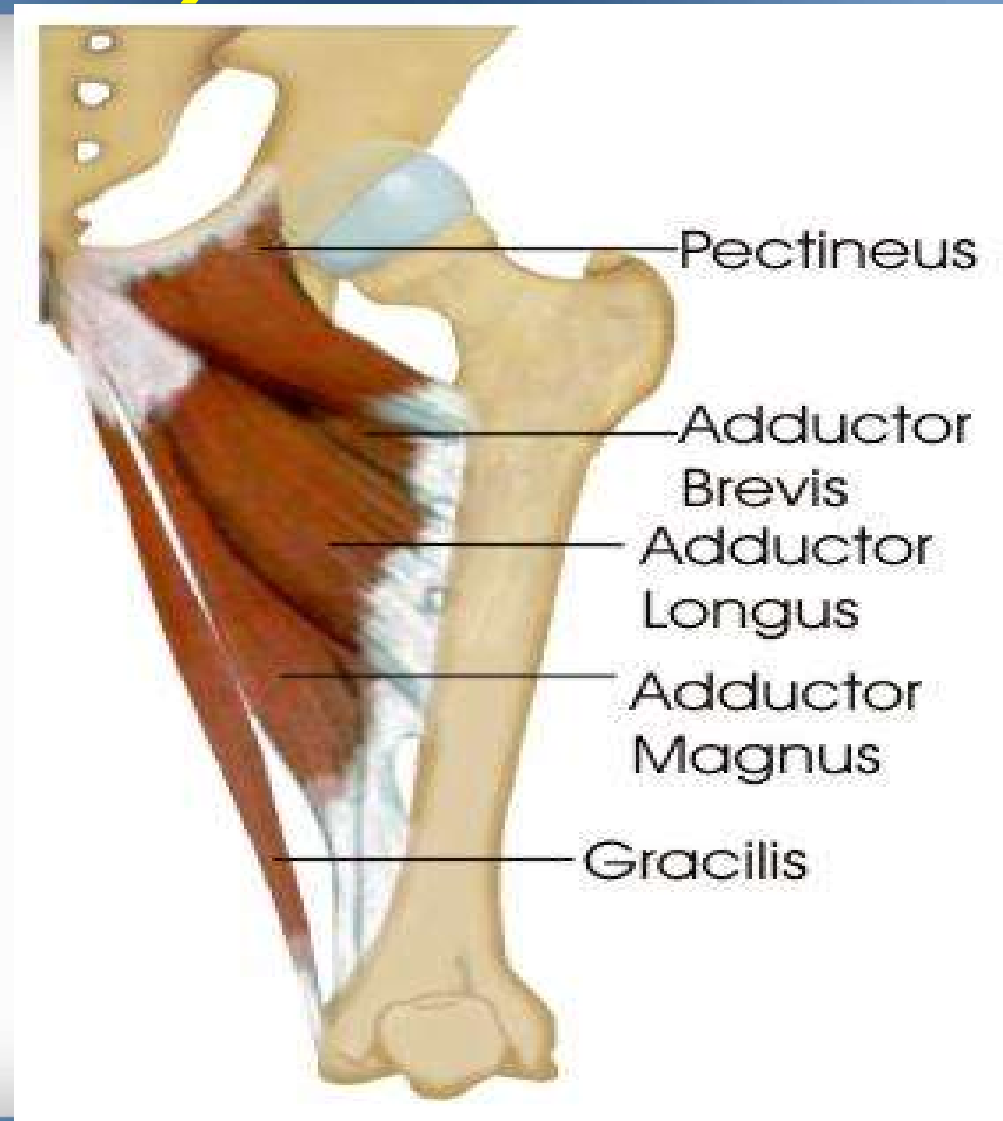
- ✓ **Origin:** Superior pubic ramus
- ✓ **Insertion :** Linea aspera
- ✓ **Action :** Flexes and adducts thigh

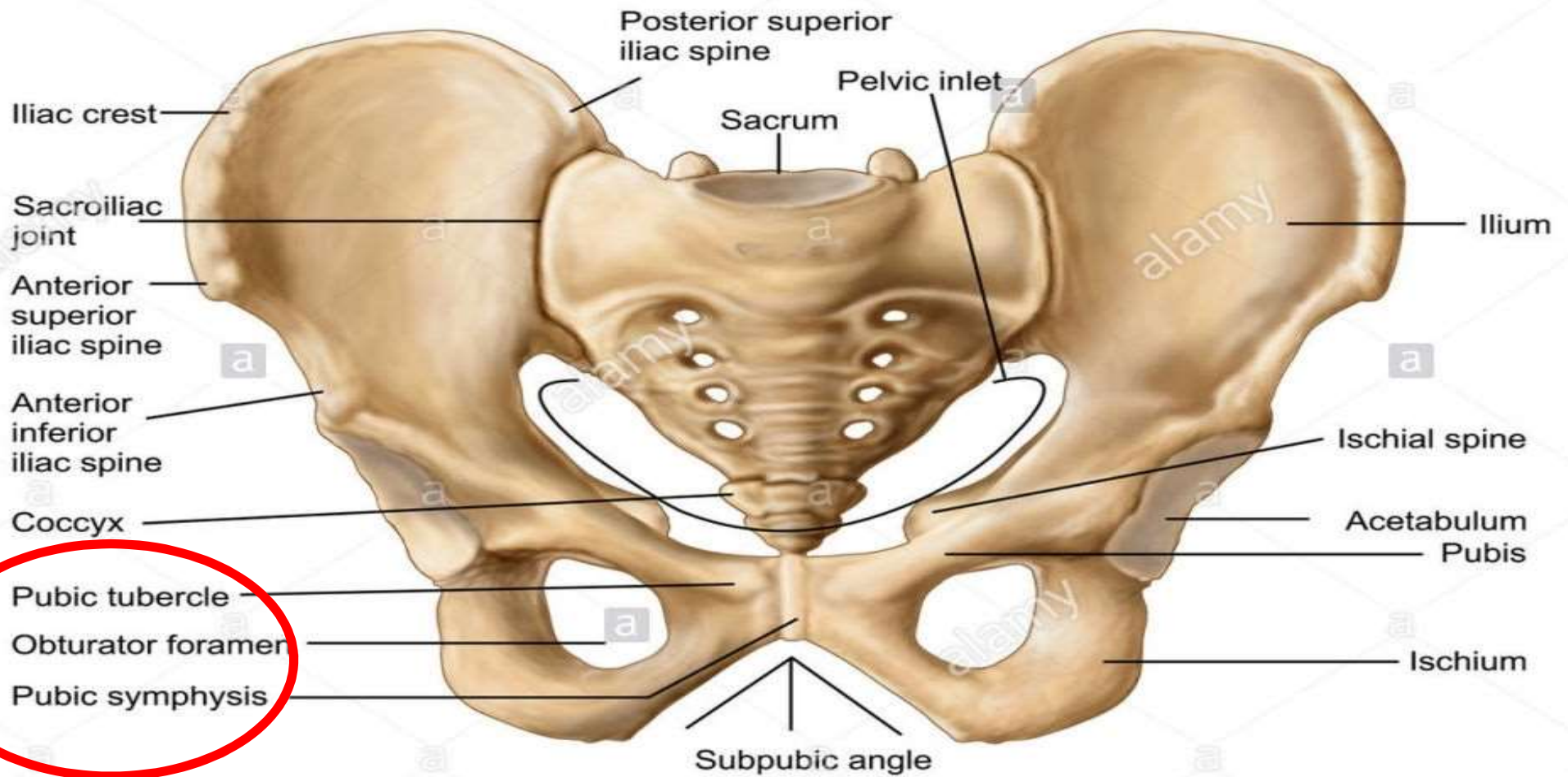


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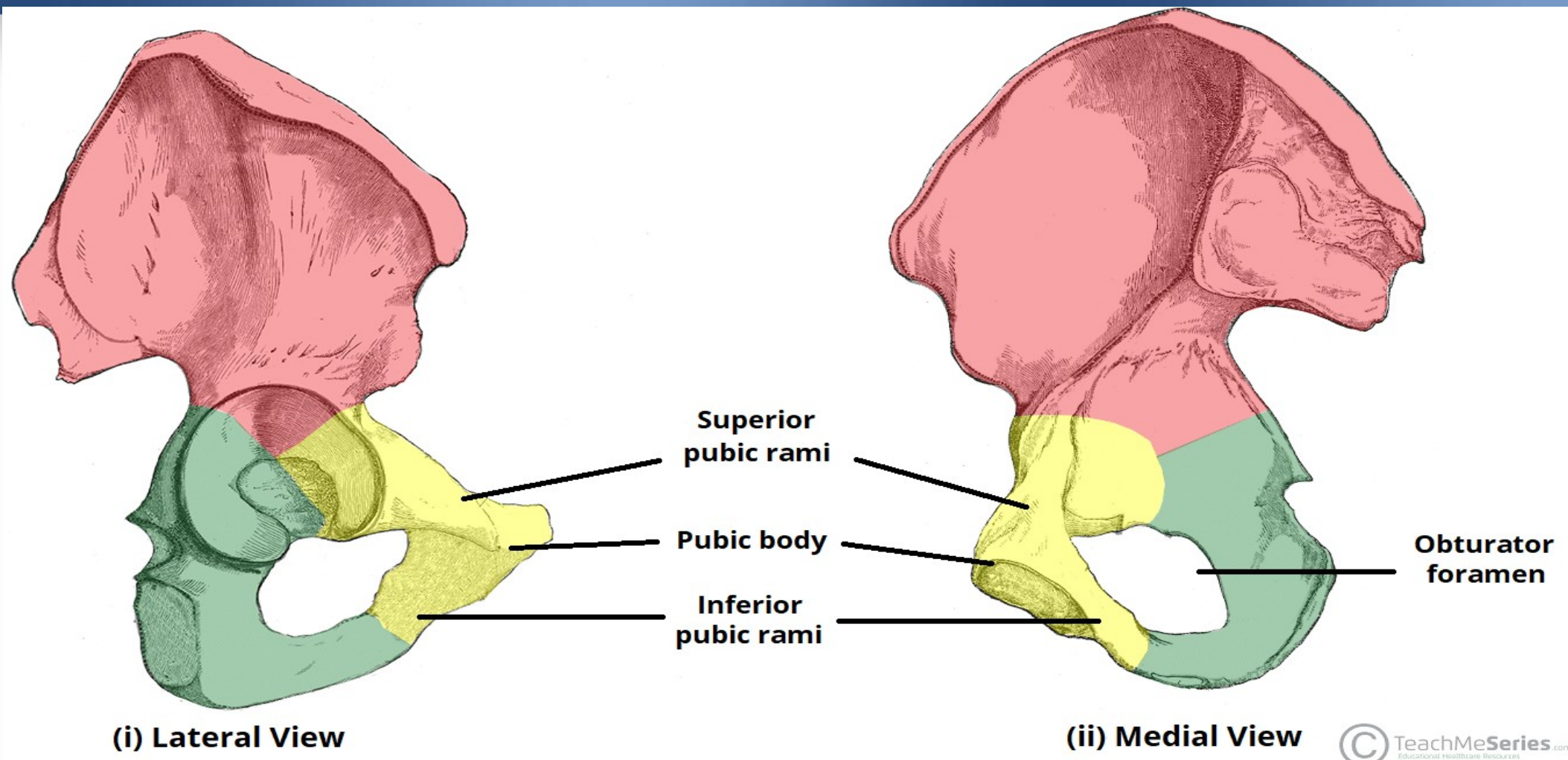
Medial Compartment of the Thigh (Adductors)

