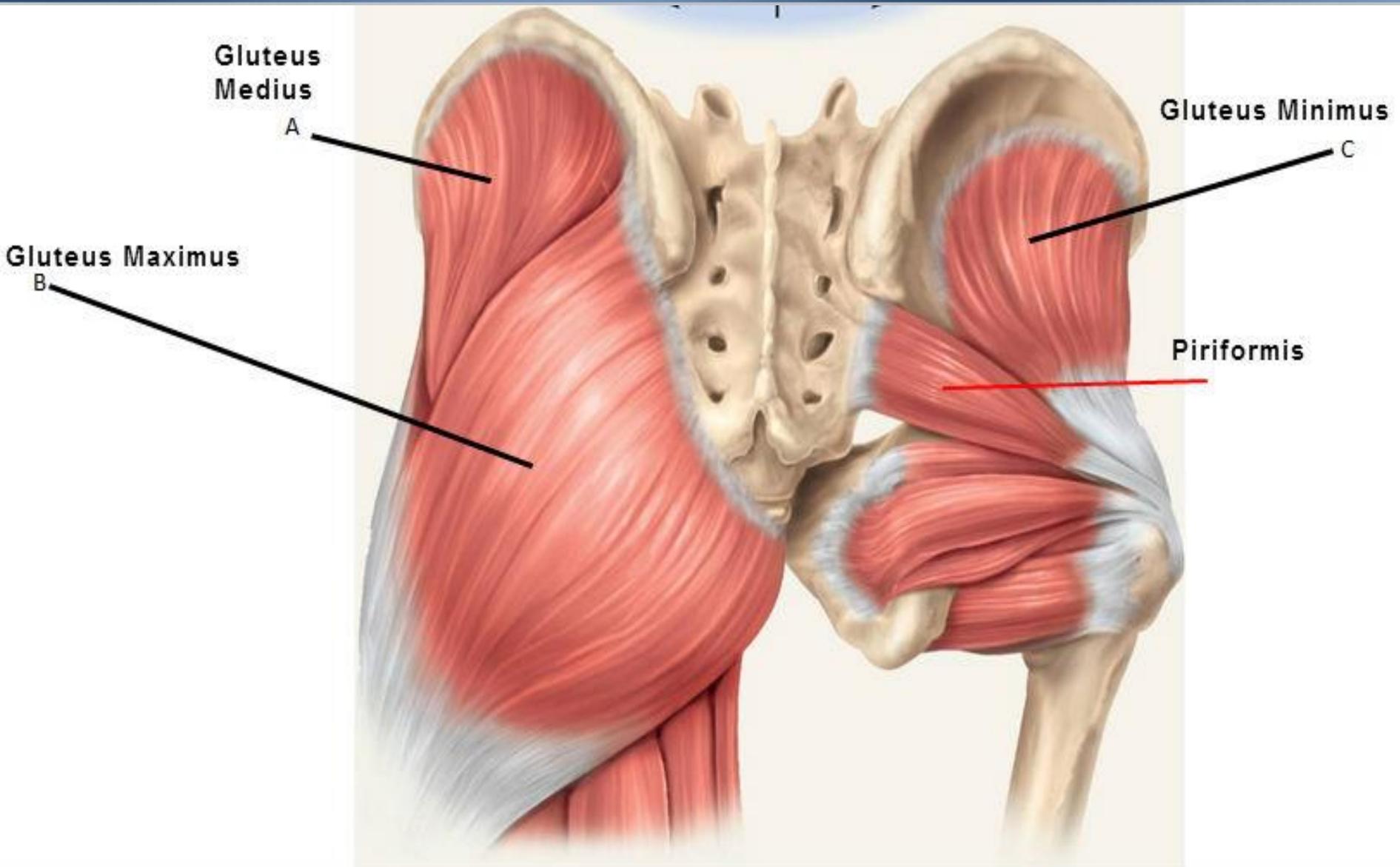


GLUTEAL REGION AND BACK OF THIGH

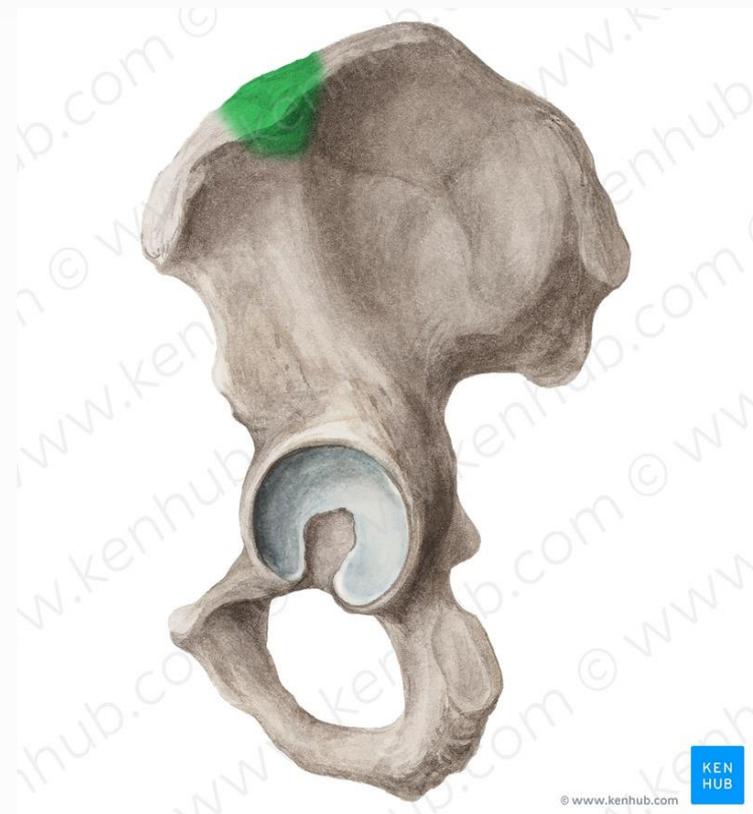
Dr. Maha ELBeltagy

Associate Professor of Anatomy, The University Of Jordan

Gluteal Region



Iliotibial tract



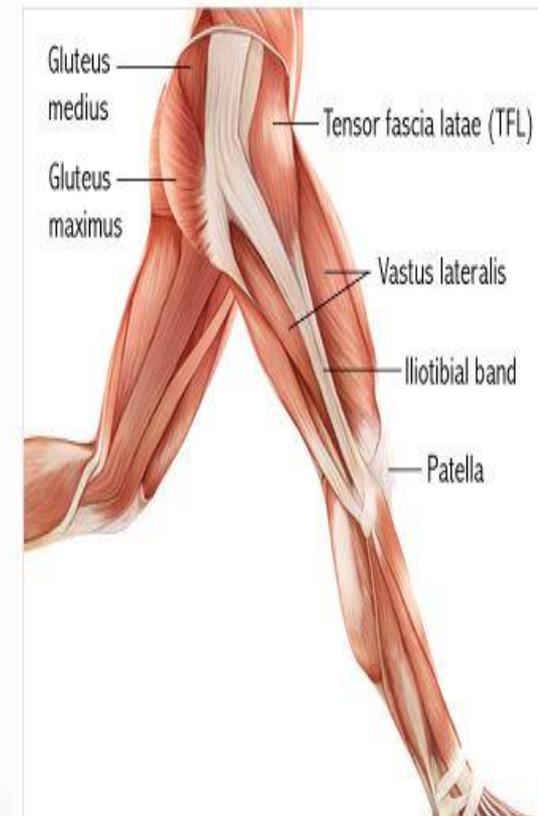
Iliotibial tract

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

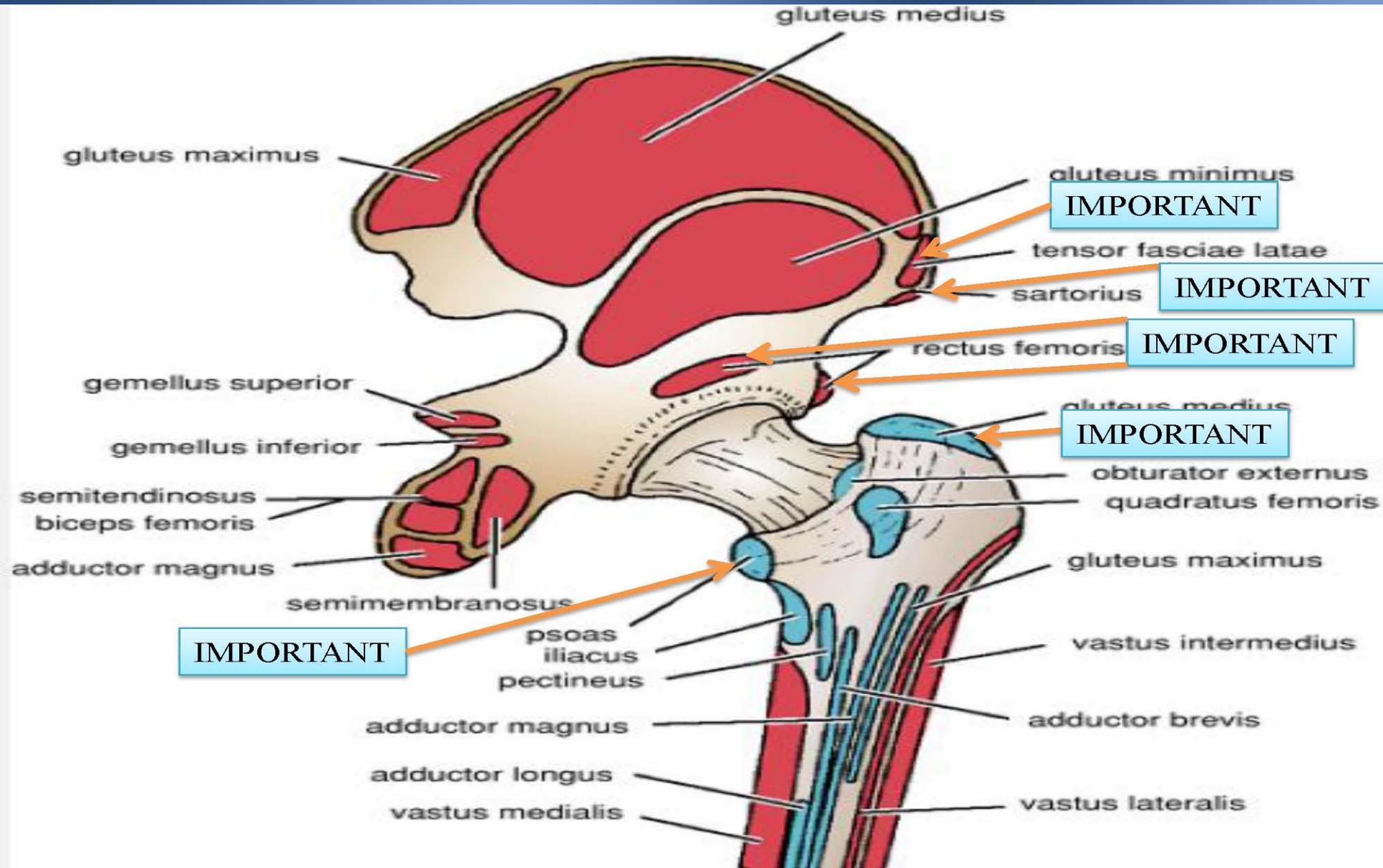
Iliotibial Band Syndrome (ITBS)

