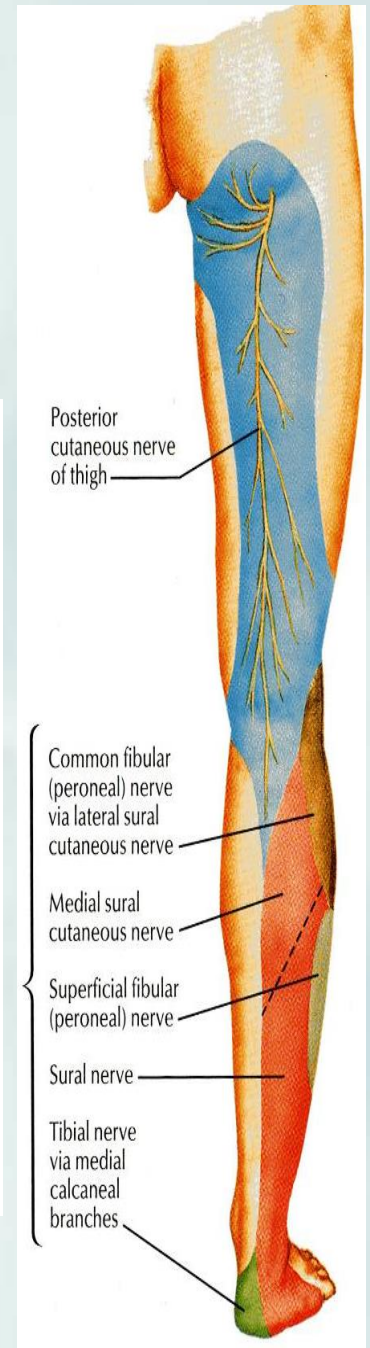
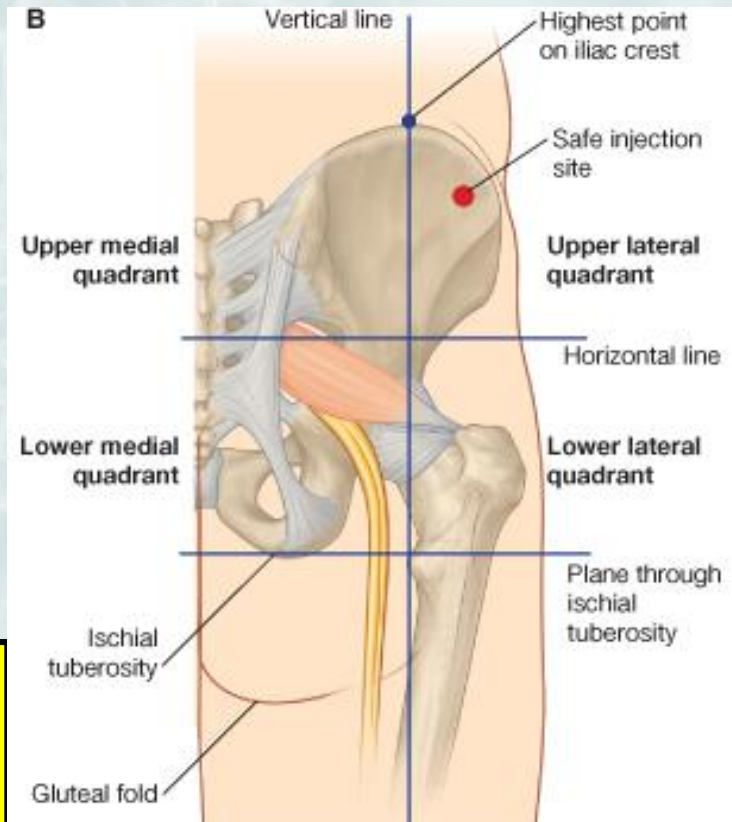


# GLUTEAL REGION & BACK OF THIGH



**By :**  
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**&**  
**Dr. Sanaa Al-Shaarawi**

# ***OBJECTIVES***

- ❖ At the end of this lecture, the student should be able to identify :
- ❖ Contents of gluteal region:
  - Groups of Glutei muscles and small muscles (Lateral Rotators).
  - Nerves & vessels.
- ❖ Foramina and structures passing through them as:
  - 1-Greater Sciatic Foramen.
  - 2-Lesser Sciatic Foramen.
- Back of thigh : Hamstring muscles.