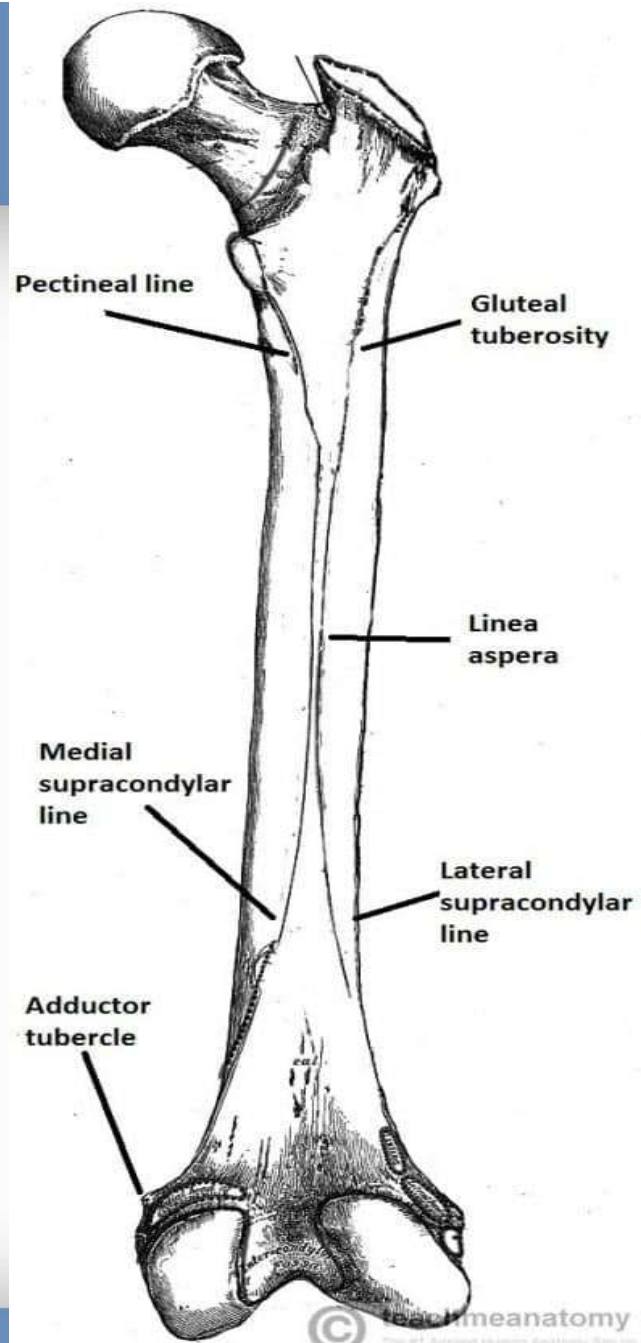
Medial Compartment of the Thigh (Adductors)





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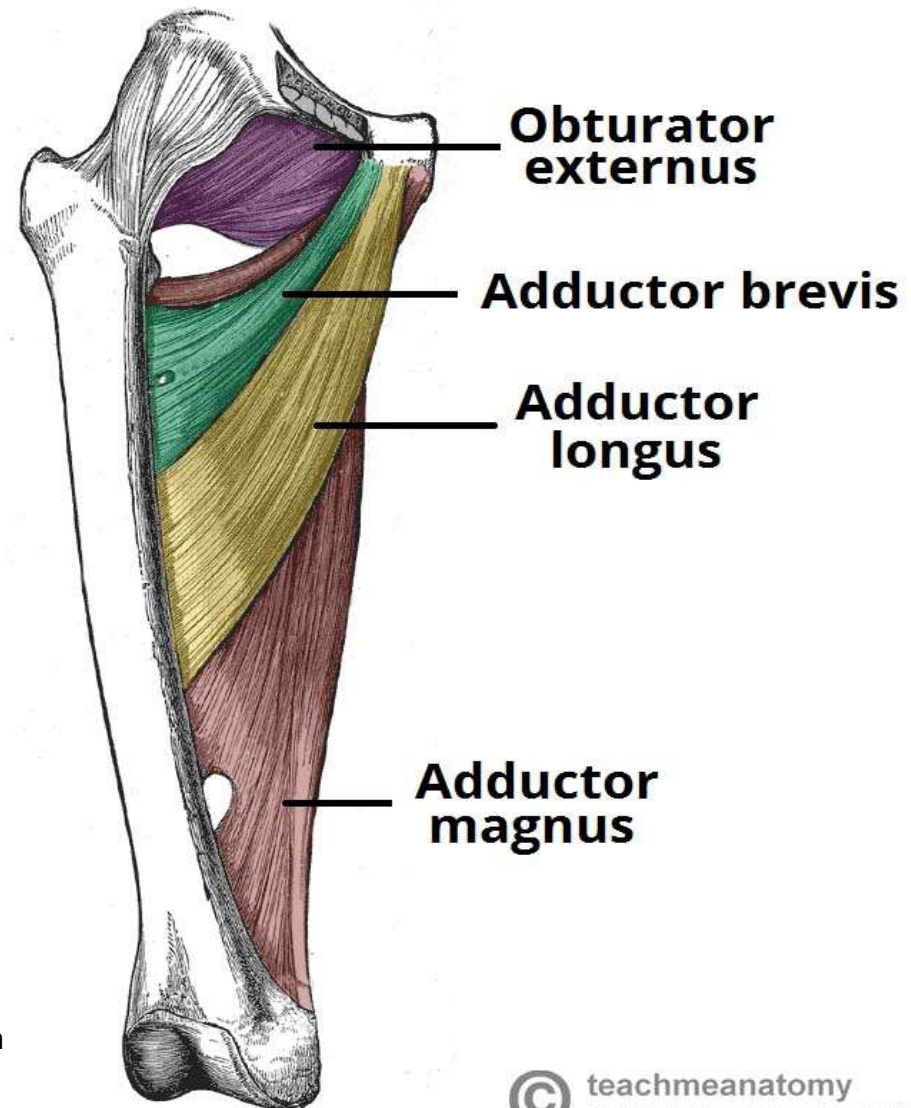




I. Muscles

1. Adductor longus
2. Adductor brevis
3. Adductor magnus (pubic head)
4. Gracilis

All are innervated by the
OBTURATOR nerve



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Muscles of the Medial Compartment of the Thigh

- ✓ **Origin** : ALL from (Pubic arch)
EXCEPT adductor **longus** from body of pubis and adductor **brevis** from inferior pubic ramus
- ✓ **Insertion** : all in linea aspera **EXCEPT** gracilis in Upper medial surface of shaft of tibia (SGS)

Action : **Adductors** : **adducts** thigh

Gracilis **Adducts** thigh , flexes and medial, rotates the leg





Adductor longus

Adductor brevis

Adductor magnus

Pectineus

Gracilis



Obturator Nerve

It is a mixed nerve

Origin :

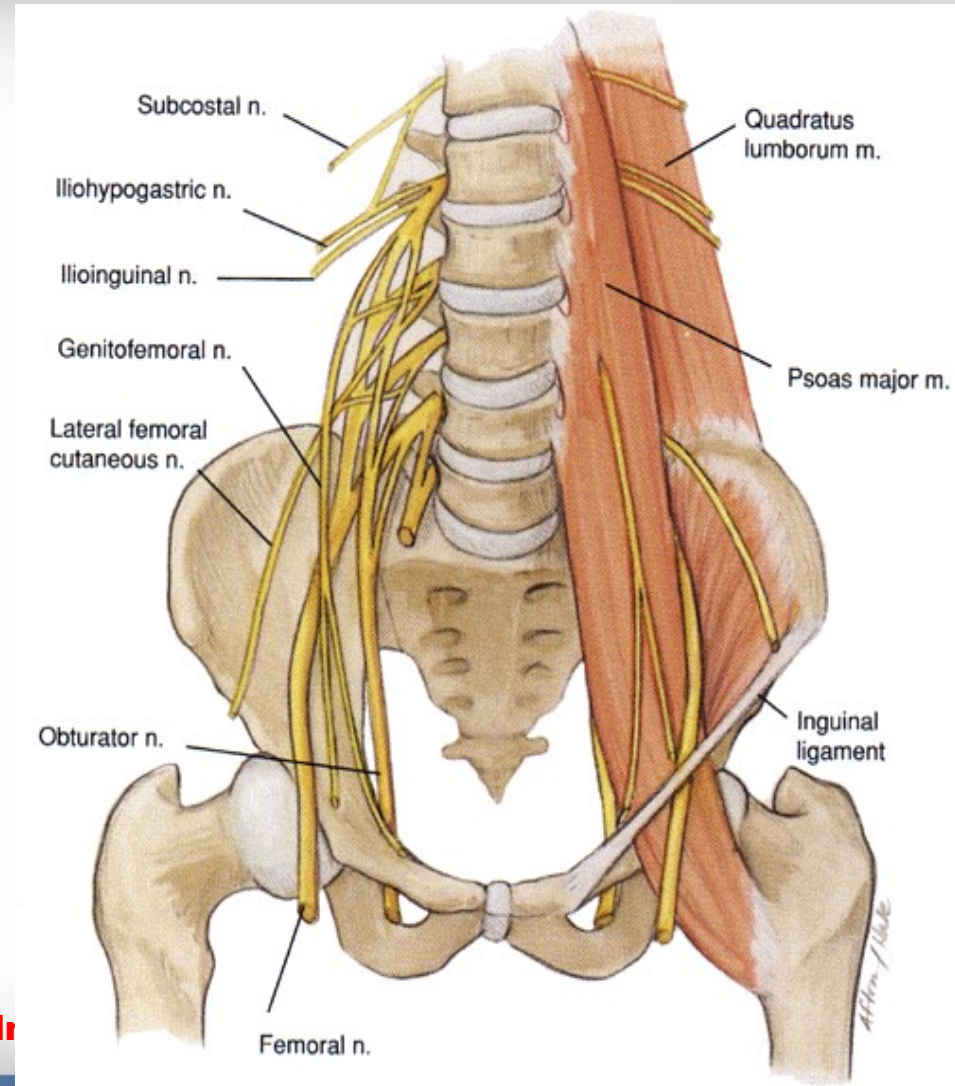
Arises from L2, 3, 4.

Course :

-It descends medial to psoas major, and leaves the pelvis through the obturator canal.

Termination:

It ends by dividing into anterior and posterior divisions .



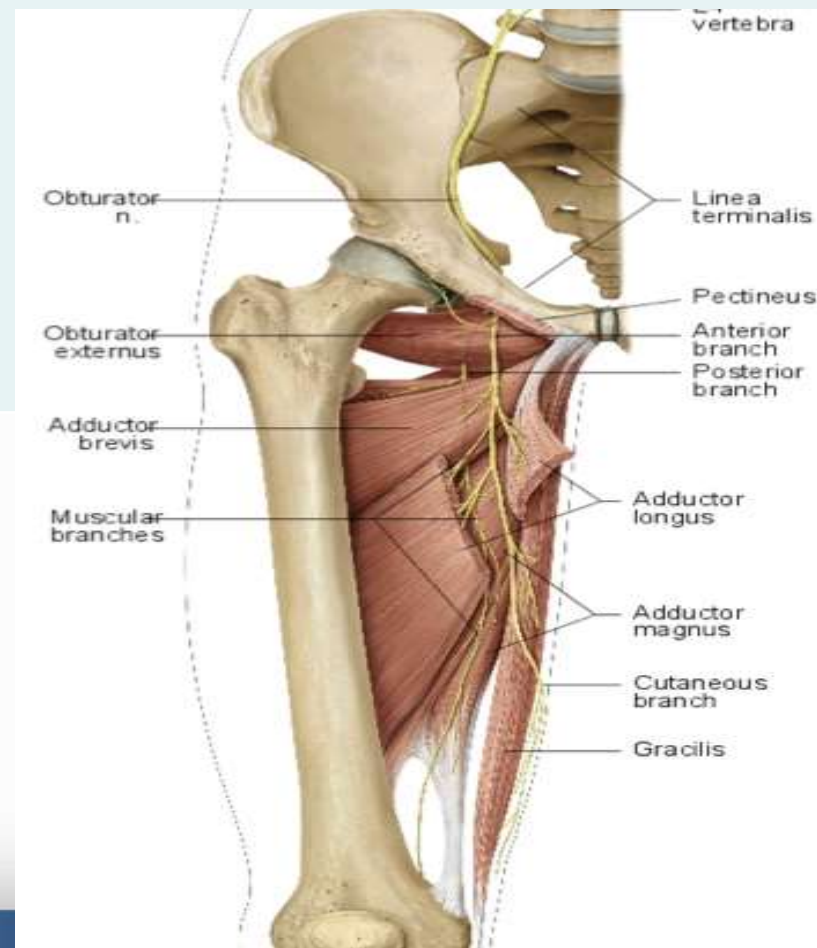
Branches

Muscular

1. Adductor longus
2. Adductor brevis
3. Adductor Magnus
4. Gracilis
5. Obturator externus

Sensory

It supplies skin on the medial side of the thigh



Femoral Triangle

It is located in the front of upper third of the thigh.