- 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

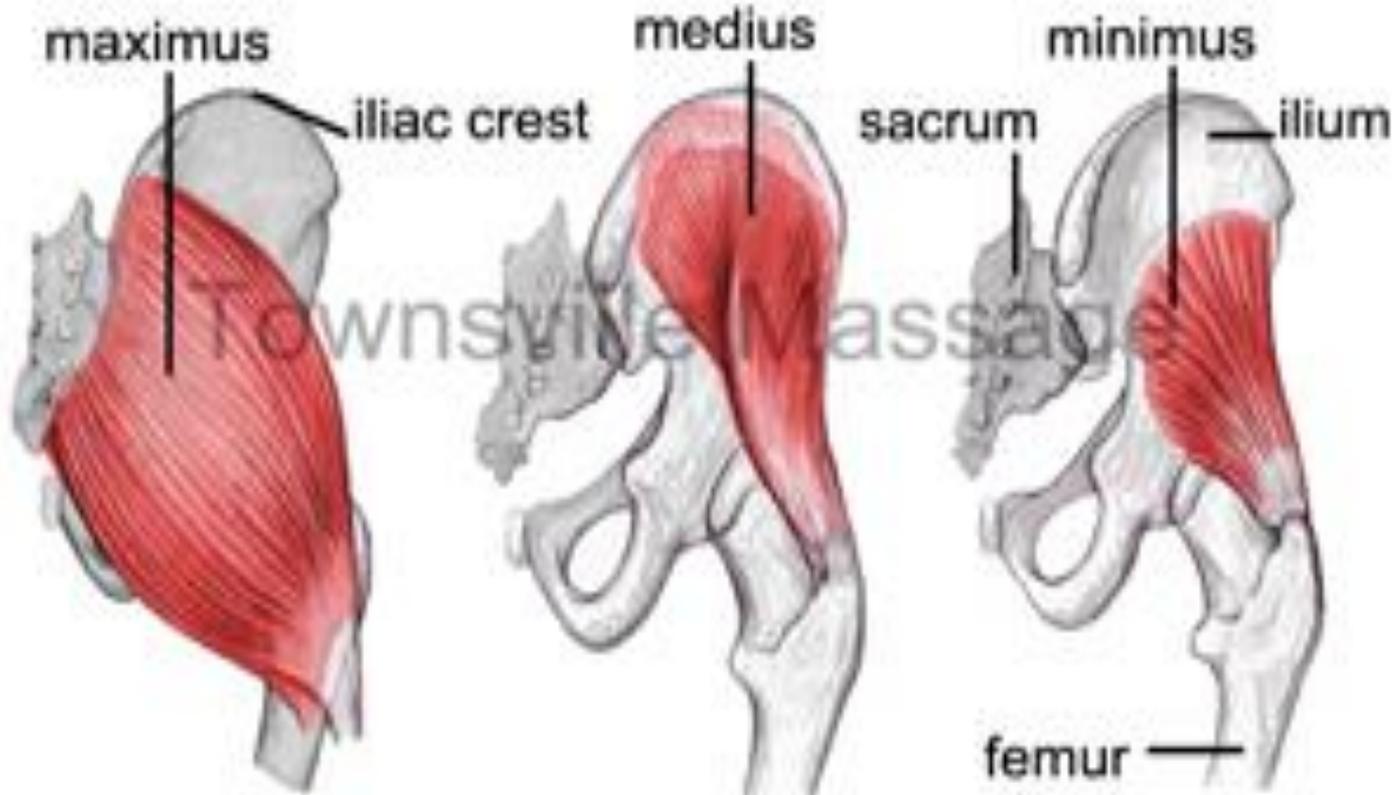


I- Muscles

1. Gluteus maximus
2. Gluteus medius
3. Gluteus minimus
4. Tensor fascia latae



Gluteal Muscles

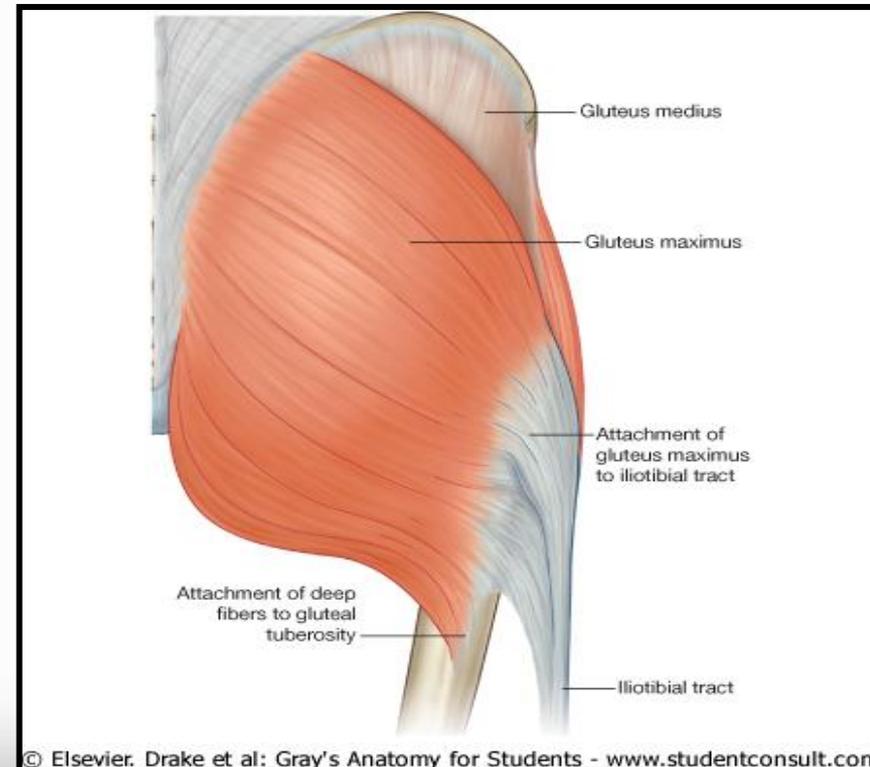


All are innervated by the **Superior** gluteal nerve
EXCEPT
Gluteal maximus by inferior gluteal nerve

Gluteus maximus

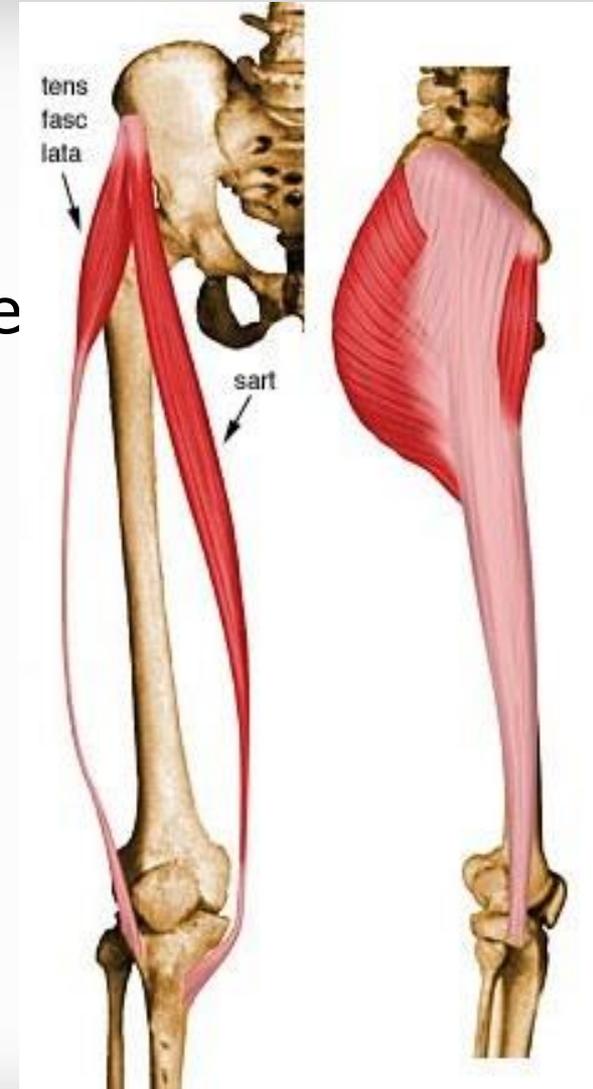
- ✓ **Origin** : Outer surface of Ilium, sacrum and coccyx
- ✓ **Insertion** :
Gluteal tuberosity of femur
iliotibial tract
- ✓ **Nerve Supply**:
Inferior gluteal nerve
- ✓ **Action** :
Extends and lateral rotation
of thigh.

Extends the knee (through
iliotibial tract)



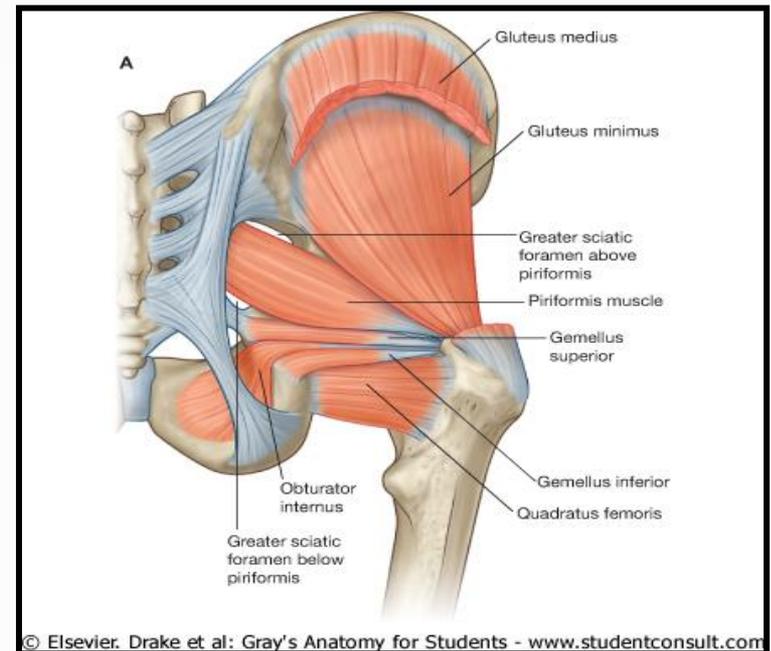
Tensor fascia latae

- ✓ Origin: Iliac crest
- ✓ Insertion : iliotibial tract
- ✓ Nerve supply : Superior gluteal nerve
- ✓ Action : Helps gluteus maximus in extending the knee joint



Gluteus medius and minimus

- ✓ Origin: Outer surface of Ilium
- ✓ Insertion : Greater trochanter of femur
- ✓ Nerve supply : Superior gluteal nerve
- ✓ Action :
 - ❖ Abduction
 - ❖ Prevent tilting of the pelvis when the opposite limb is raised





Clinical Anatomy:

1. In **unilateral paralysis** of Gluteal medius and minimus, the patient exhibits a lurching gait with a positive Trendelenburg's sign.

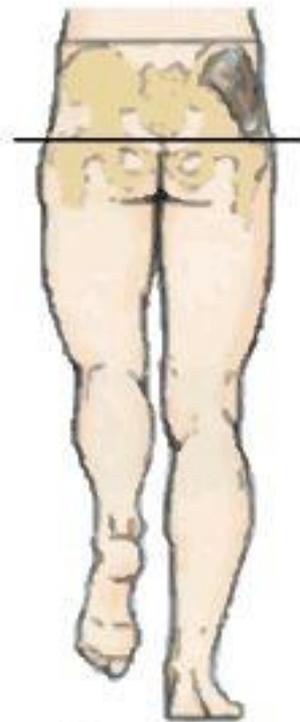
In standing on the affected side, the pelvis will tilt towards the unsupported side.