# CONTENTS OF GLUTEAL REGION

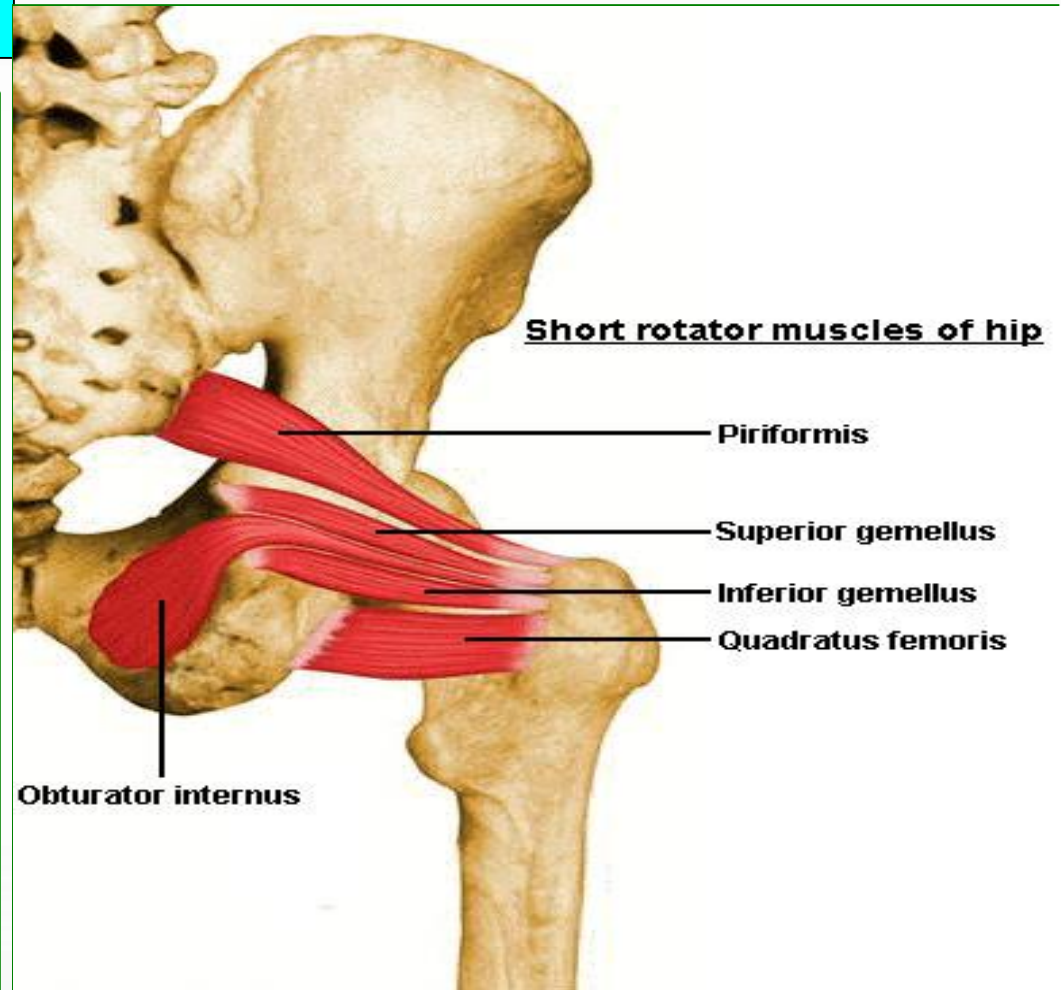
- I - Muscles:

- A- GLUTEI:

1. Gluteus maximus
2. Gluteus medius
3. Gluteus minimus

- B- GROUP OF SMALL MUSCLES (Lateral Rotators) :