1- Boundaries

Medial :Adductor Longus

Lateral :Sartorius

Base :Inguinal Ligament

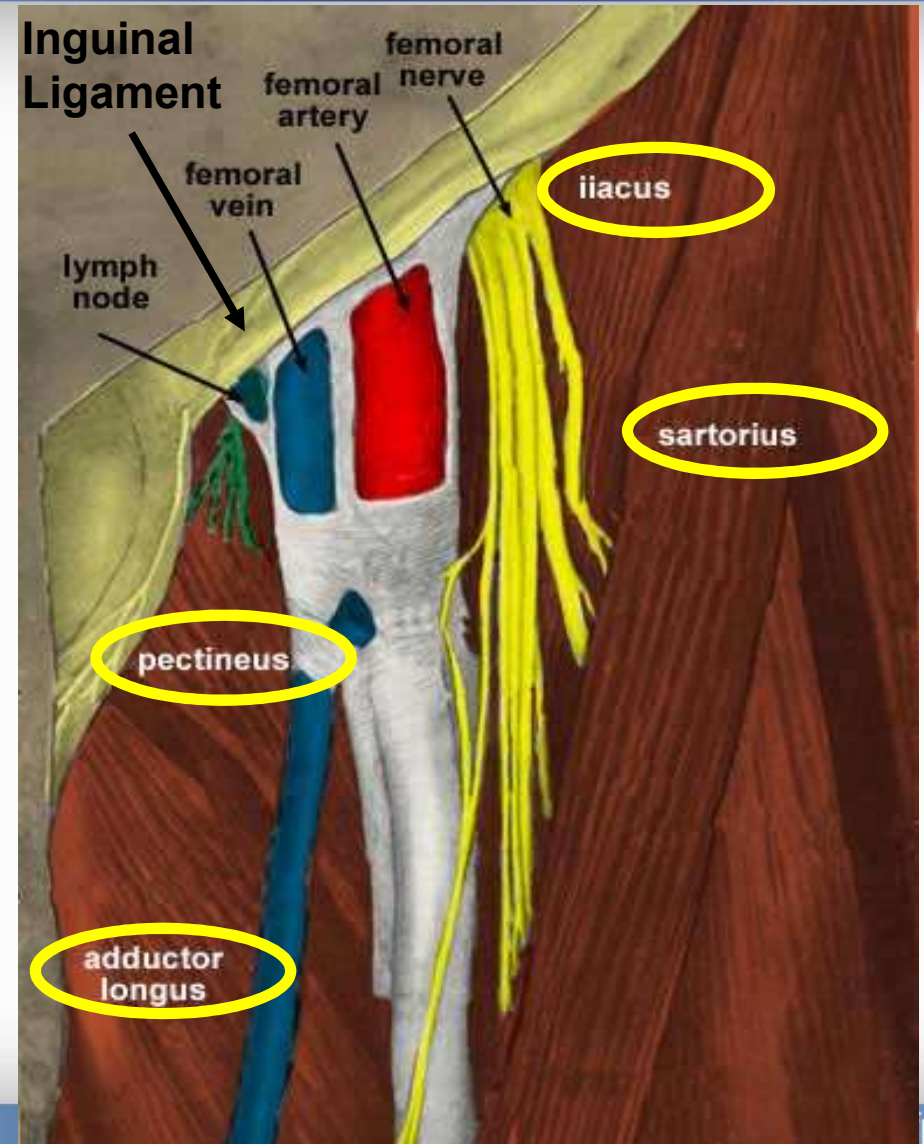
Floor :it is made by
from lateral to medial

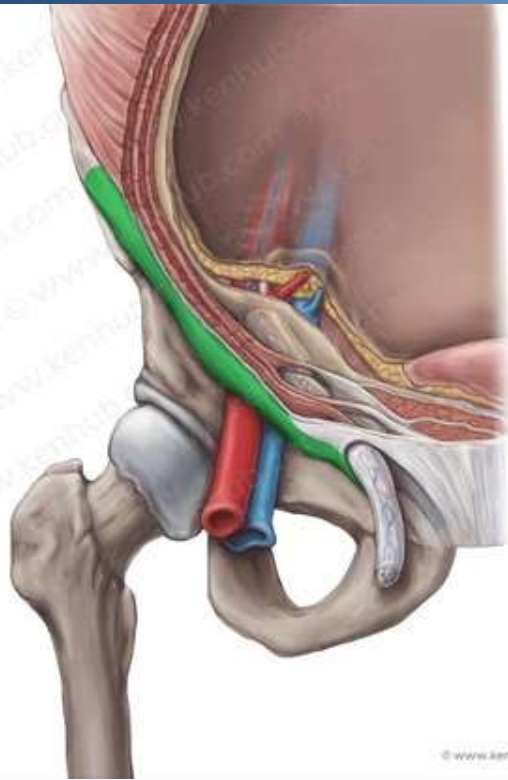
- ❖ Iliopsoas muscle
- ❖ Pectineus muscle
- ❖ Adductor longus

Apex : meeting of medial and lateral borders

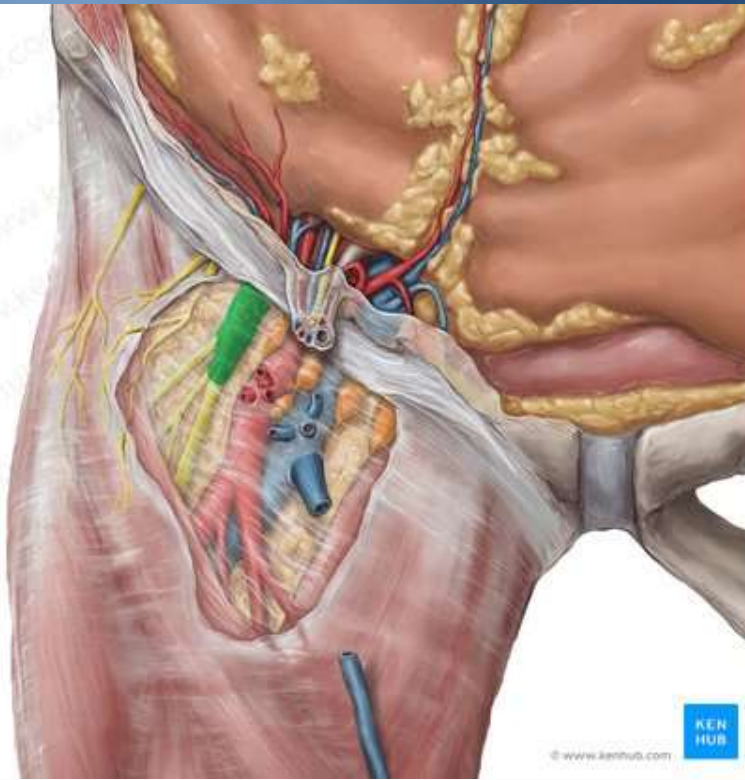
Roof :skin ,superficial and deep

Fascia containing the
Saphenous opening





Inguinal ligament



Femoral sheath

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The Saphenous Opening

Fascia lata Is a strong **fibrous sheet** that surrounds the whole of the thigh like a **tight trousers**

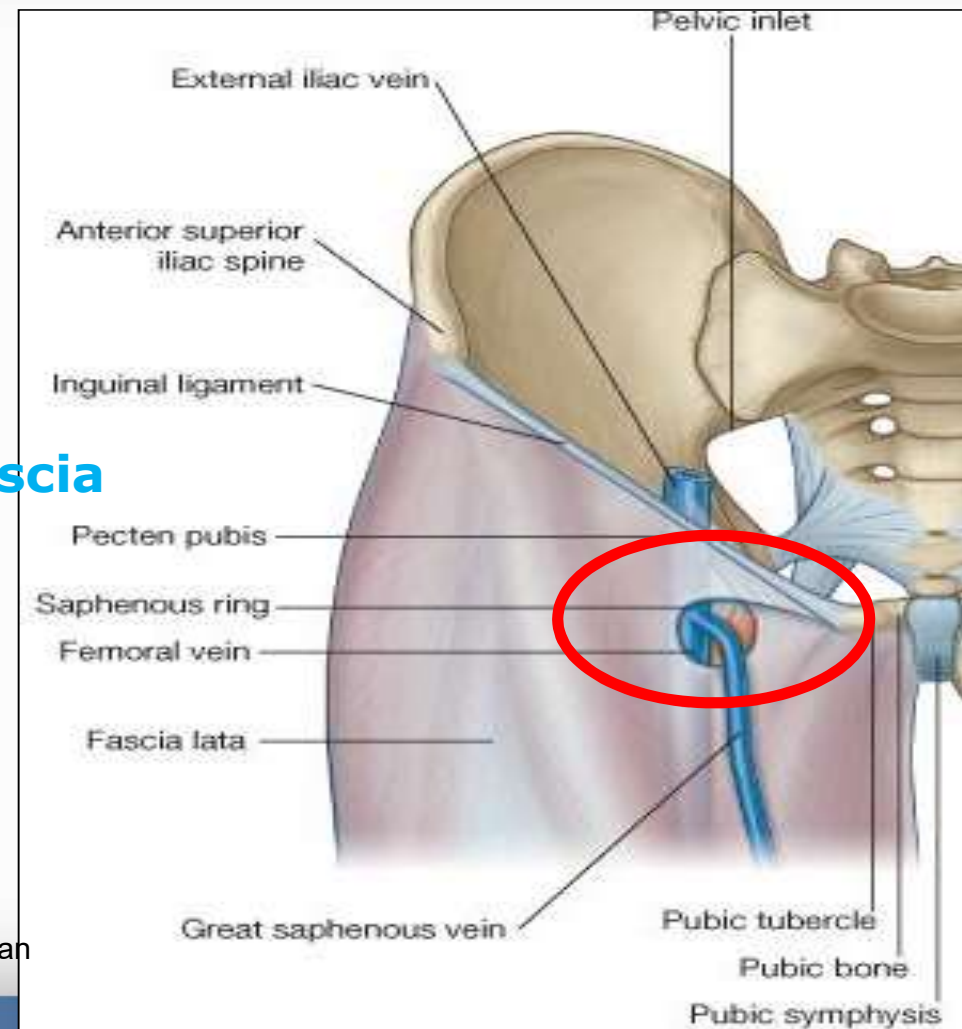
The Saphenous Opening:

It is an oval opening in the superomedial part of the fascia lata

It is covered by the cribriform fascia

Structures passes through cribriform fascia

1. Great saphenous vein
2. The 3 superficial branches of the femoral Artery
3. Efferent lymphatics from the superficial inguinal lymph nodes.