2. In **bilateral paralysis** of Gluteal medius and minimus, the patient exhibits a waddling gait in which the trunk is flexed from side to side with each step during walking.

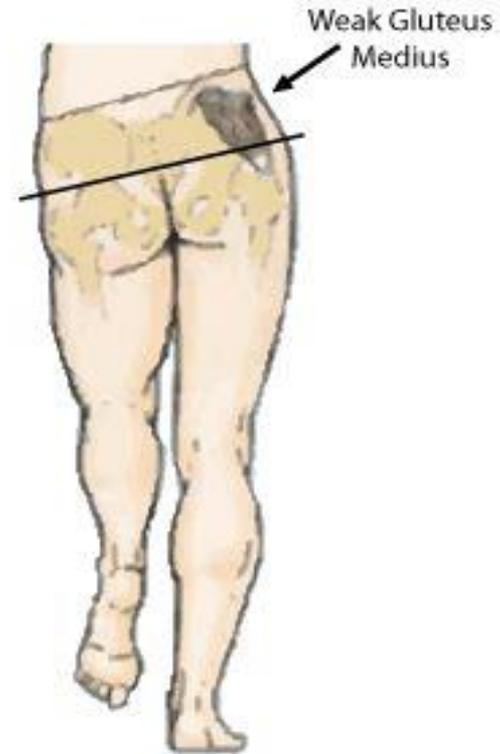
On standing on the diseased side the sound side sags

Paralysis of gluteus medius and minimus

On standing on the diseased side the sound side sags



Normal

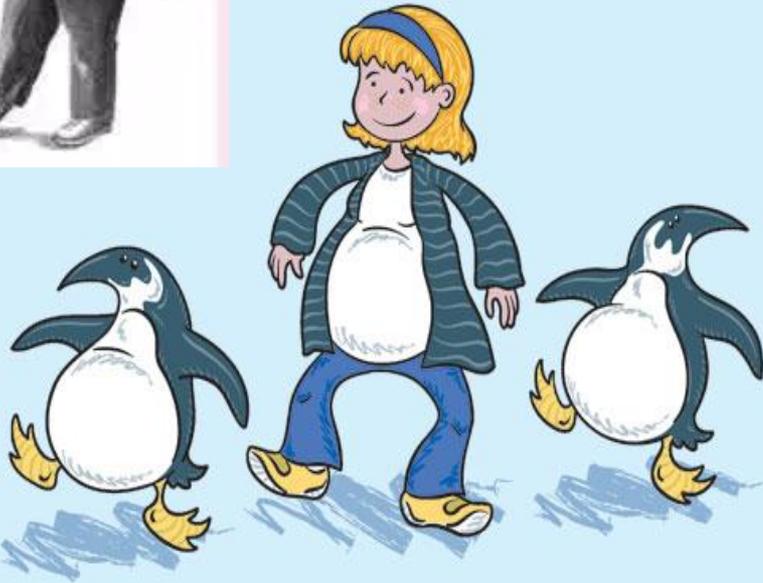


Trendelenburg Sign
Drop of pelvis when lifting leg
opposite to weak gluteus medius

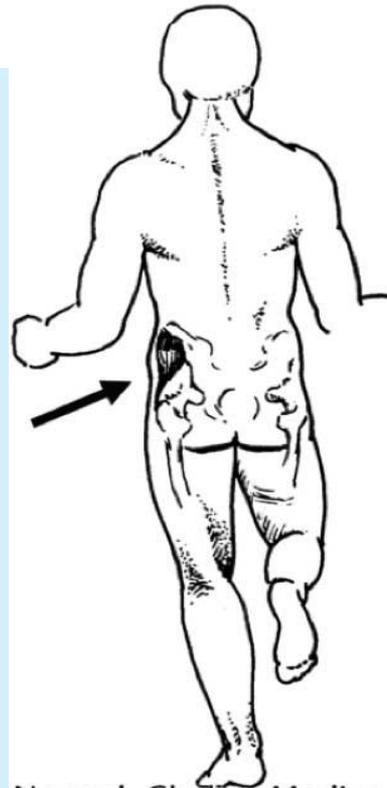
Trendelenburg test

Injury of superior gluteal nerve

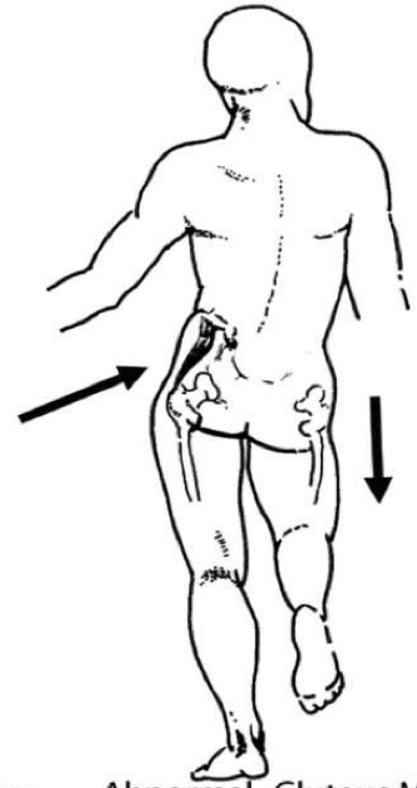
Unilateral injury of superior gluteal nerve leads to lurching gait.
Bilateral injury of superior gluteal nerve leads to waddling gait.