1. Piriformis.
2. Obturator internus
3. Superior gemellus
4. Inferior gemellus
5. Quadratus femoris

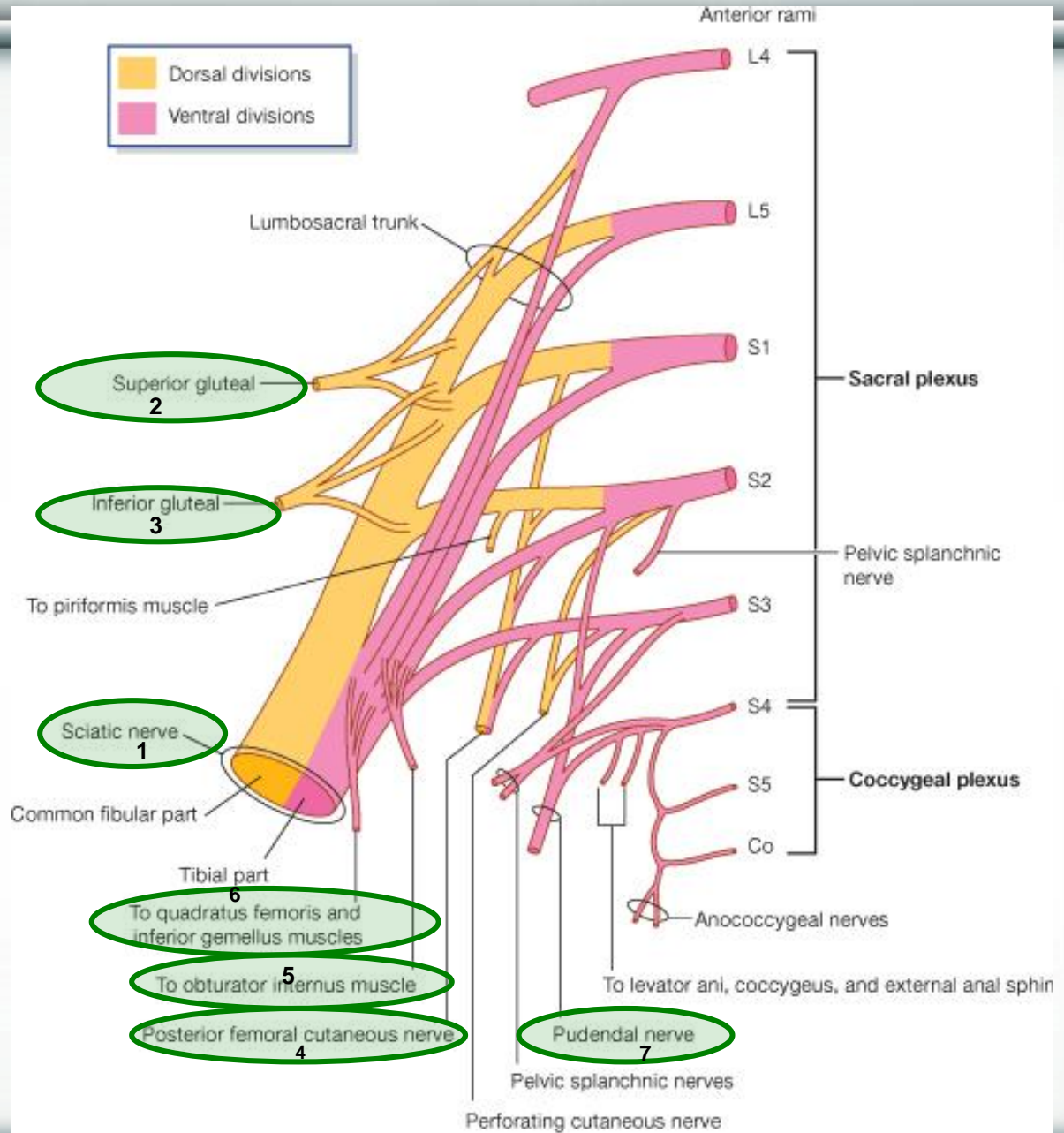


# CONTENTS

## II – NERVES:

(all from sacral plexus):

1. Sciatic nerve.
2. Superior gluteal n.
3. Inferior gluteal n.
4. Post. cutaneous n. of thigh.
5. Nerve to obturator internus.
6. Nerve to quadratus femoris.
7. Pudendal nerve.