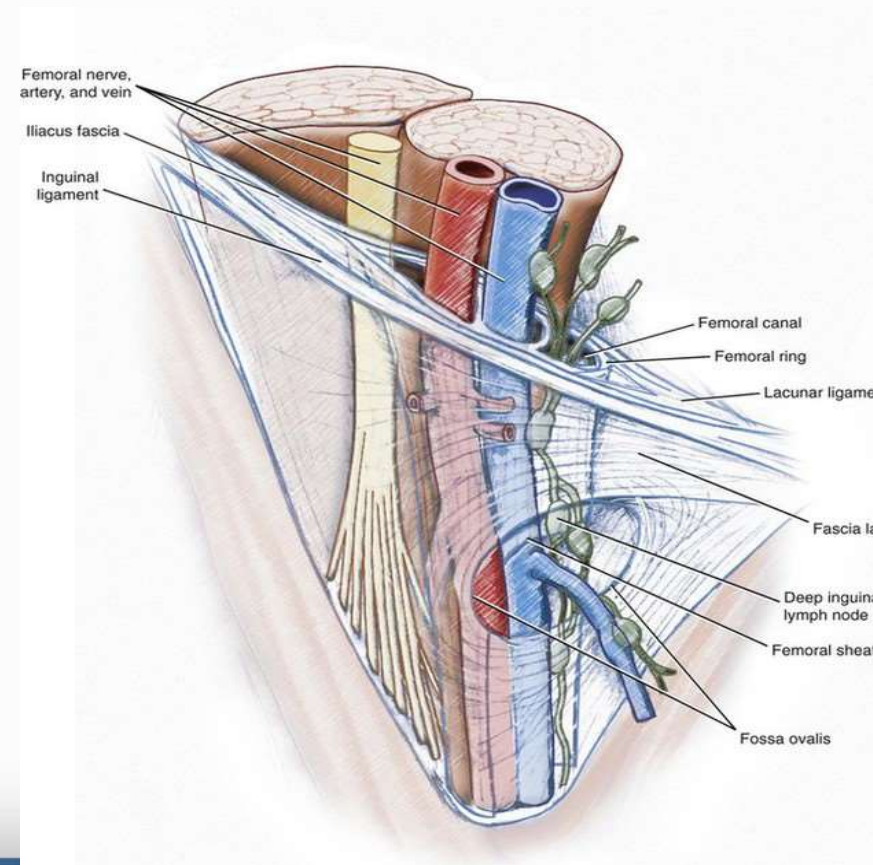


2- Contents

- 1- The **femoral sheath**
- 2- The femoral artery and its branches.
- 3- The femoral vein and its tributaries
- 4- Terminal part of the femoral nerve and its branches.
- 5- Femoral branch of genitofemoral nerve
- 6- Lateral cutaneous nerve of the thigh
- 7- Deep inguinal lymph nodes.

A,V,N,L

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Femoral sheath

It is a sheath of fascia surrounds upper

1/3 of femoral vessels

It has three compartments

1- Lateral compartment

1-Femoral artery

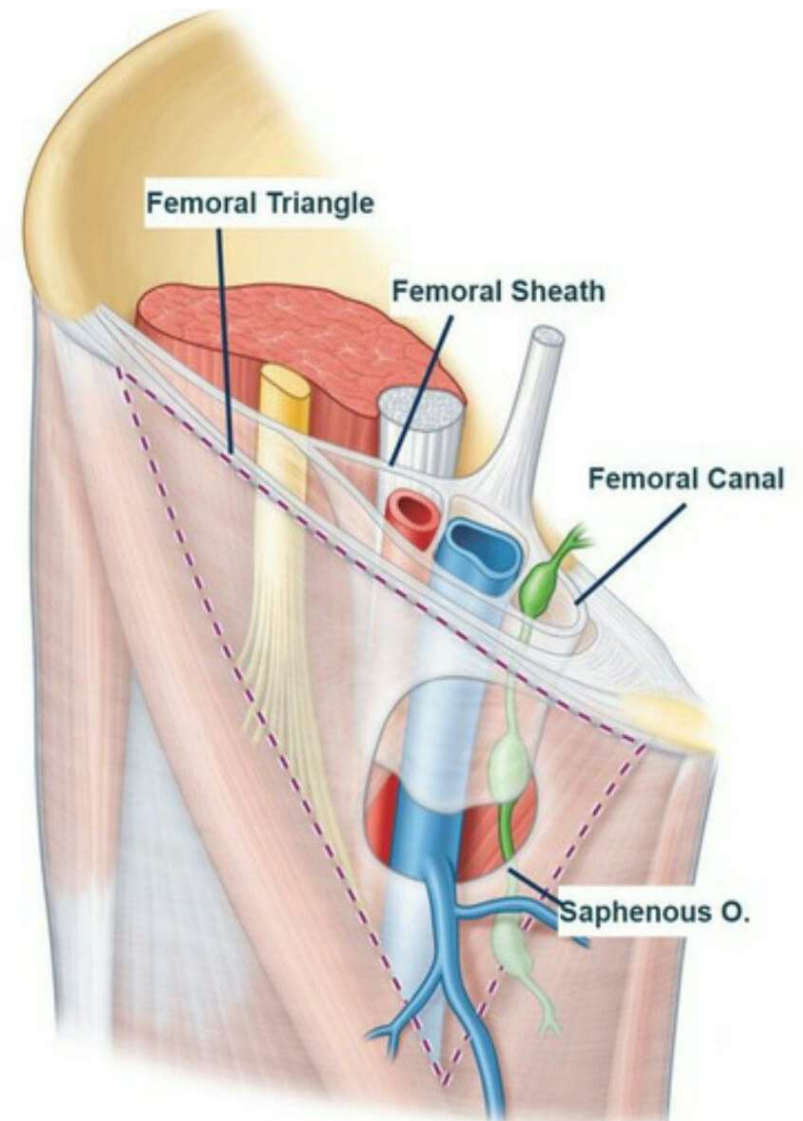
2-Femoral branch of the genitofemoral nerve

2-Intermediate compartment

Femoral vein

3-Medial compartment

Femoral canal



Femoral canal

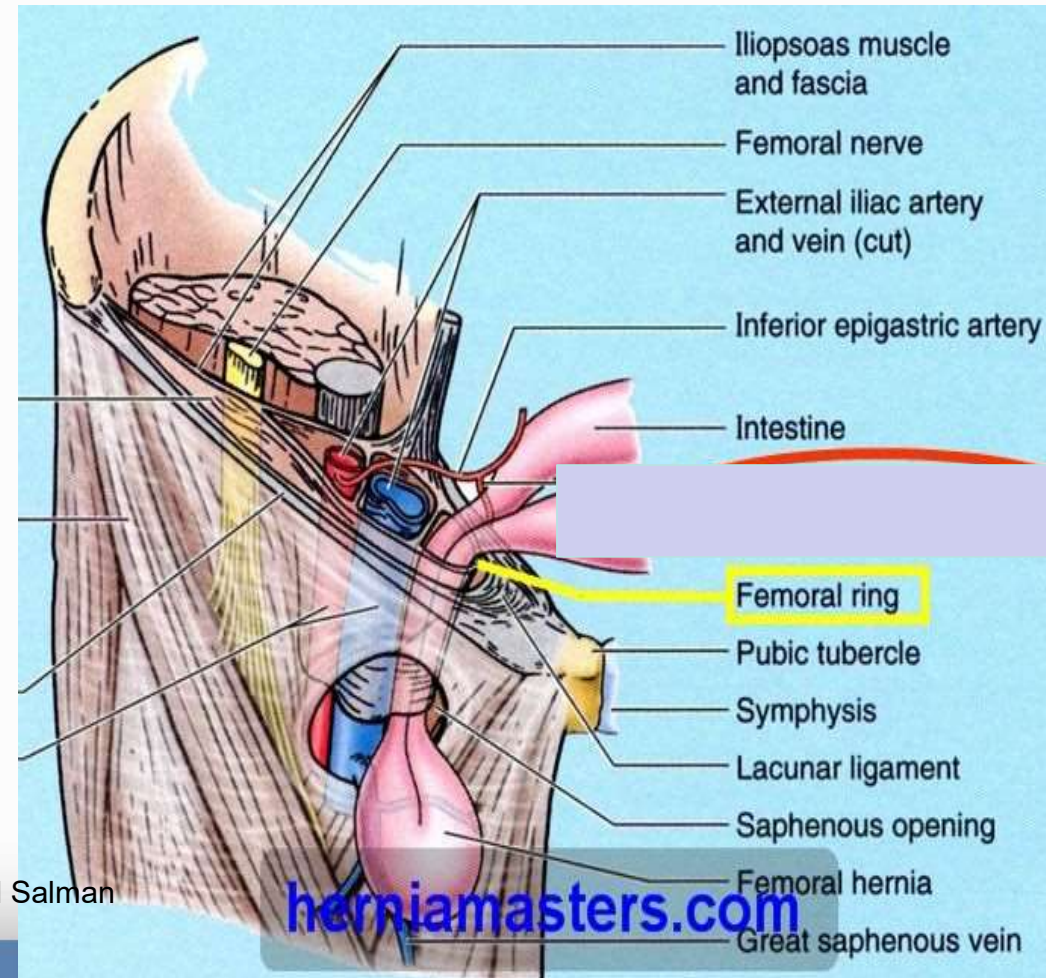
The femoral canal opens in the abdominal cavity by **femoral ring**