Trendelenberg Test



Normal- Gluteus Medius contracts
Opposite hip is elevated



Abnormal- Gluteus Medius weak-
opposite hip drops

Lateral rotators of the thigh

1-Piriformis

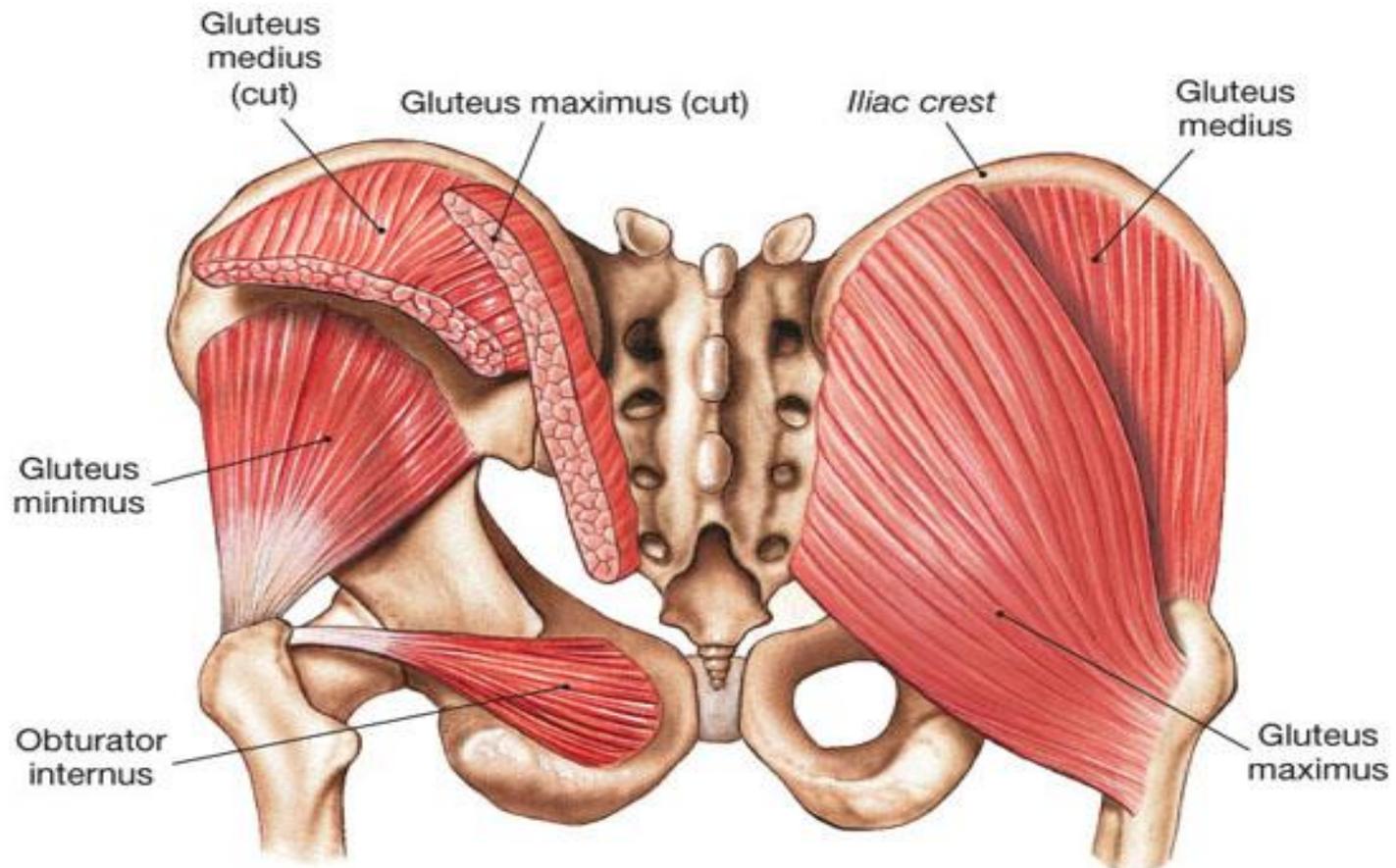
2-Obturator internus

3-Superior gemillus

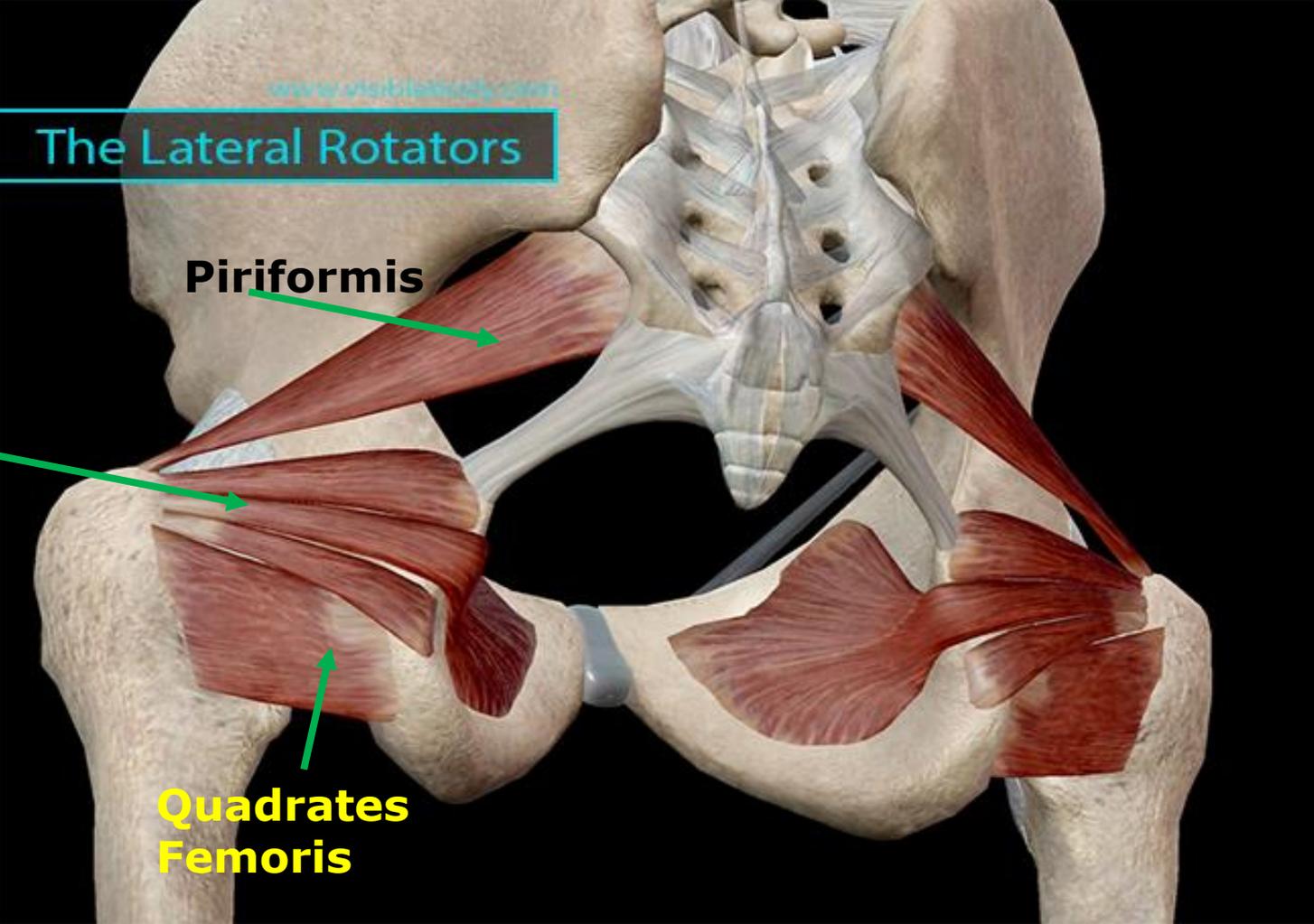
4-Quadratus femoris

5-Inferior gemillus

6-Obturator externus



(c) Gluteal and lateral rotators, posterior view



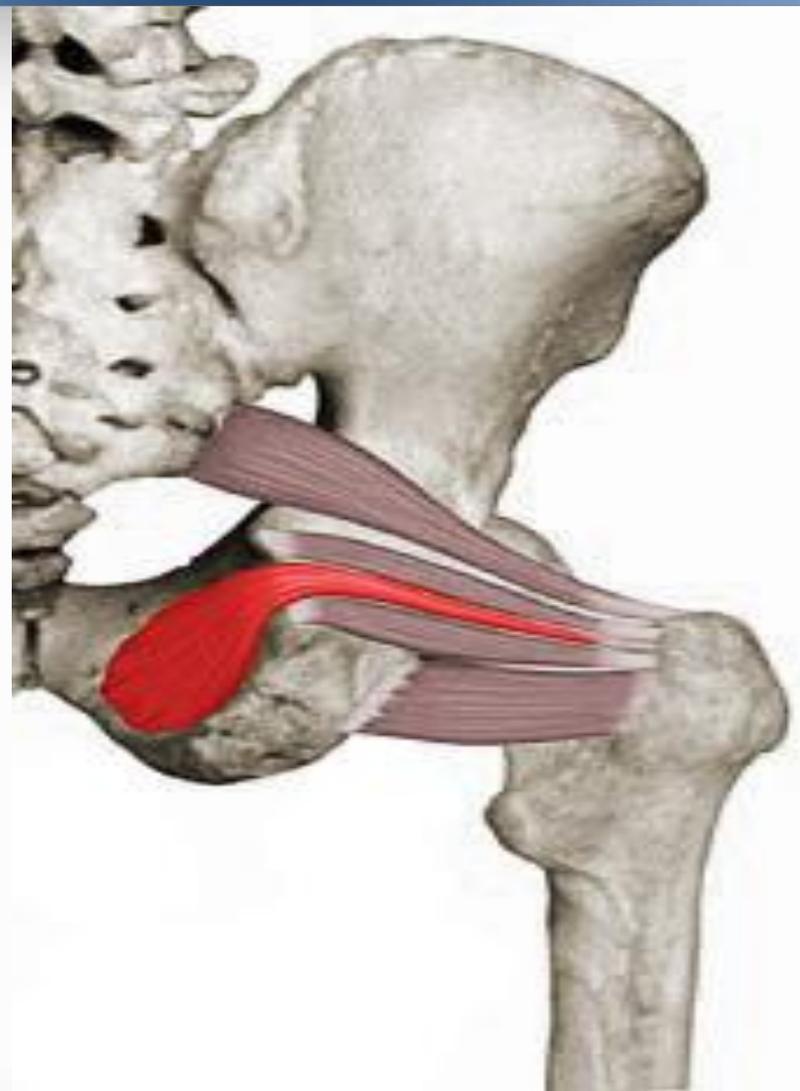
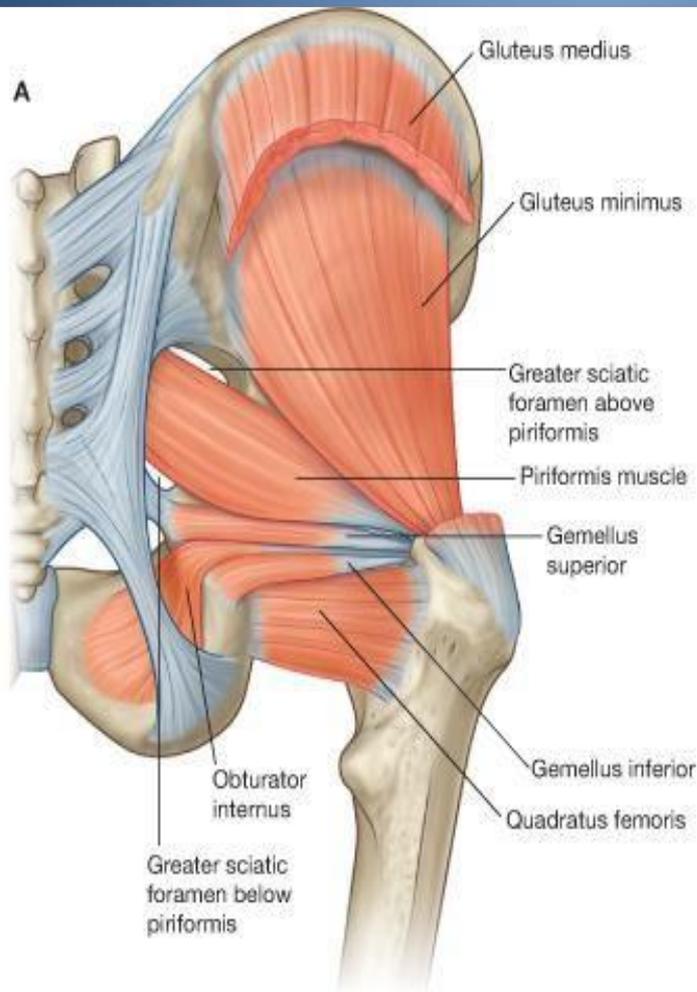
The Lateral Rotators

Piriformis

Obturator internus and two Gemelli

Quadratus Femoris

Lateral Rotators



Lateral rotators of the thigh

1-Piriformis

N.S: S1,S2

2-Obturator internus

N.S: Nerve to obturator internus

3-Superior gemillus

N.S: Nerve to obturator internus

4-Quadratus femoris

Nerve to quadratus femoris.

5-Inferior gemillus

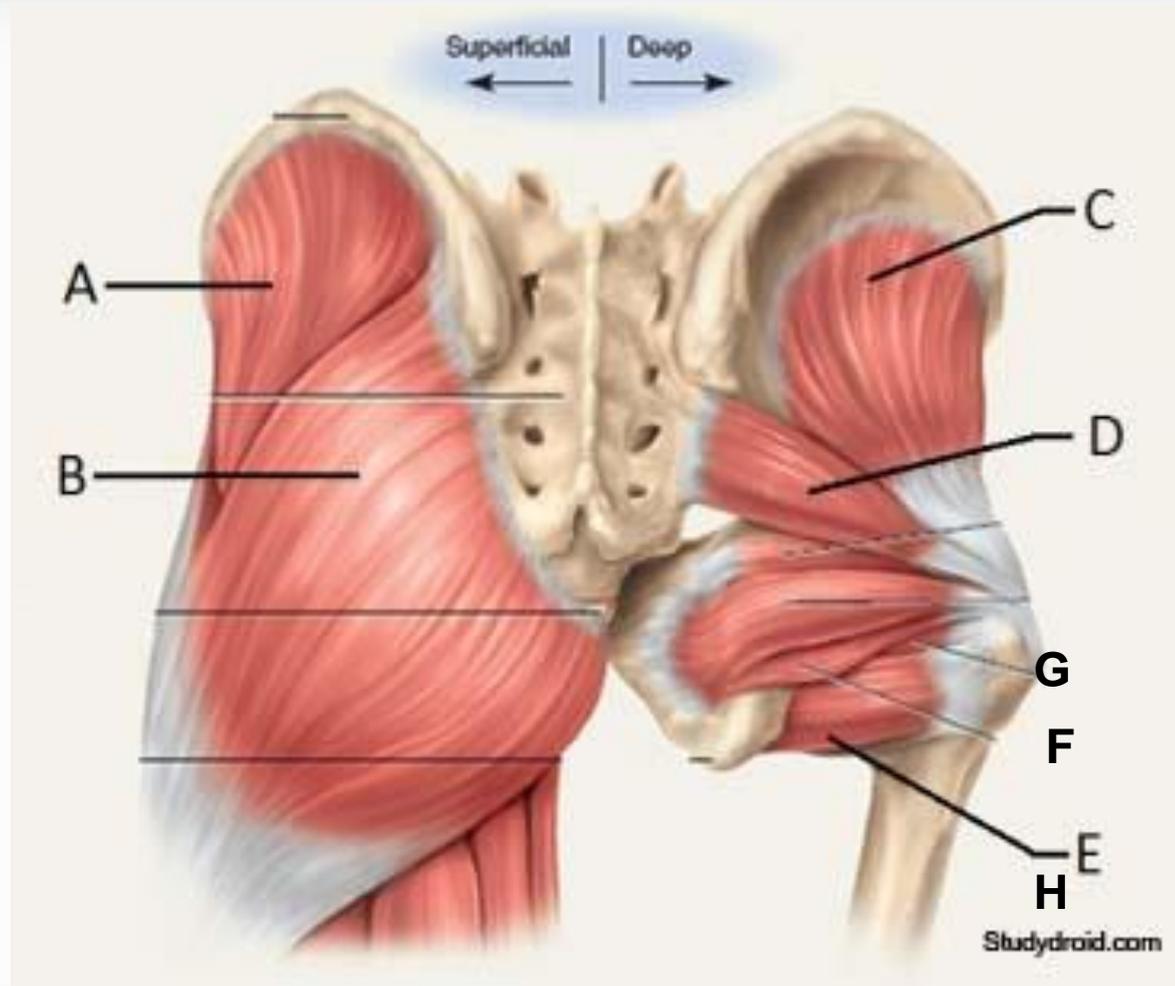
N.S: Nerve to quadratus femoris.