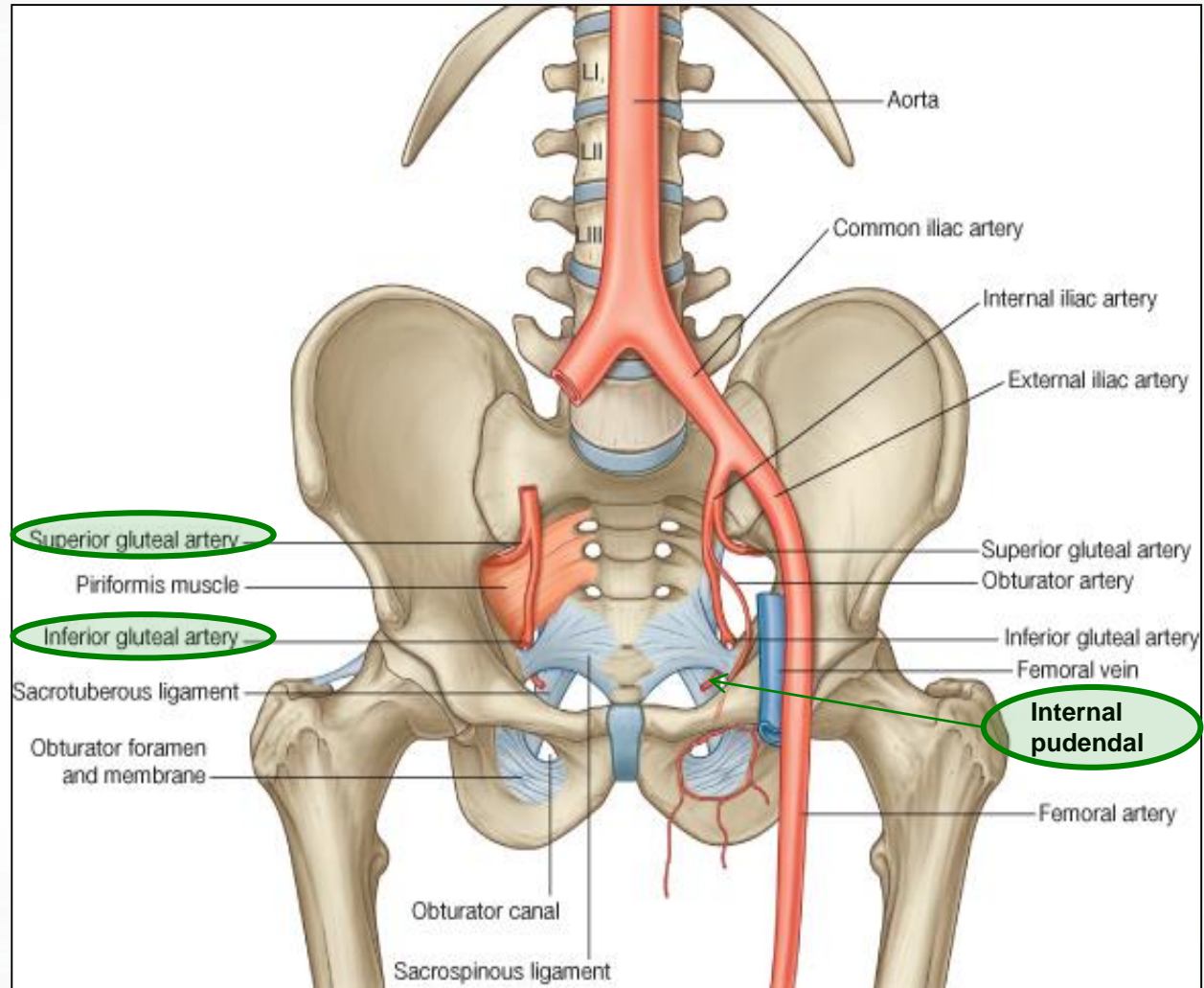


# CONTENTS

## III - VESSELS:

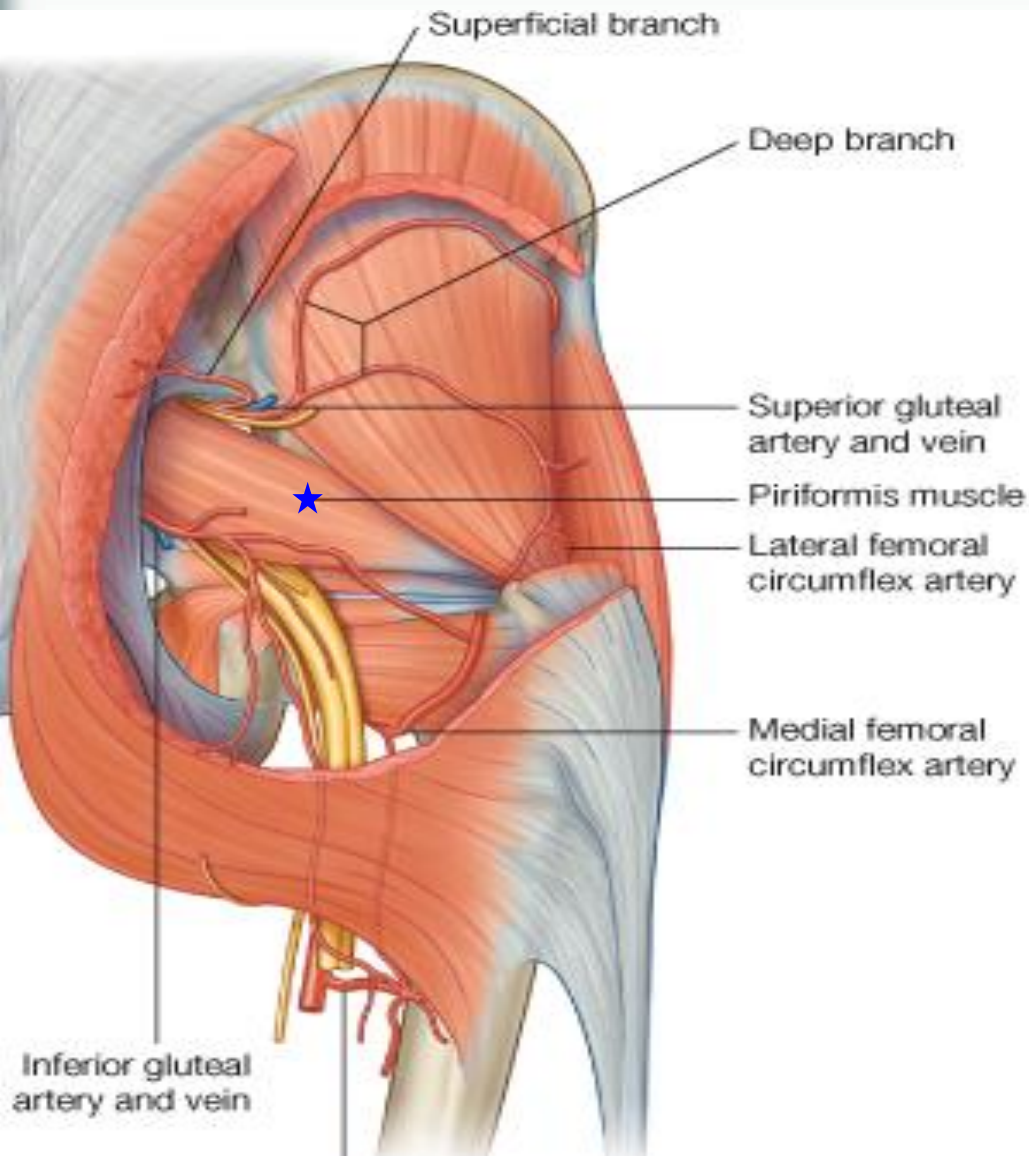
(all from internal iliac vessels):

1. Superior gluteal
2. Inferior gluteal
3. Internal pudendal vessels.





# Greater sciatic foramen



➤ **Greater sciatic notch** of hip bone is transformed **into foramen** by **sacrospinous & sacrotuberous** ligaments.

• *Structures passing through Greater sciatic foramen :*

• **Piriformis muscle.**

• Above piriformis :

• **Superior gluteal nerves & vessels.**

• Below piriformis :