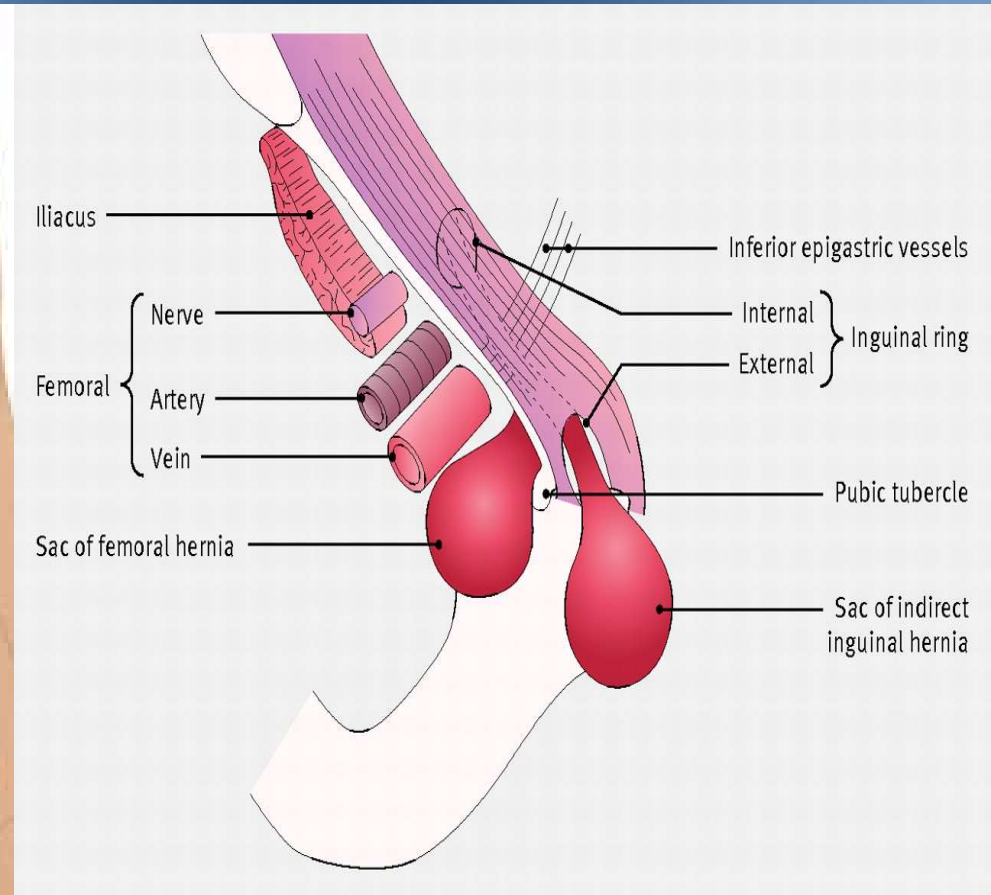
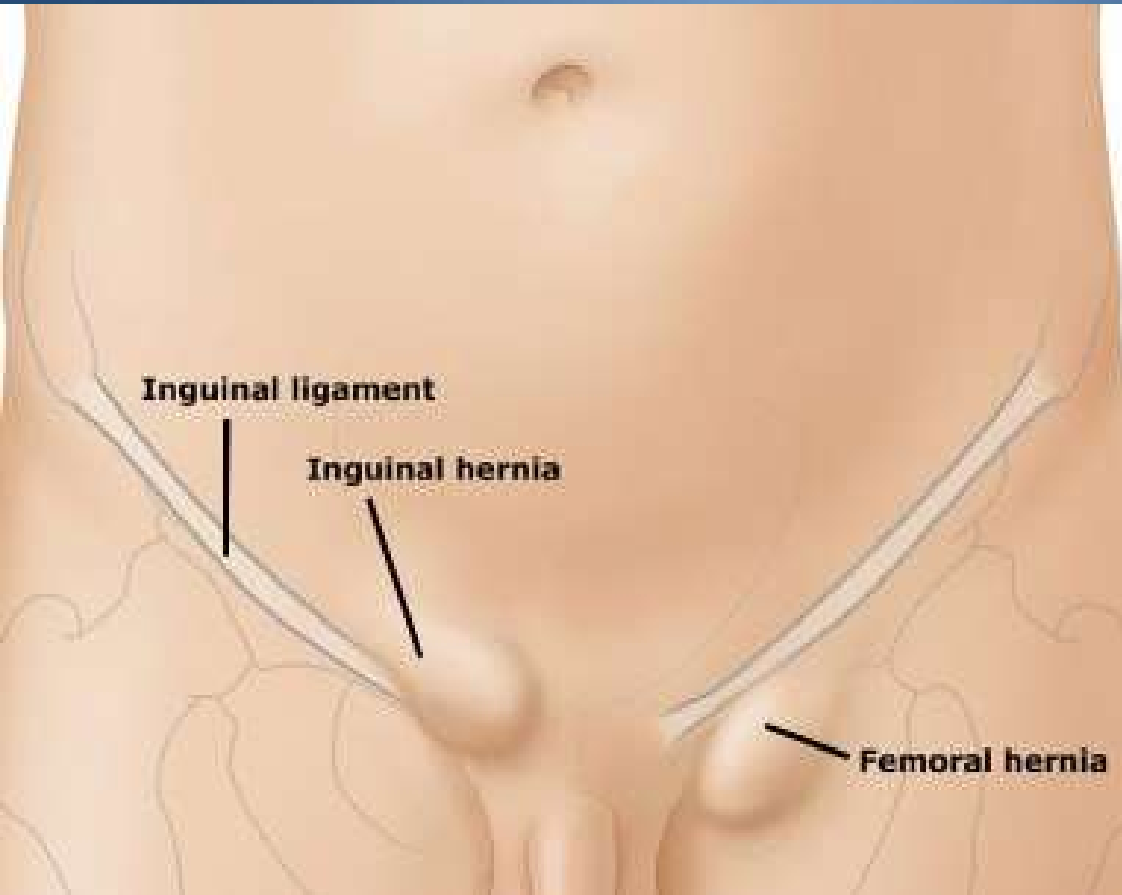
Advantage of the femoral canal

It allows distension of the femoral vein which occurs with the increased venous return during muscular exercise.

Disadvantage of the femoral canal

It gives passage for femoral hernia. The femoral ring is wider in females than male so femoral hernia is common in females





Femoral hernia

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2- The femoral artery

Beginning: in the **midinguinal** point as a continuation of the external iliac artery.

End : At the opening in adductor magnus by becoming the popliteal artery.

Course & relations :It runs in the femoral triangle & adductor canal.

Branches:

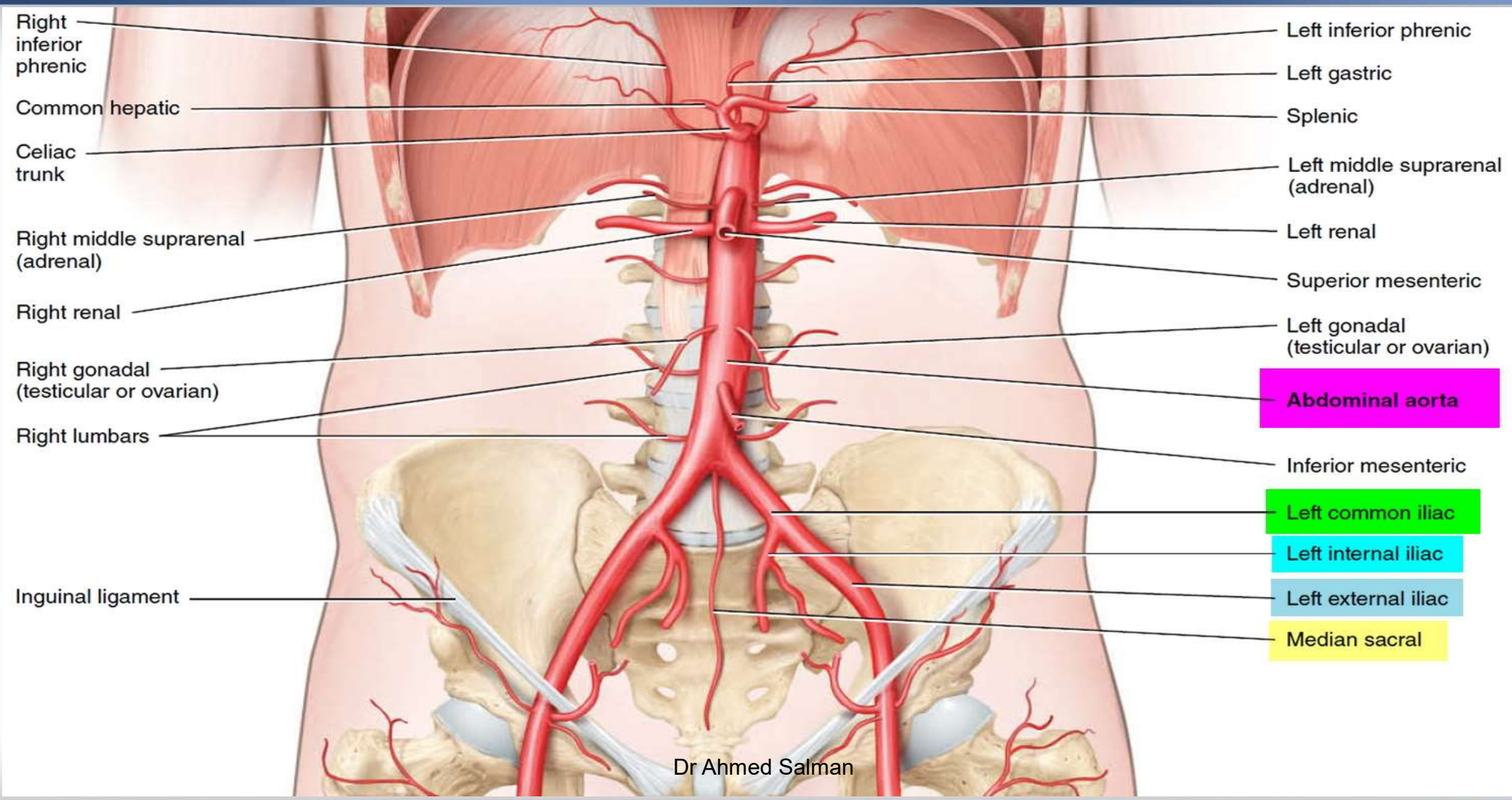
1-Superficial branches:

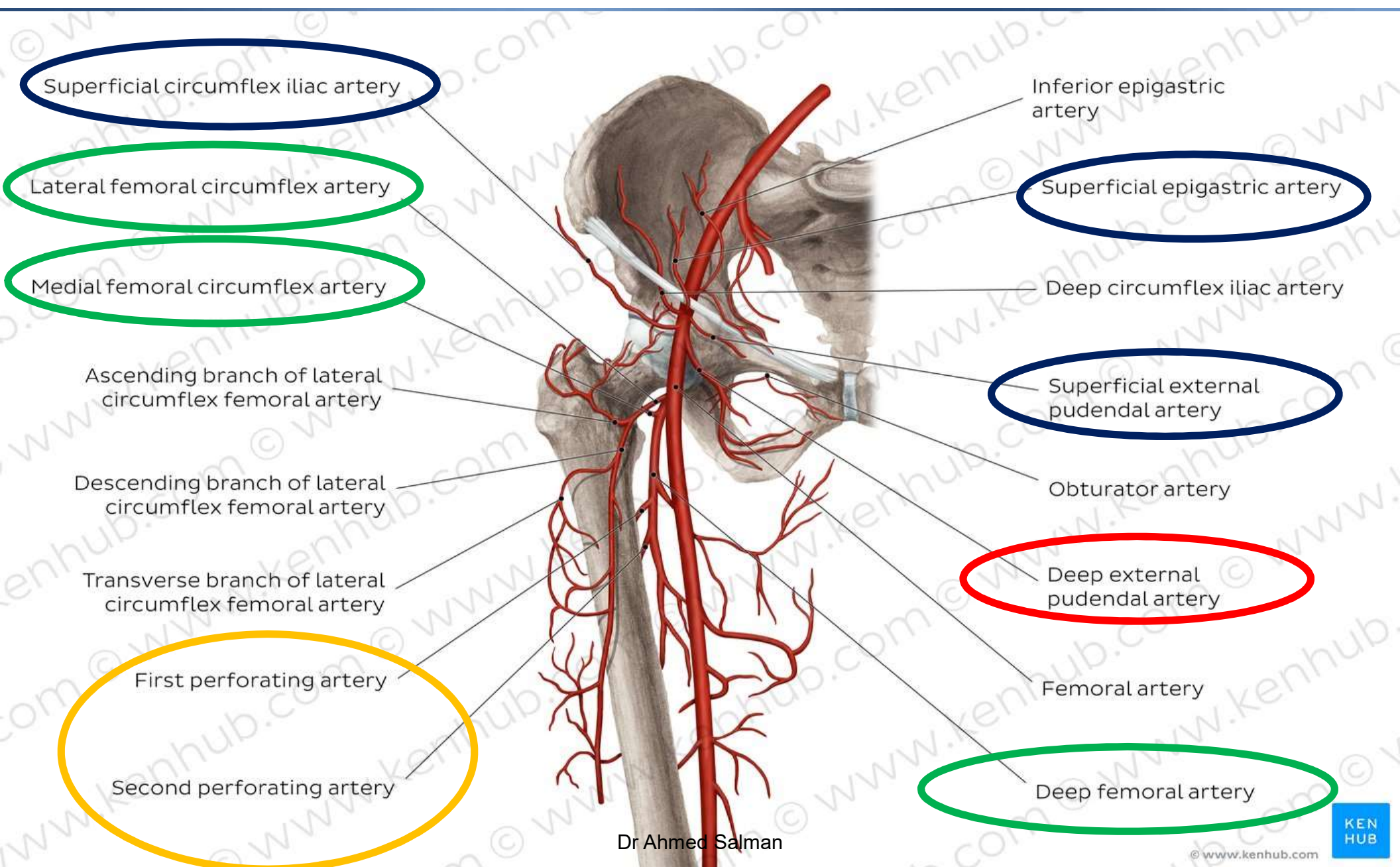
- Superficial epigastric.
- Superficial circumflex iliac
- Superficial external pudendal