6-Obturator externus:

N.S: Obturator nerve

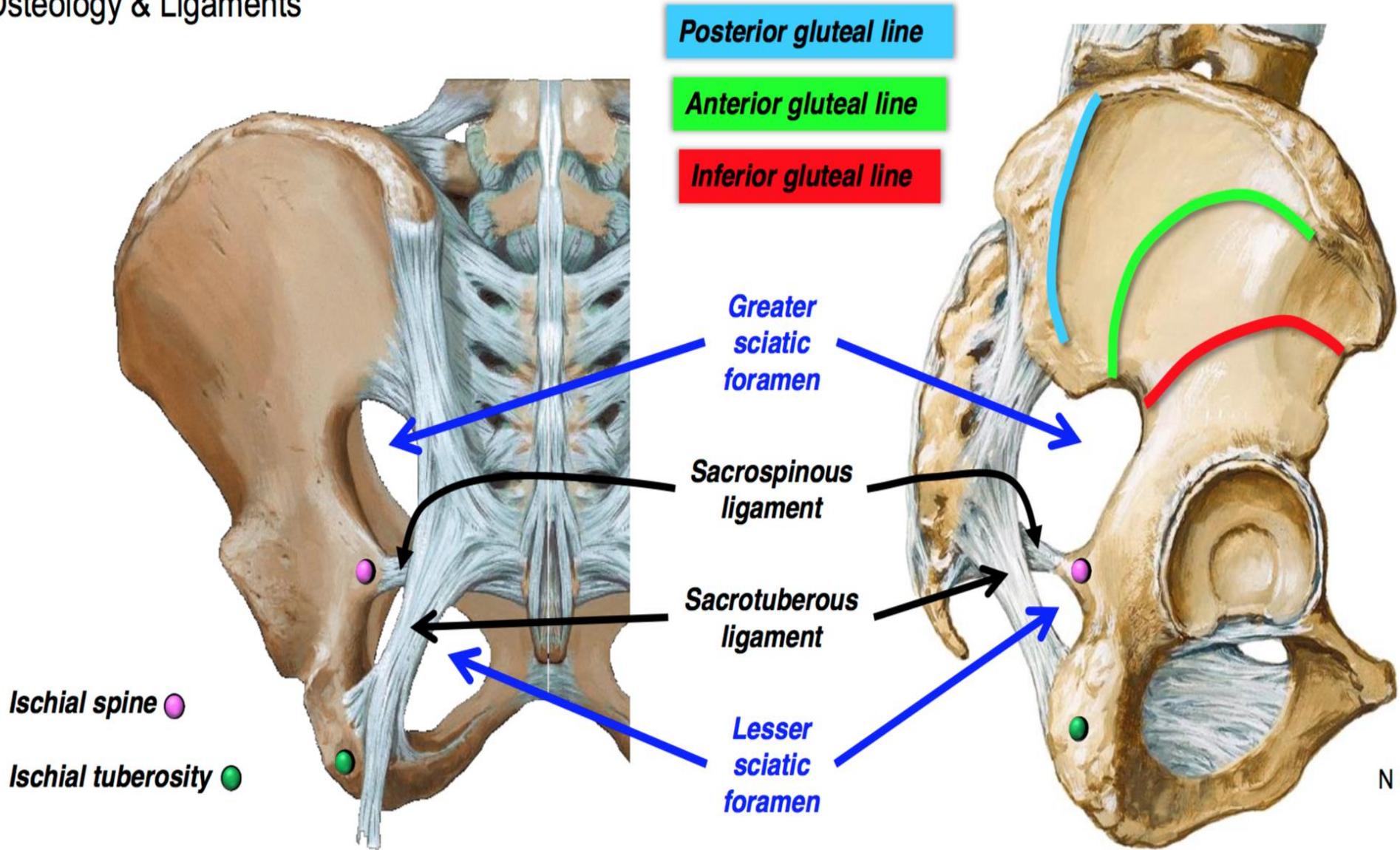
Identify the marked muscles and their nerve supply

A-
B-
C-
D-
E-
F-
G-
H-

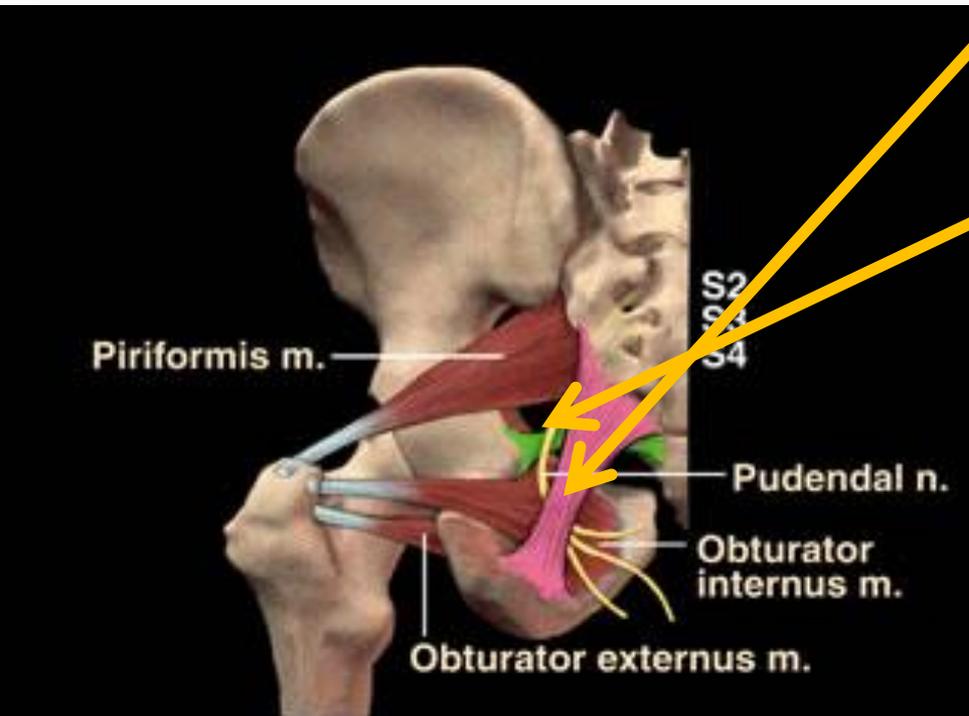


Greater and lesser sciatic foramens

Osteology & Ligaments



Greater and lesser sciatic foramens



Sacrospinous ligament

Between ischial spine and back of sacrum & coccyx

Sacrotuberous ligament

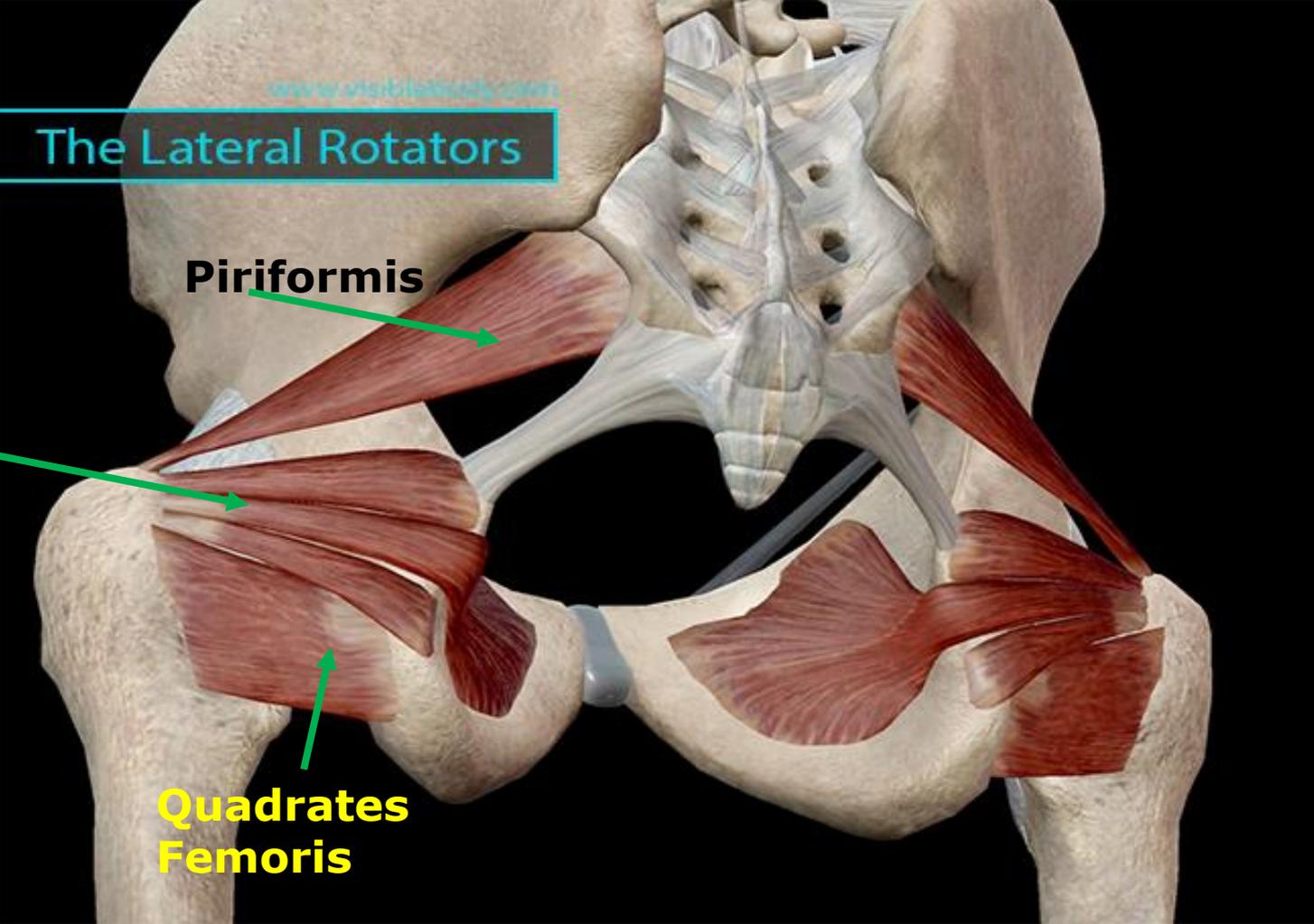
Between ischial tuberosity and back of sacrum & coccyx

Greater sciatic foramen

Between **greater sciatic notch**, sacrospinous and sacrotuberous ligaments.

Lesser sciatic foramen

Between **lesser sciatic notch**, sacrospinous and sacrotuberous ligaments.