• **Inferior gluteal nerves & vessels.**

• **Sciatic nerve.**

• **Posterior cutaneous nerve of thigh.**

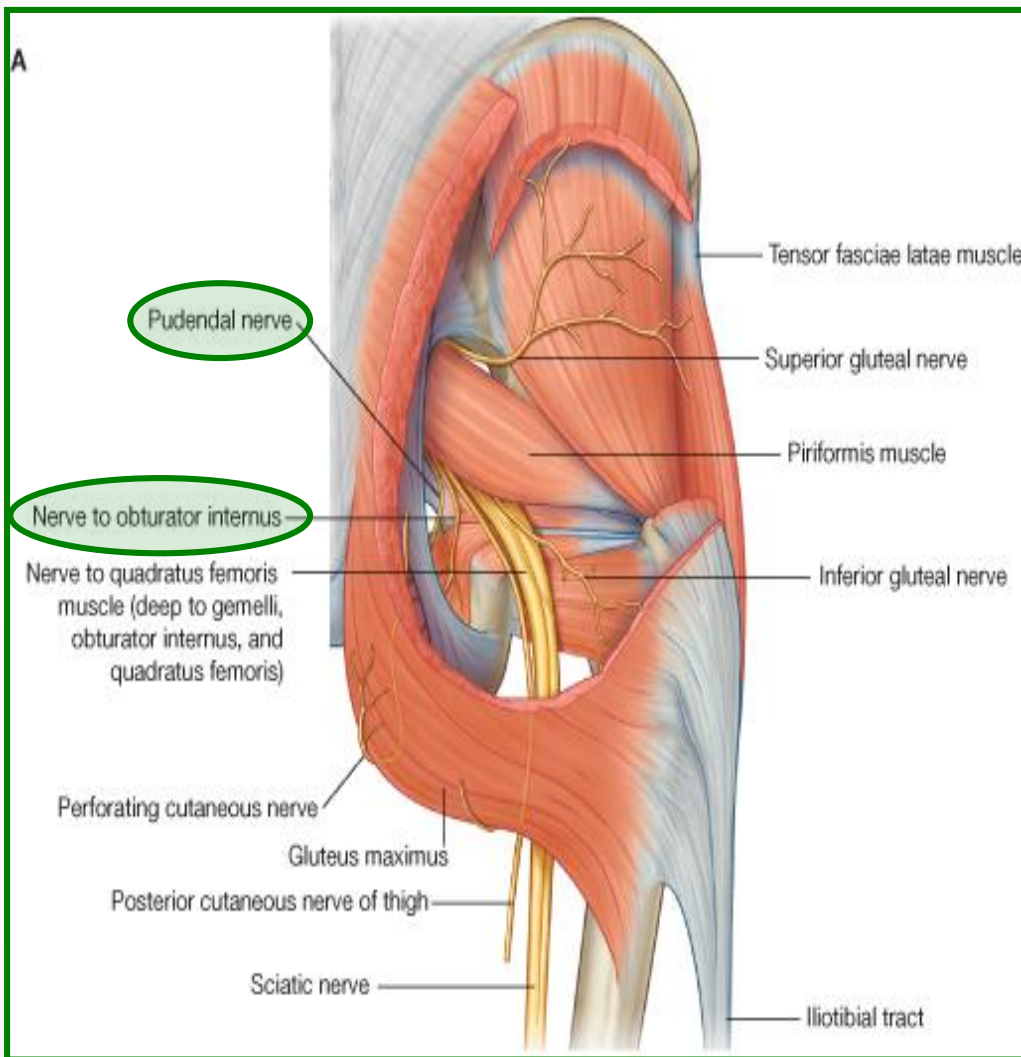
• **Nerve to quadratus femoris.**

• **Nerve to obturator internus.**

• **Pudendal N.**

• **Internal pudendal vessels.**

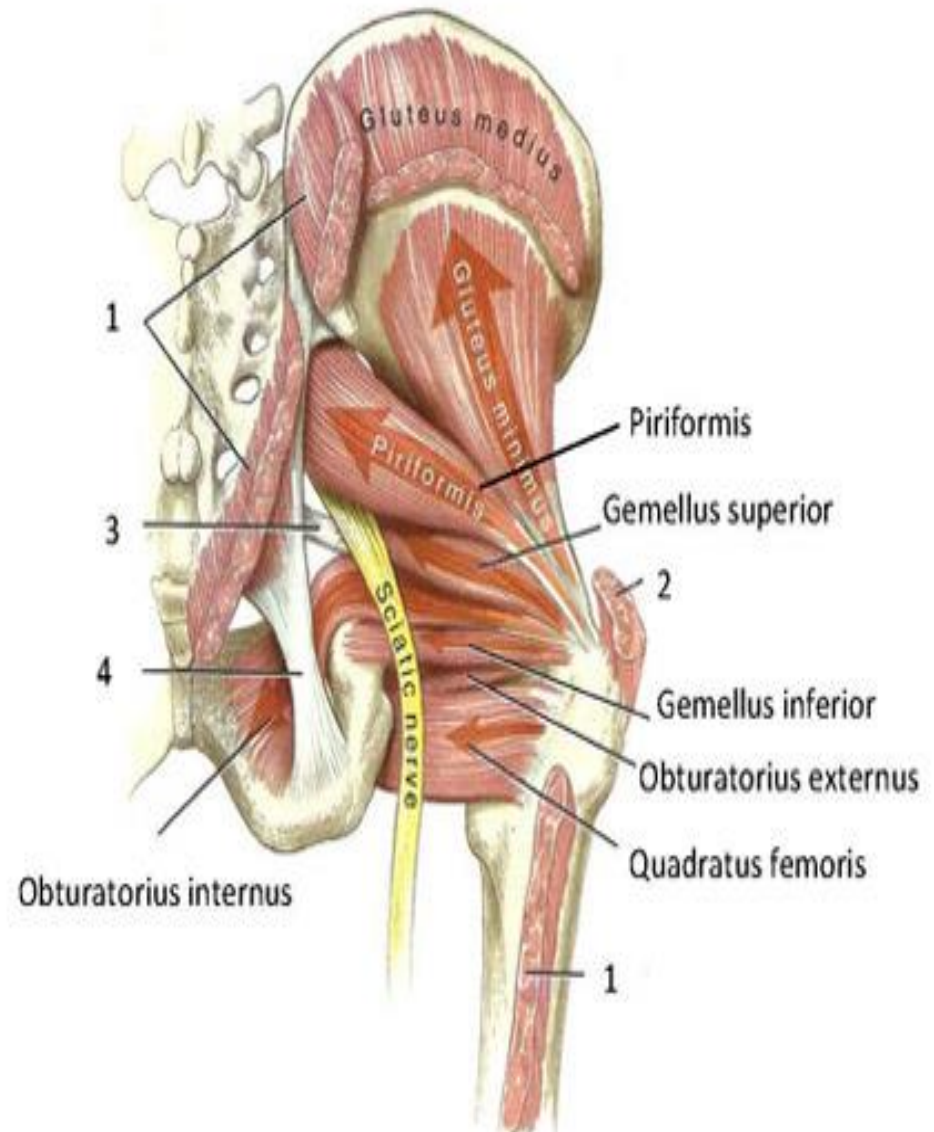
# Lesser sciatic foramen



- **Lesser sciatic notch** of hip bone is transformed into **foramen** by **Sacrospinous & sacrotuberous** ligaments.
- *Structures passing through Lesser sciatic foramen :*