2- Deep external pudendal artery

3- Profunda femoris (deep artery of thigh):

4- Descending genicular artery





Superficial circumflex iliac artery

Lateral femoral circumflex artery

Medial femoral circumflex artery

Ascending branch of lateral circumflex femoral artery

Descending branch of lateral circumflex femoral artery

Transverse branch of lateral circumflex femoral artery

First perforating artery

Second perforating artery

Inferior epigastric artery

Superficial epigastric artery

Deep circumflex iliac artery

Superficial external pudendal artery

Obturator artery

Deep external pudendal artery

Femoral artery

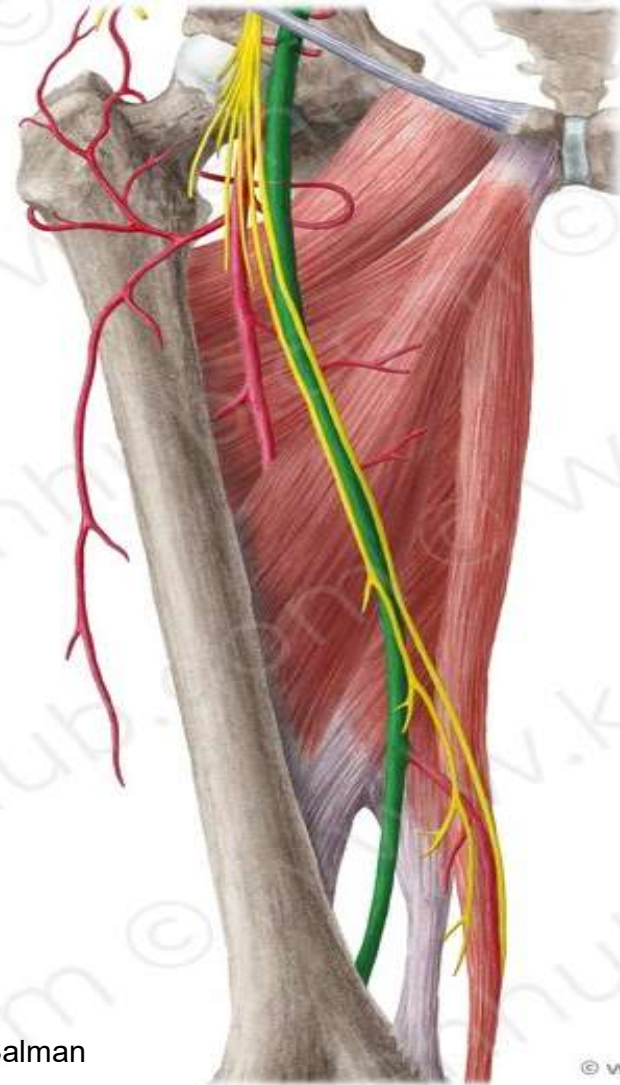
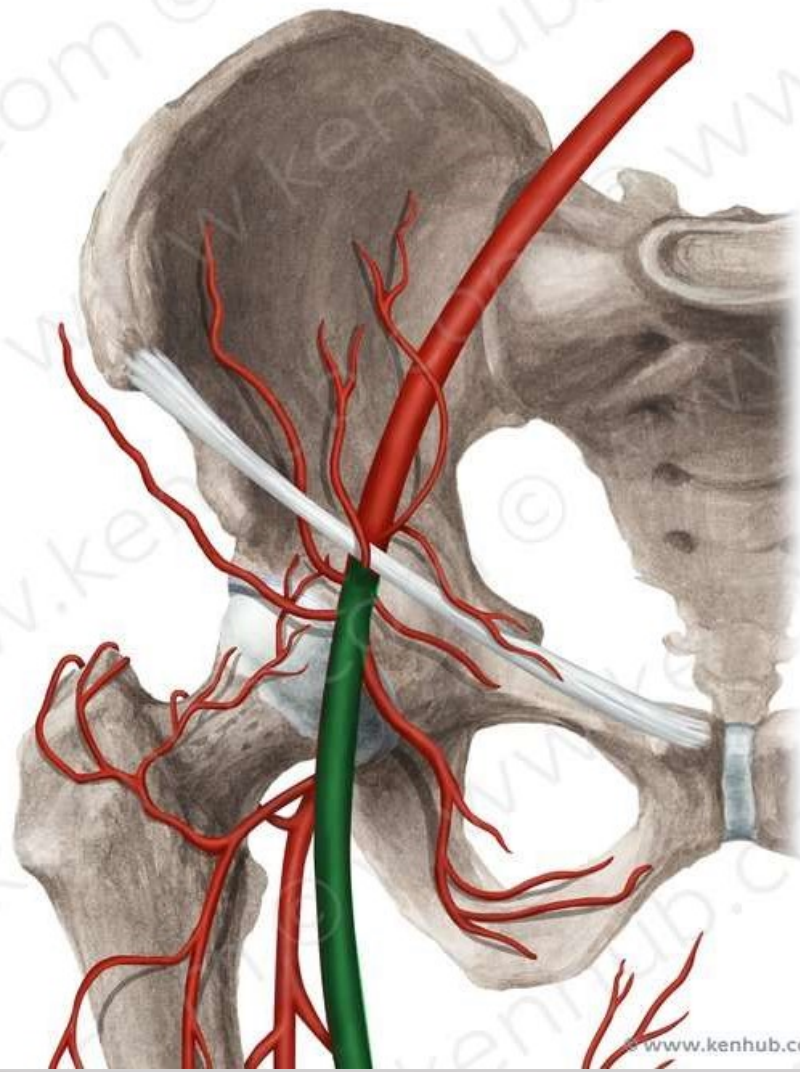
Deep femoral artery

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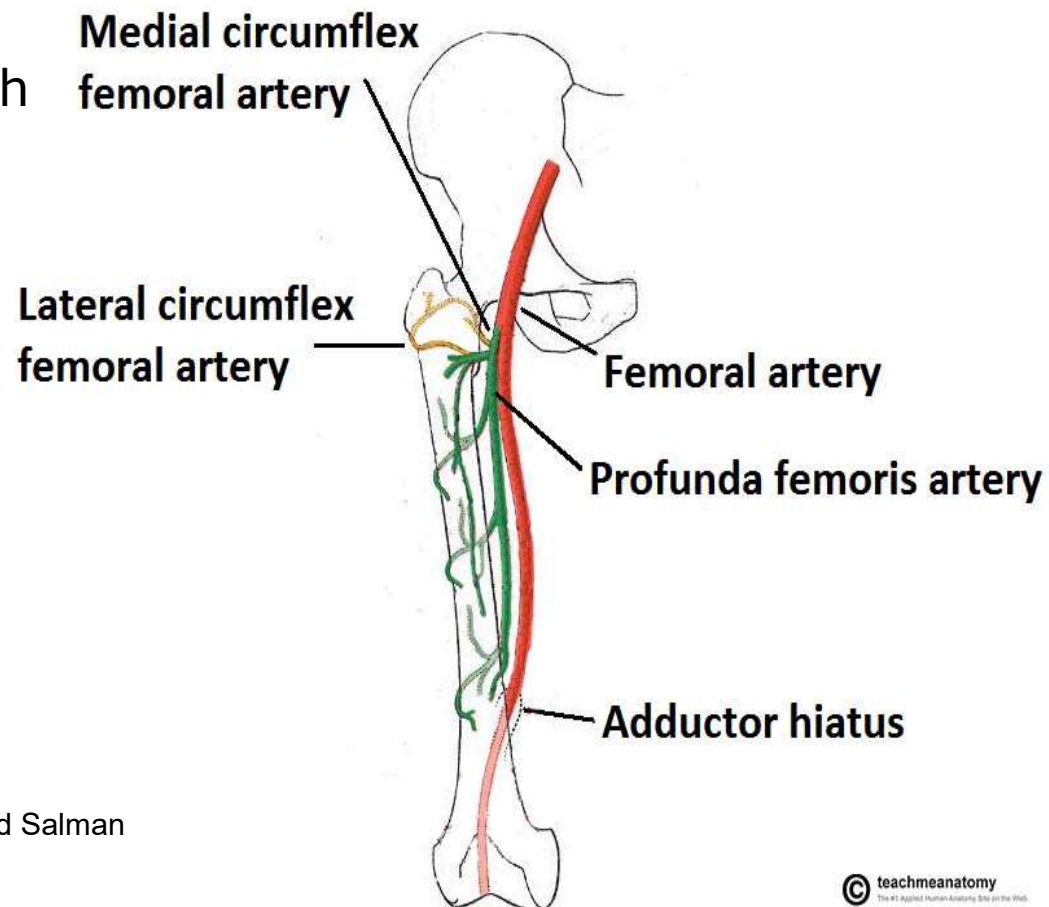


Profunda femoris

Branches :

- 1- Medial circumflex femoral ,It gives acetabular branch to head of the femur
- 2- Lateral circumflex femoral
- 3-Perforating arteries for the back of thigh

- ❑ They are four perforator arteries
- ❑ They perforates insertion of adductor Magnus muscle



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Clinical Anatomy fractures of femur neck

- The **blood supply** to the neck of the femur is **retrograde**, passing from distal to proximal along the femoral neck to the femoral head. This is through the **medial circumflex femoral artery**, which lies directly on the **intra-capsular femoral neck**.
- So intra-capsular fractures of femur neck **disrupt the blood supply** to the femoral head and, therefore, the femoral head will undergo **avascular necrosis** (even if the hip is fixed).
- Patients with a displaced intra-capsular fracture therefore require **joint replacement** , rather than fixation.

3- The Femoral Nerve

It is a mixed nerve

Origin: Arises from L2,3,4.