The Lateral Rotators

Piriformis

Obturator internus and two Gemelli

Quadrates Femoris

Branches of Sacral Plexus

- 1-Sciatic
- 2-Superior gluteal Nerve
- 3-Inferior gluteal nerve
- 4-Posterior cutaneous nerve of thigh
- 5-Nerves to the piriformis
- 6-Nerve to the quadratus femoris
- 7-Nerve to obturator internus
- 8- Pudendal Nerve

Structures Passing in Greater and Lesser Sciatic Foramen

Greater sciatic foramen (7 nerves+3 vessels+1 muscle)

Above Piriformis

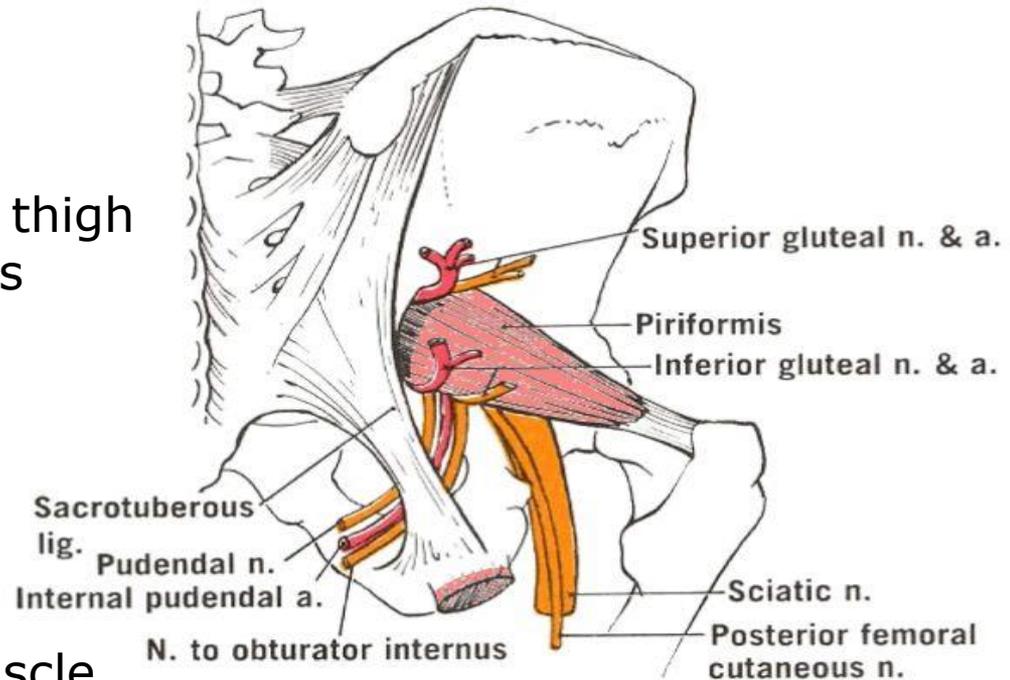
Superior gluteal nerve and vessels

Below Piriformis

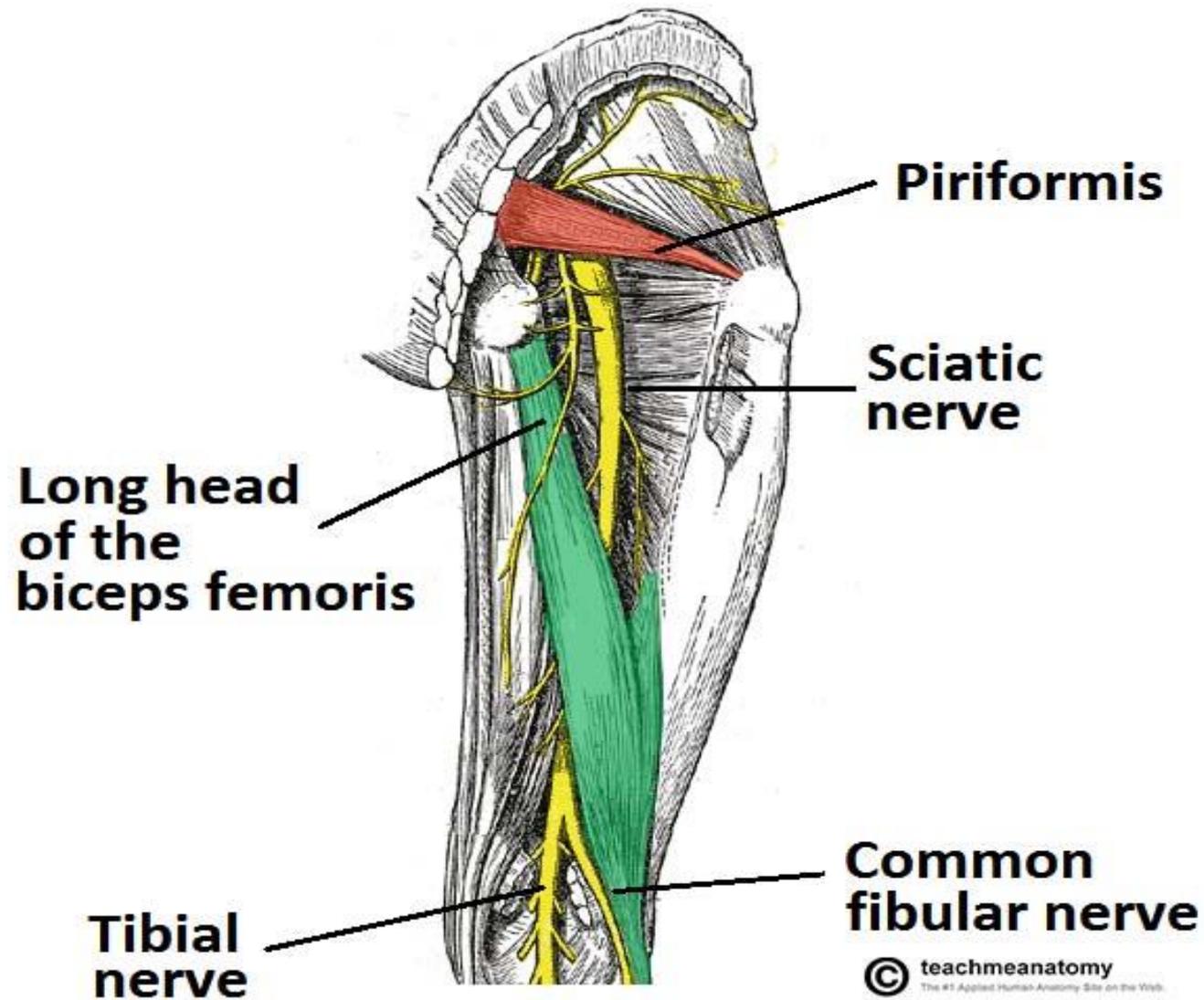
- Sciatic nerve
- Posterior cutaneous nerve of the thigh
- Inferior Gluteal nerve and vessels
- Nerve to Quadratus femoris
- **Pudendal nerve**
- **Internal pudendal vessels**
- **Nerve to Obturator Internus**

Lesser Sciatic foramen

- Tendon of Obturator Internus Muscle
- **Pudendal nerve**
- **Internal pudendal vessels**
- **Nerve to obturator internus**



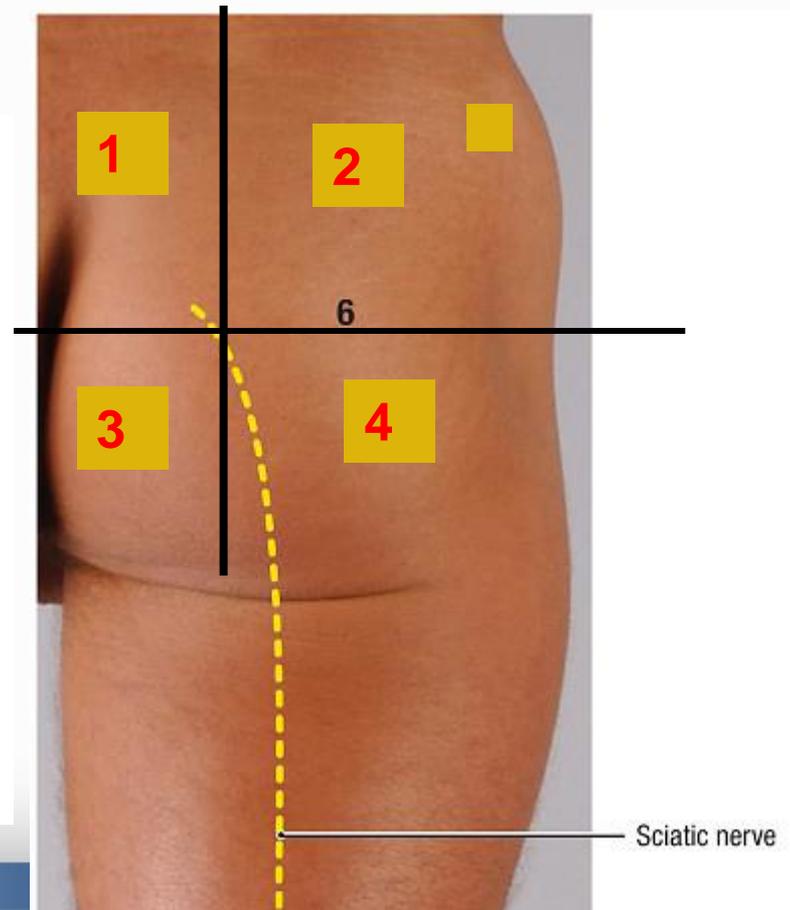
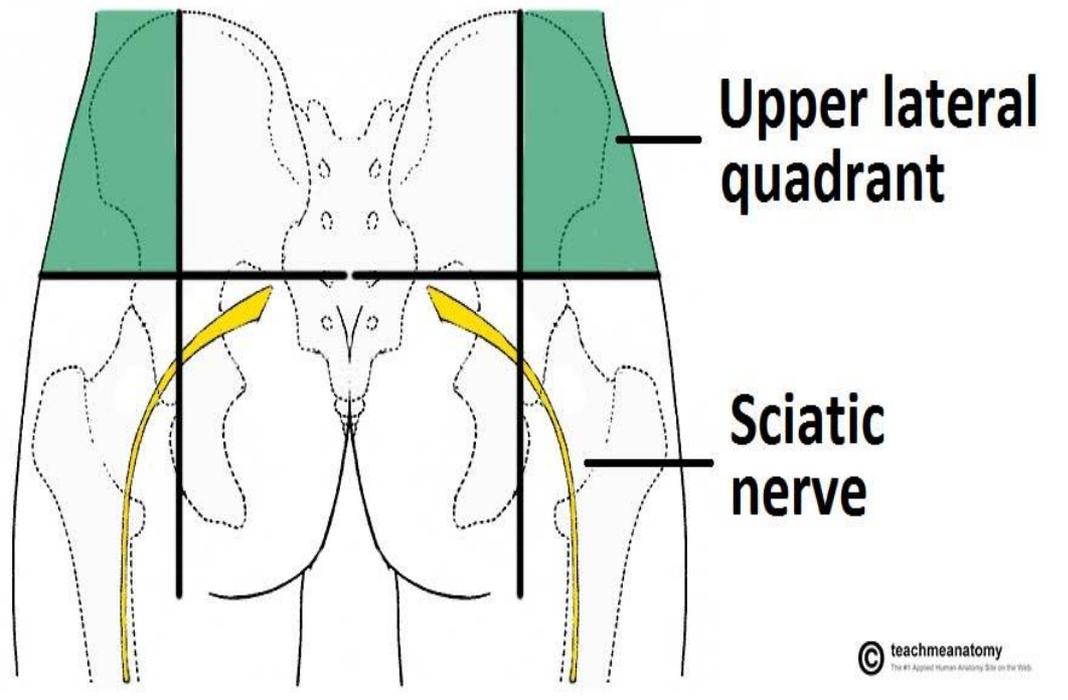
Sciatic nerve



CLINICAL ANATOMY

- I.M (Intramuscular injection)

Which the most suitable quadrangle for IM injection?