  - **Tendon of obturator internus.**
  - **Nerve to obturator internus.**
  - **Pudendal nerve.**
  - **Internal pudendal vessels.**

# Glutei Muscles

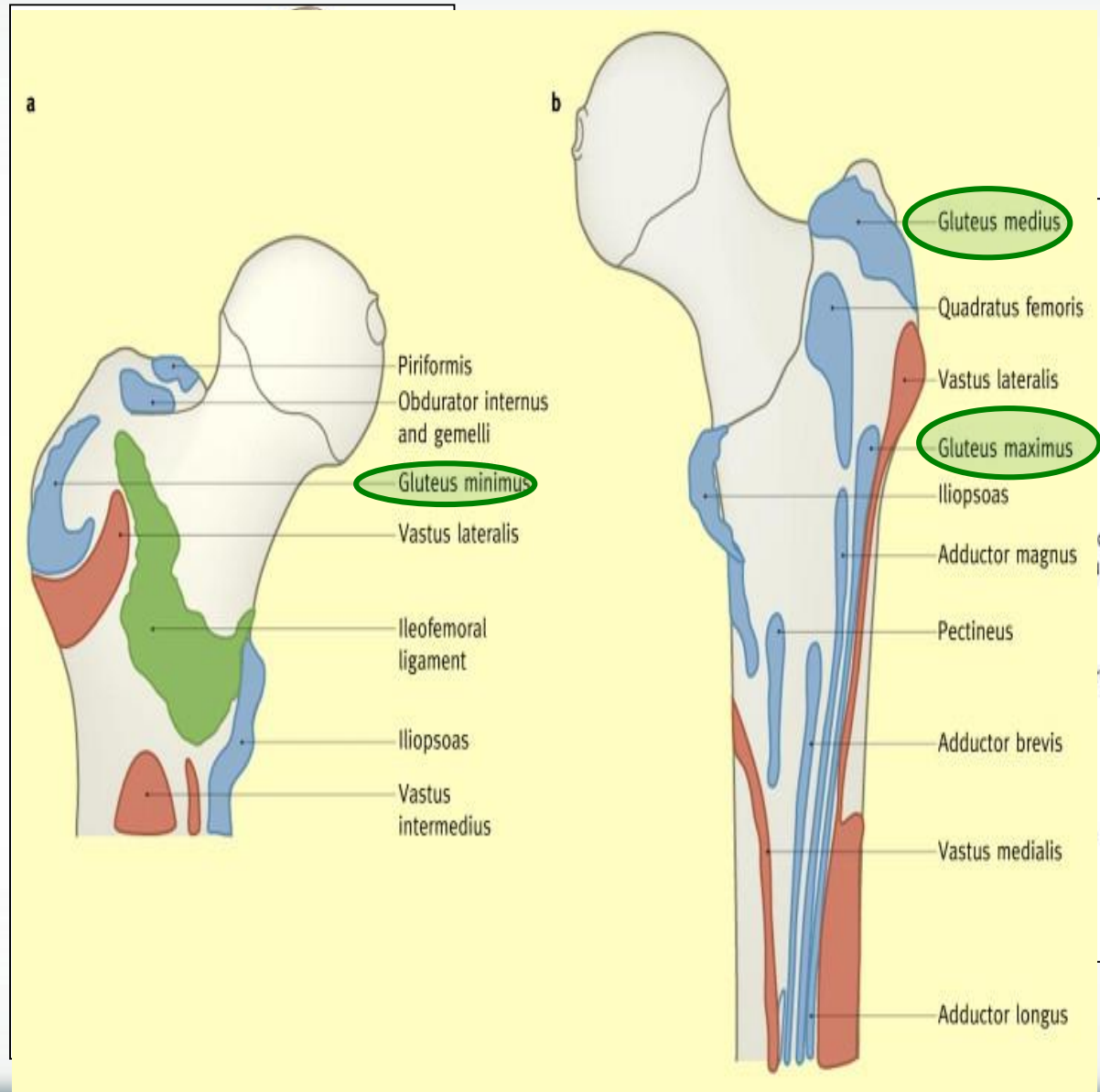
- **ORIGINS**
- **Gluteus minimus:**
- **Anterior part of the gluteal surface of ilium**
- **Gluteus medius:**
- **Middle part of the gluteal surface of ilium,**
- **Gluteus maximus:**
- **Posterior part of the gluteal surface of ilium,**
- **Main origin:**  
**Back of sacrum & coccyx & back of Sacrotuberous ligament**