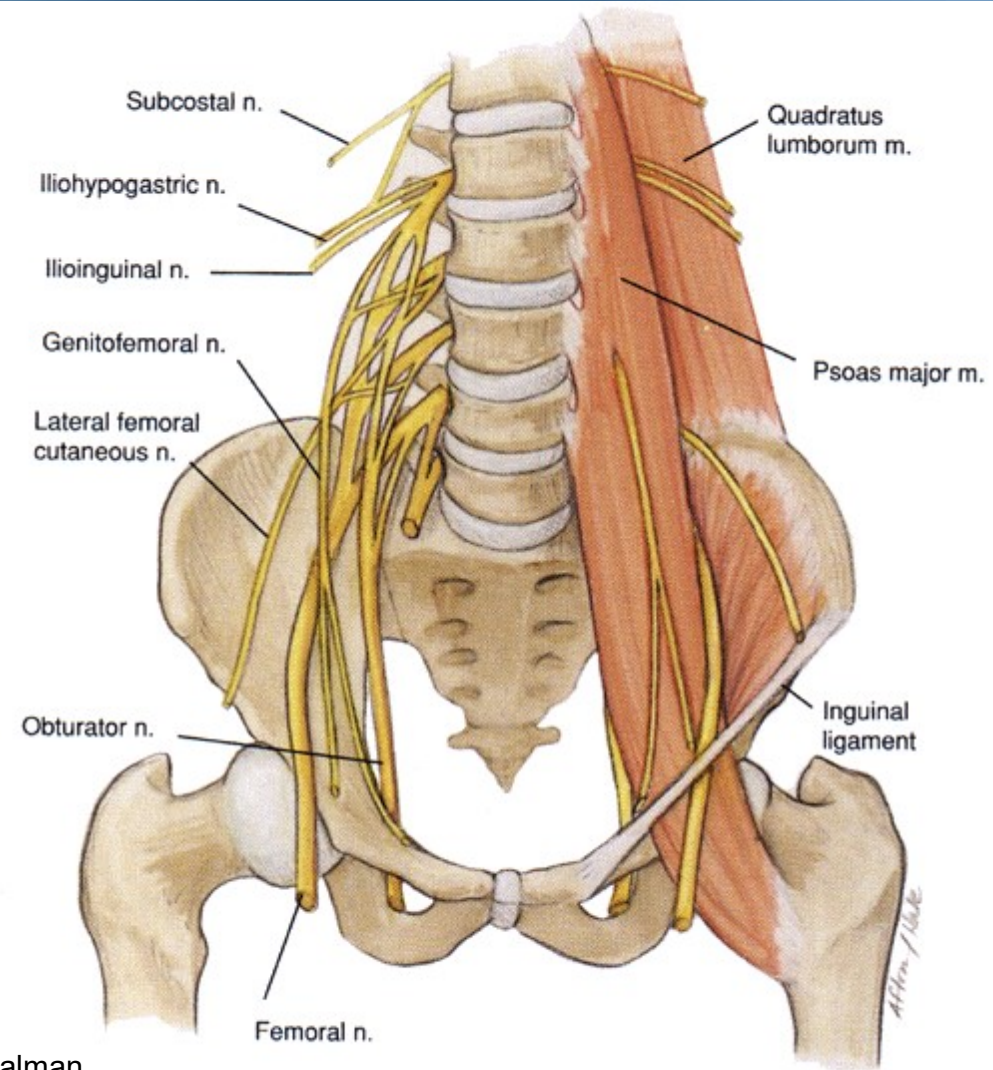
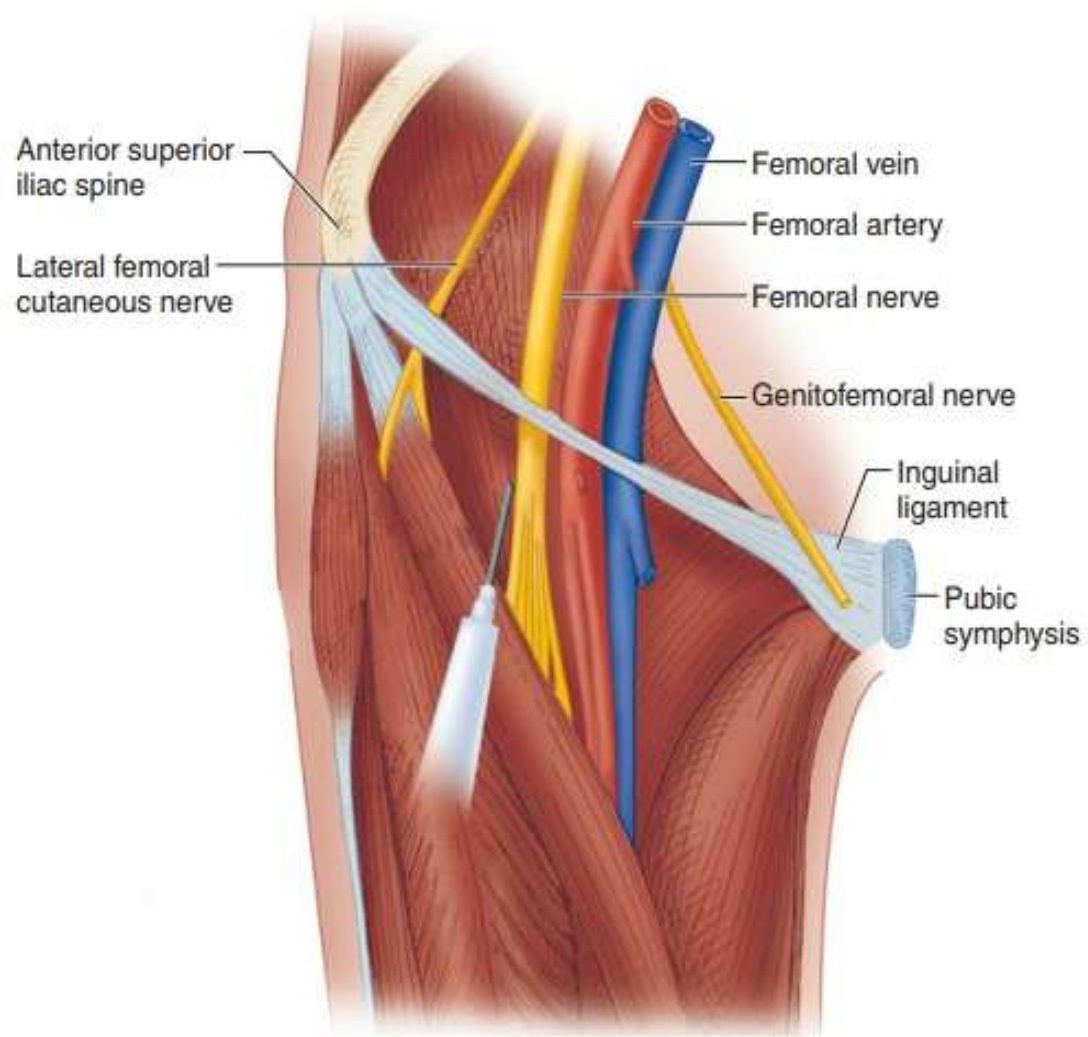
Course and Relations:

- It passes lateral to psoas major
- It enters the thigh behind the **midpoint** of the inguinal ligament.
- It passes outside the femoral sheath lateral to femoral artery .

- Termination :

Saphenous Nerve: It is terminal cutaneous branch supplies skin of medial side of the leg and medial side of the dorsum of the foot as far as the ball of the big

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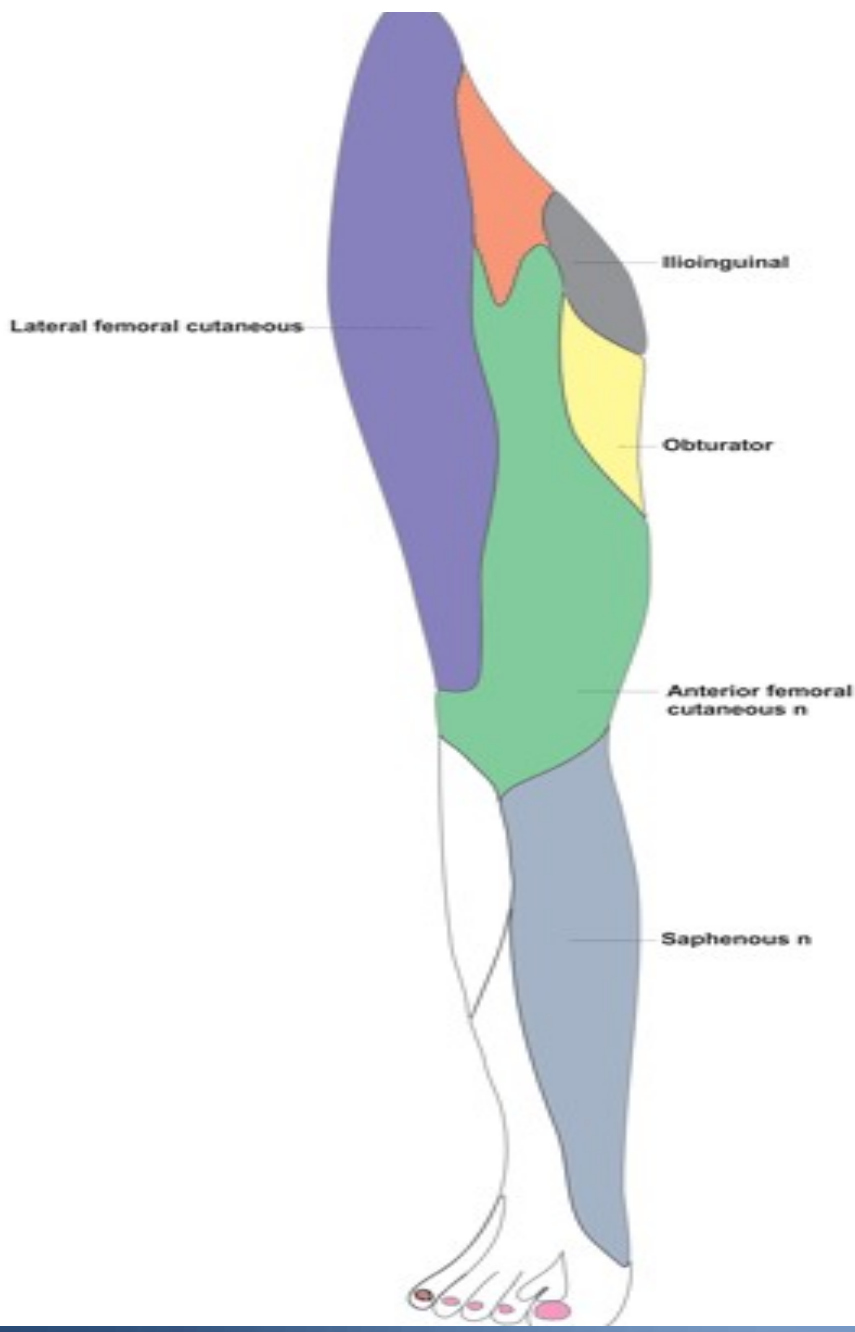
Branches

Muscular

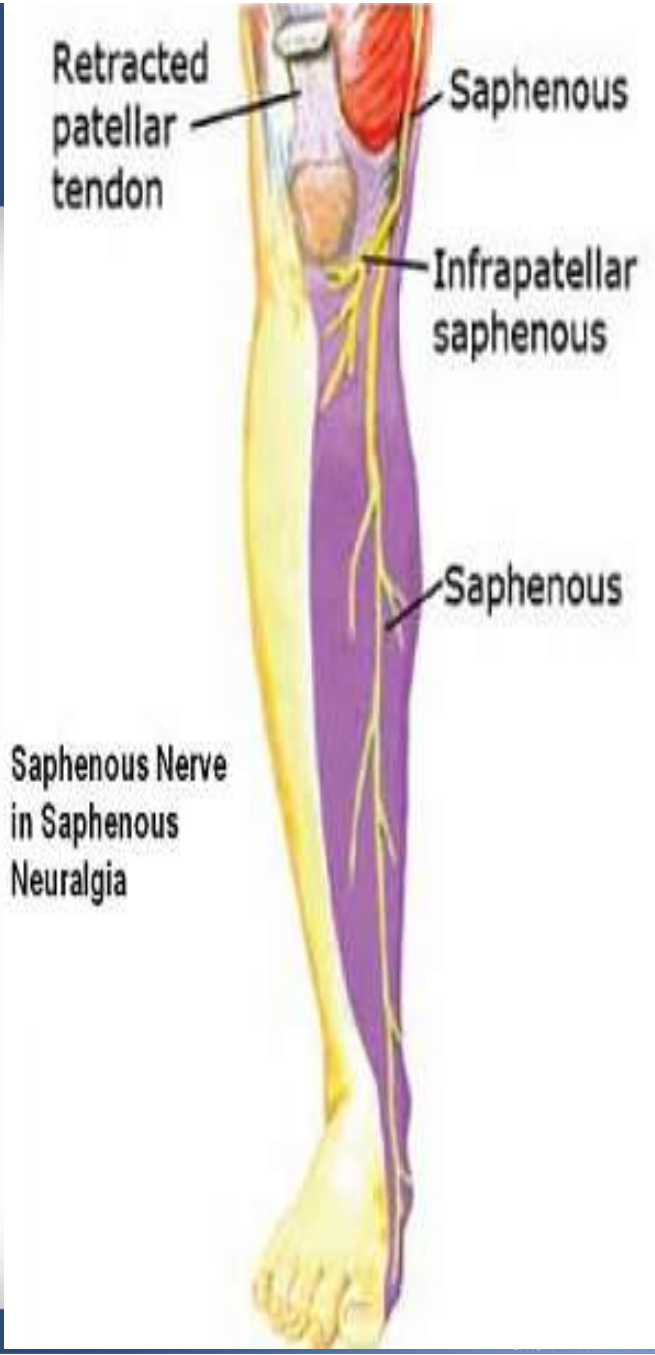
1. Iliacus
2. Pectineus
3. Sartorius
4. Four heads of quadriceps

Sensory

- 1-Intermediate cutaneous N. of the thigh.
2. Medial cutaneous N. of the thigh
- 3- Saphenous nerve
It descends with the great saphenous Vein , in medial side of the leg and medial side of the dorsum of the foot down to the (ball of the big toe).