Posterior Compartment of thigh Hamstring Muscles

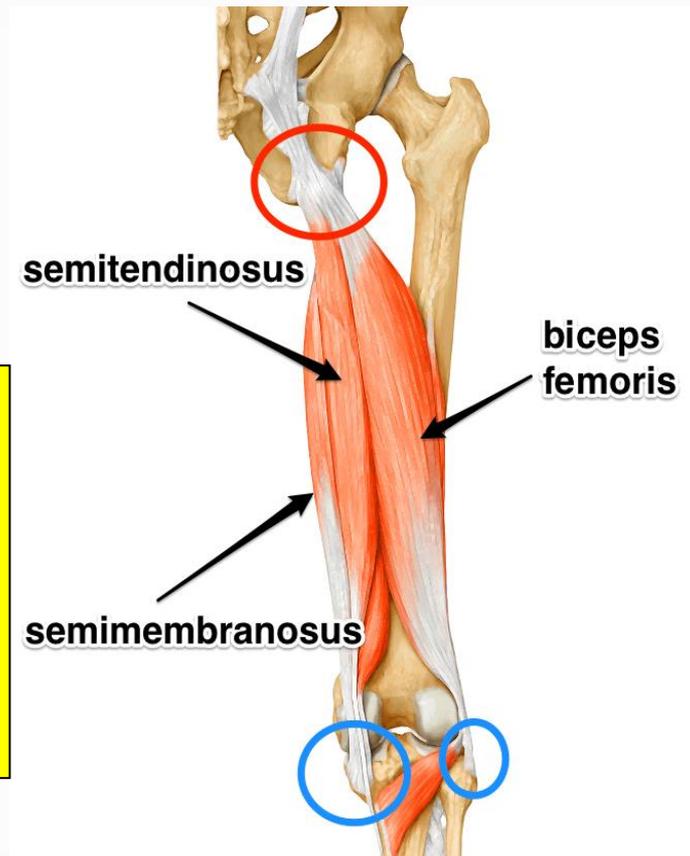
Posterior Compartment of thigh - Hamstring

1. Biceps femoris (long and short heads)
2. Semitendinosus
3. Semimembranosus
4. Adductor Magnus (Ischial head)

All are innervated by Tibial branch of Sciatic nerve.

EXCEPT

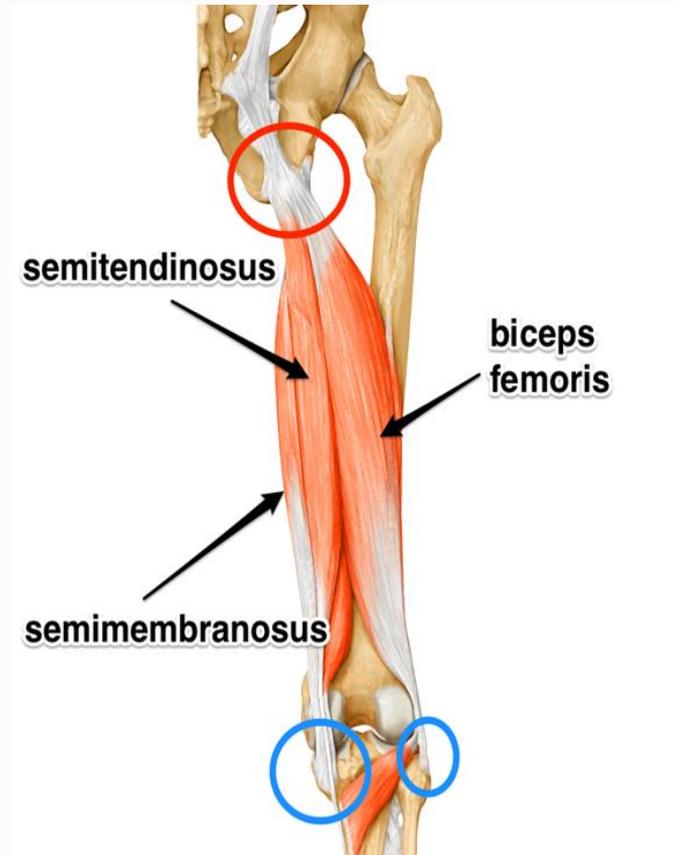
Short head of biceps femoris by common peroneal branch of Sciatic nerve



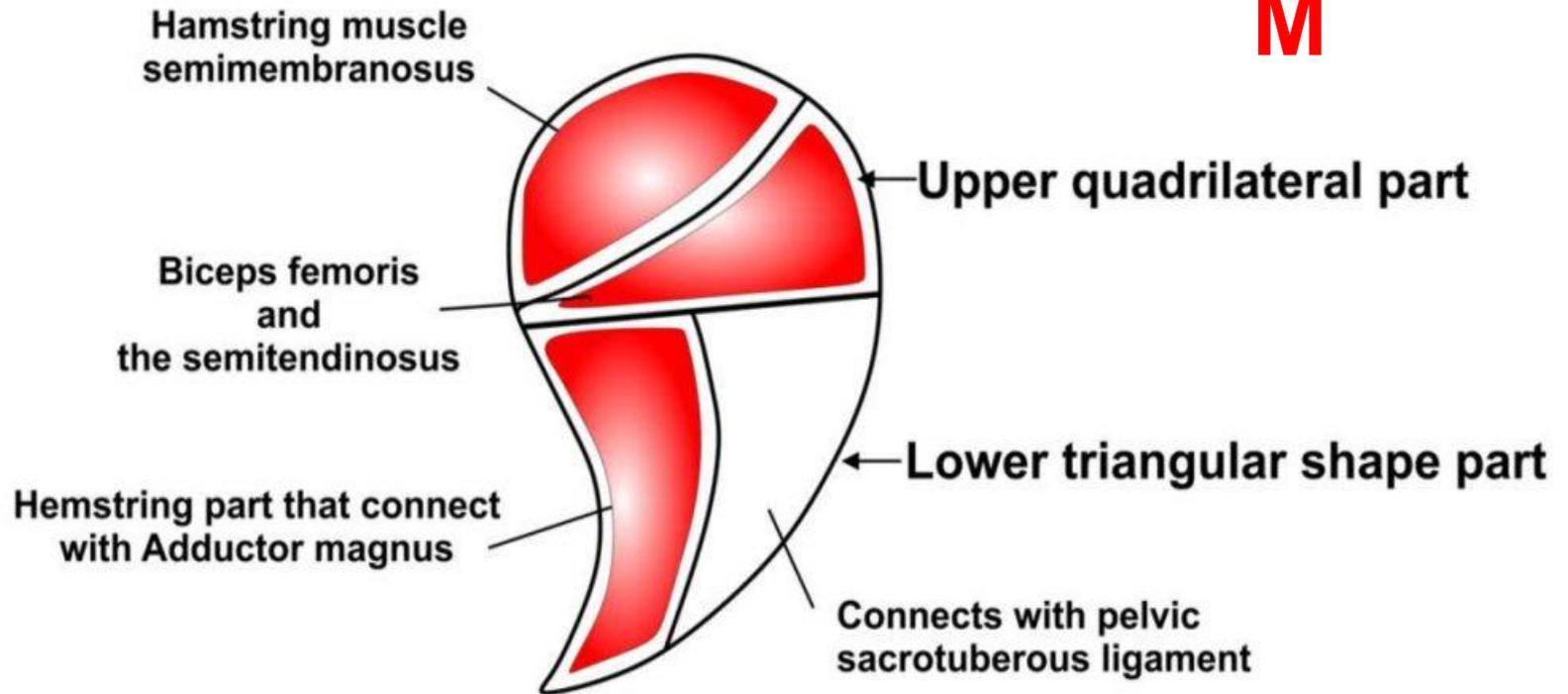
Origin : All from Ischial tuberosity **EXCEPT** Short head of biceps femoris from linea aspera and lateral supracondylar line.

✓ **Insertion** :

- ❖ Biceps femoris :
styloid process of the fibula.
- ❖ Semitendinosus:
upper part of medial surface of the tibia (SGS).
- ❖ Semimembranosus:
Back of medial condyle of the tibia
- ❖ Adductor Magnus (Ischial head)
Adductor tubercle of femur



M



Structure/division of Ischial Tuberosity

Action :

All are Extends the hip (**EXCEPT** short head of Biceps) and flex the knee

Lateral muscle rotate the knee laterally

Medial muscle rotate the knee medially

Popliteal fossa

Location:

Posterior to the knee joint

Boundaries:

1. Above and lateral:

biceps femoris.

1. Above and medial:

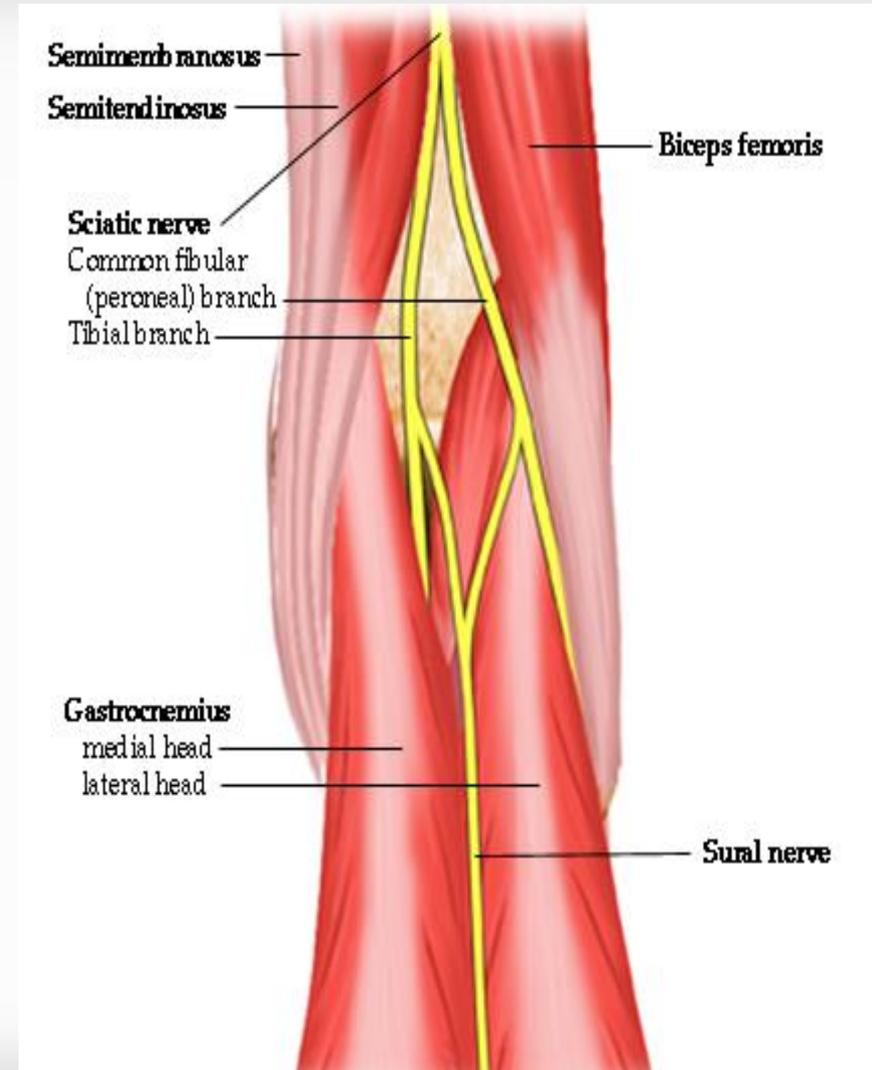
semitendinosus and semimembranosus.

2. Below and lateral:

lateral head of gastrocnemius and plantaris.

3. Below and medial:

medial head of gastrocnemius.



Popliteal fossa

Roof:

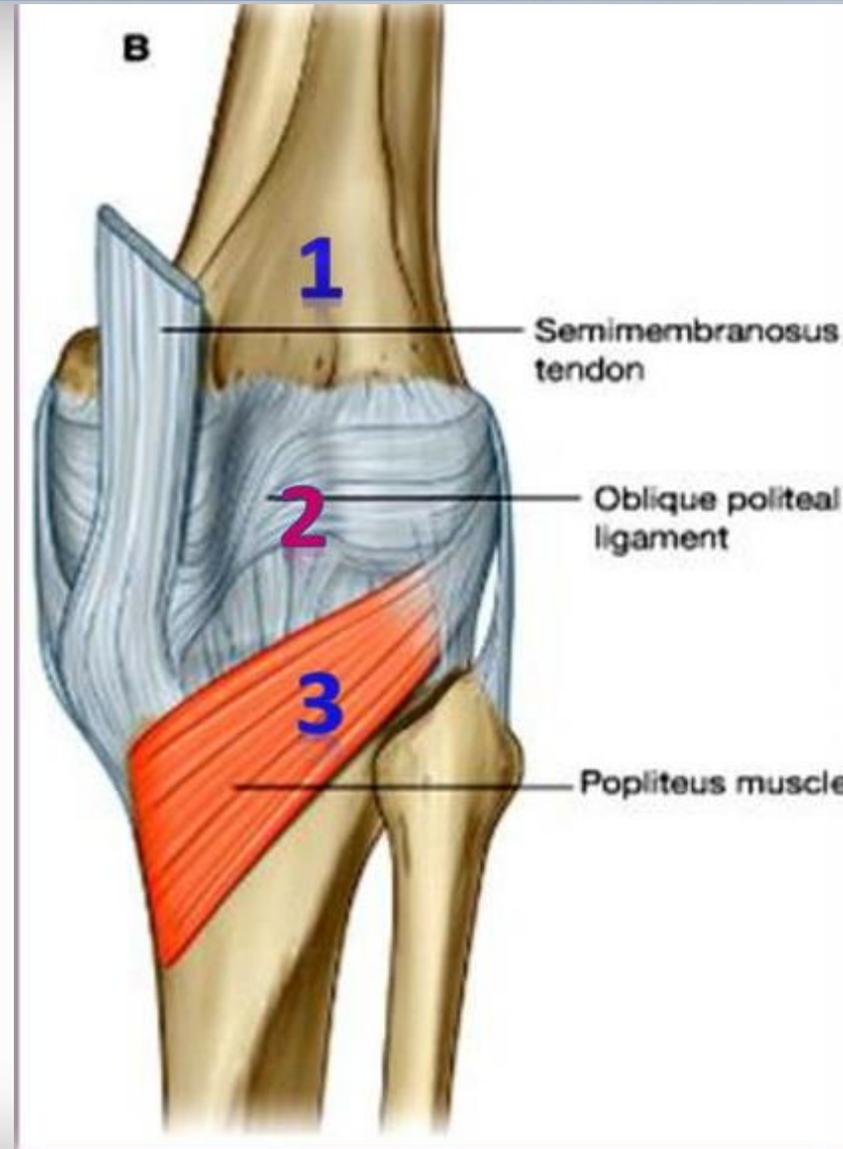
- Skin
- Deep fascia

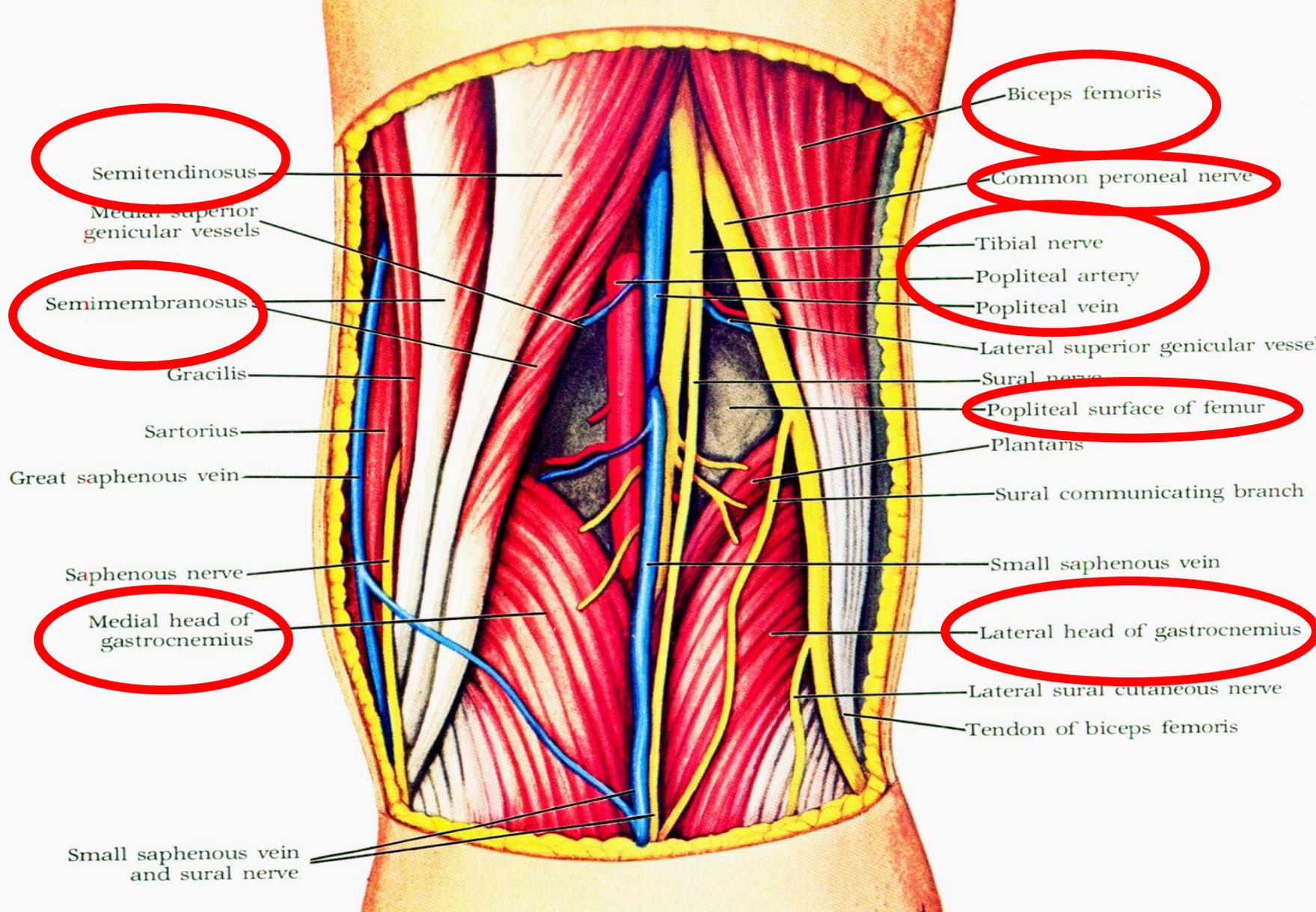
Floor:

- Popliteal surface of the femur.
- Capsule of the knee joint.
- Popliteus muscle

Contents

- 1-Popliteal artery (Most deep)
- 2- Popliteal vein
- 3-The common peroneal nerve (lateral popliteal nerve)
- 4- Tibial nerve(medial popliteal nerve)
- 5- The posterior cutaneous nerve of the thigh
- 6- The small saphenous vein



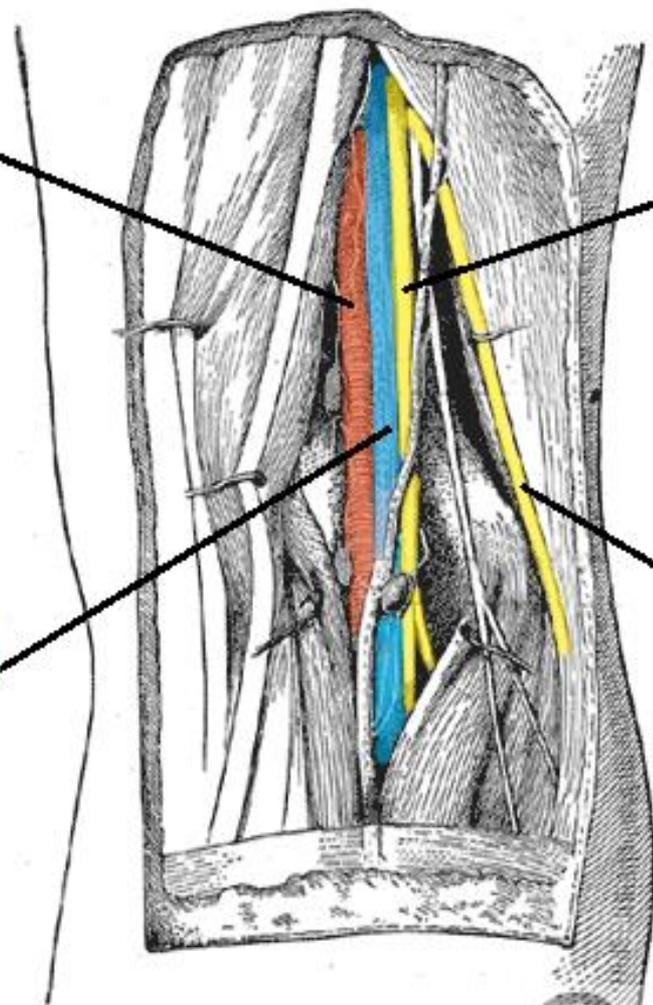


**Popliteal
artery**

**Tibial
nerve**

**Popliteal
vein**

**Common fibular
nerve**



teachmeanatomy

The #1 Applied Human Anatomy Site on the Web.

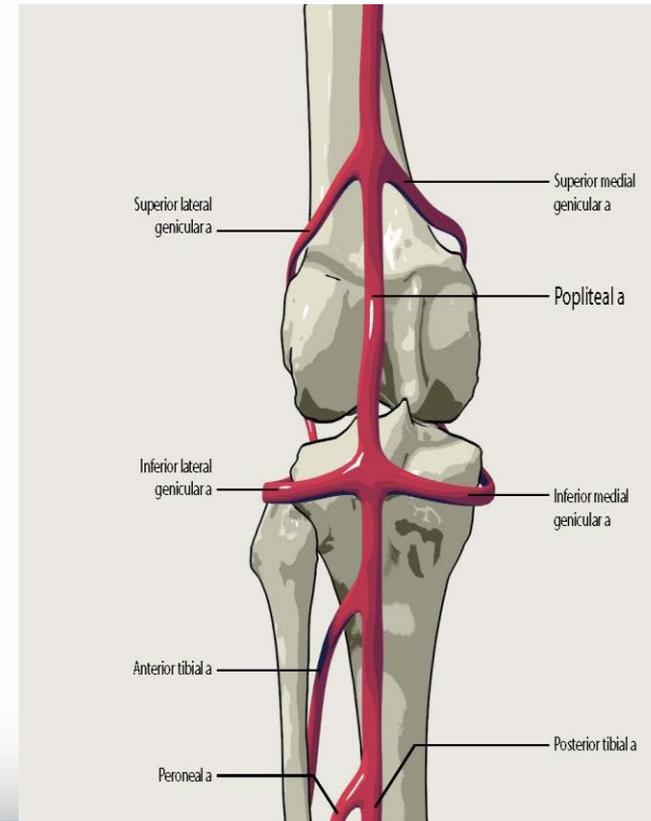
Popliteal artery

Beginning : at opening in adductor magnus as a continuation of femoral artery.

Termination: at the lower border of popliteus muscle by dividing into anterior & posterior tibial arteries.

Branches:

- Five genicular branches to the knee joint (2 superior, 2 inferior & middle).
- Muscular branches to muscles of the back of the leg.



THANK
YOU!



Best
Illustrations