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Nerve Injury

1. Motor loss:

Paralysis of quadriceps femoris muscle with loss of knee extension

2. Sensory loss:

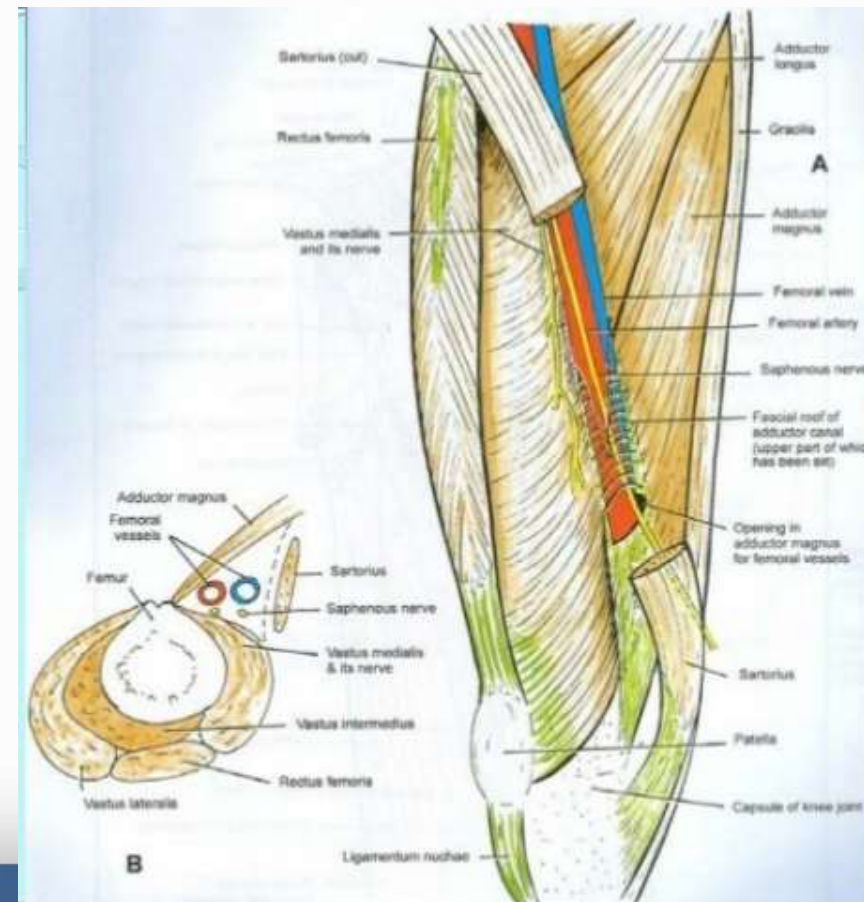
Loss of sensation on the anterior and medial sides of the thigh, the medial side of the leg and medial side of the dorsum of the foot as far as the ball of the big

Adductor (Subsartorial) canal

Location : It occupies the medial side of the middle 1/3 of the thigh.

Boundaries:

- 1. Anterolaterally:** vastus medialis muscle.
- 2. Anteromedially:** sartorius muscle.
- 3. Posteriorly:** adductor longus above and adductor magnus below.



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Adductor (Subsartorial) canal

Beginning

At the apex of the femoral triangle.

Termination

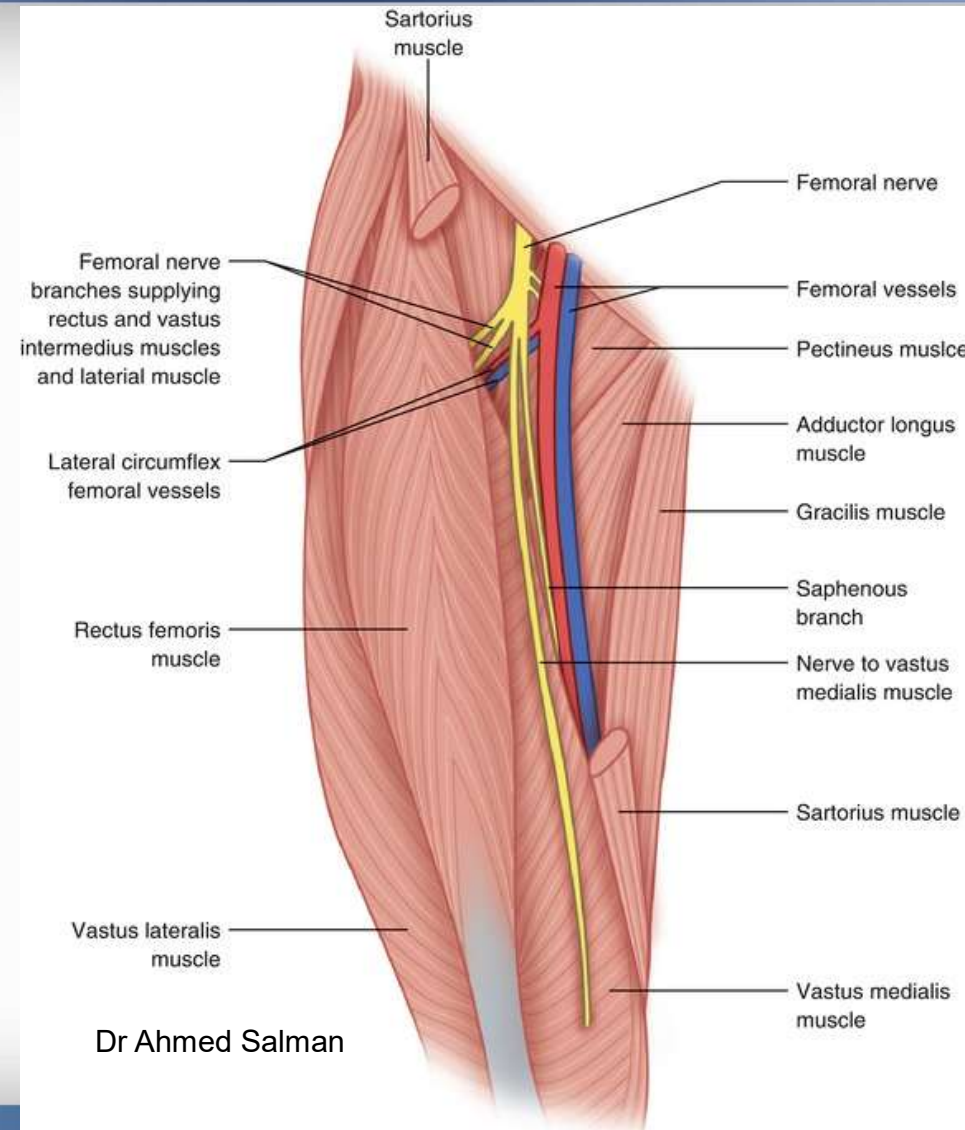
At opening of adductor magnus

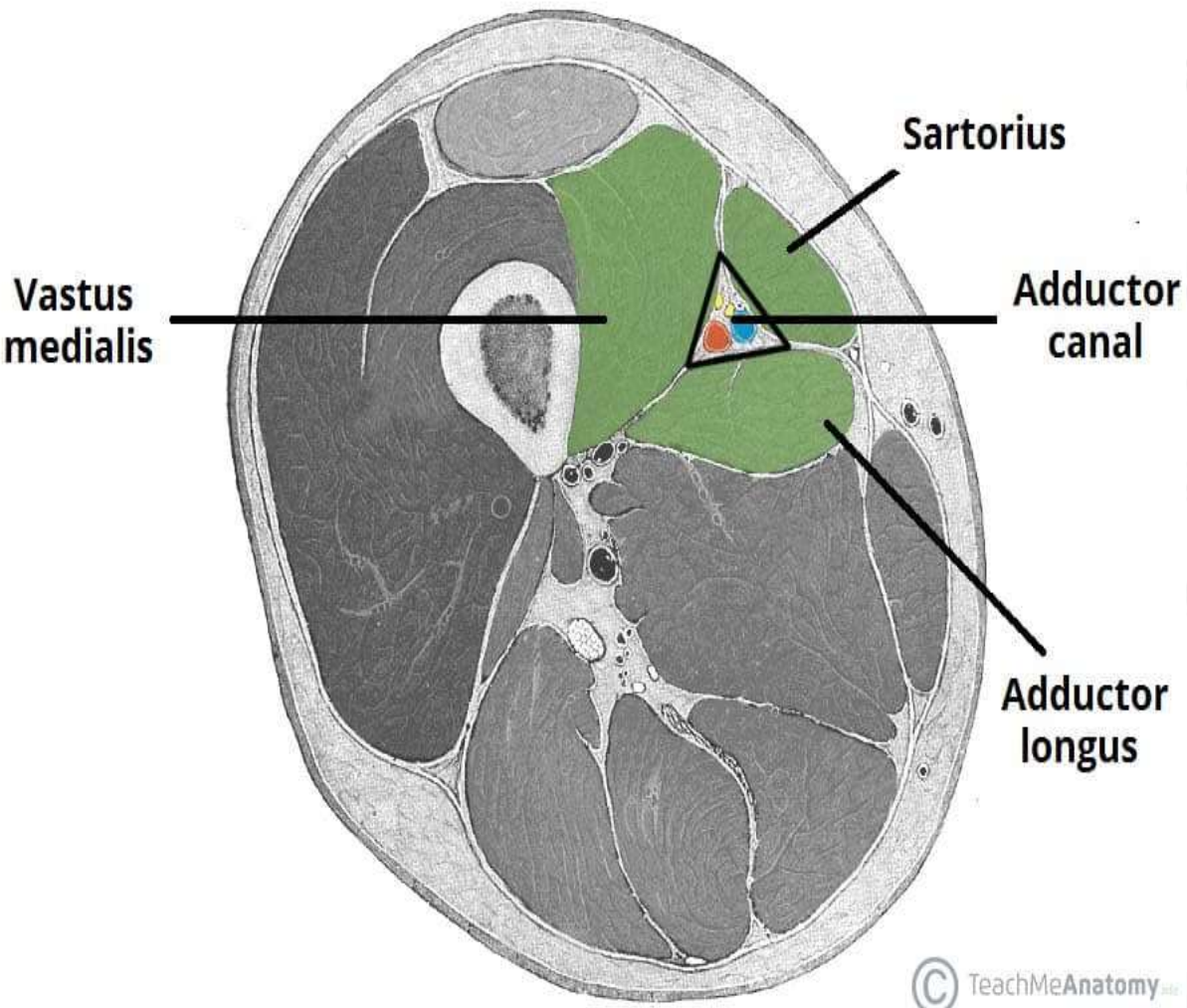
Where it become continuous with popliteal fossa

Contents :

1. Femoral A
2. Femoral V.
3. Saphenous N.
- 4- Nerve to vastus medialis

Mention structures are passing through opening of adductor magnus ??





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