# Glutei Muscles

- **Insertion:**
- **Gluteus minimus:** anterior surface of the **greater trochanter**
- **Gluteus medius:** lateral surface of the **greater trochanter**
- **Gluteus maximus:**
  1. **Main insertion:** iliotibial tract
  2. **Other insertion:** gluteal tuberosity of the femur.



- **Gluteus medius & minimus:**

- **Nerve supply:**

- Superior gluteal nerve.

- **Action:**

- abduction & medial rotation of hip joint.

- Normally they prevent lateral tilt of the pelvis by contraction of ABDUCTORS on opposite side, on raising the other limb from ground.

- If the pelvis tilts, this means +ve Trendelenburg's sign.

- **Right pelvic tilt** (the left side of the pelvis is elevated higher than the right side) as in picture.

- This requires a muscular effort by the hip abductors (glutei medii and minimi of opposite side) to pull the pelvis up.

- **Gluteus maximus:**

- **Nerve supply:**

- Inferior gluteal nerve.

- **Action:**

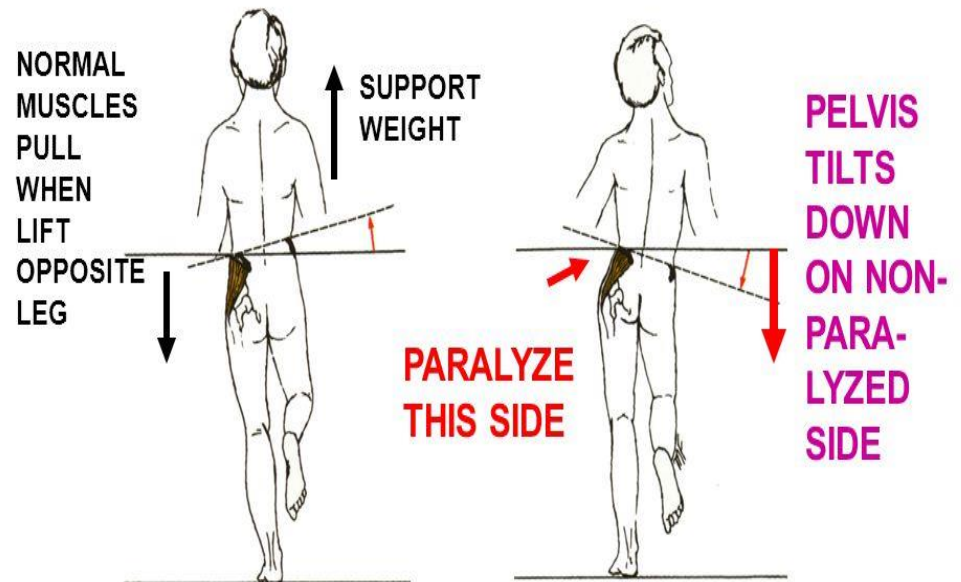
- Extension & lateral rotation of the hip joint.

- Through its attachment to iliotibial tract, it stabilizes the femur on tibia during standing.

## NERVE SUPPLY & ACTION of Gluti muscles

### GLUTEAL GAIT -

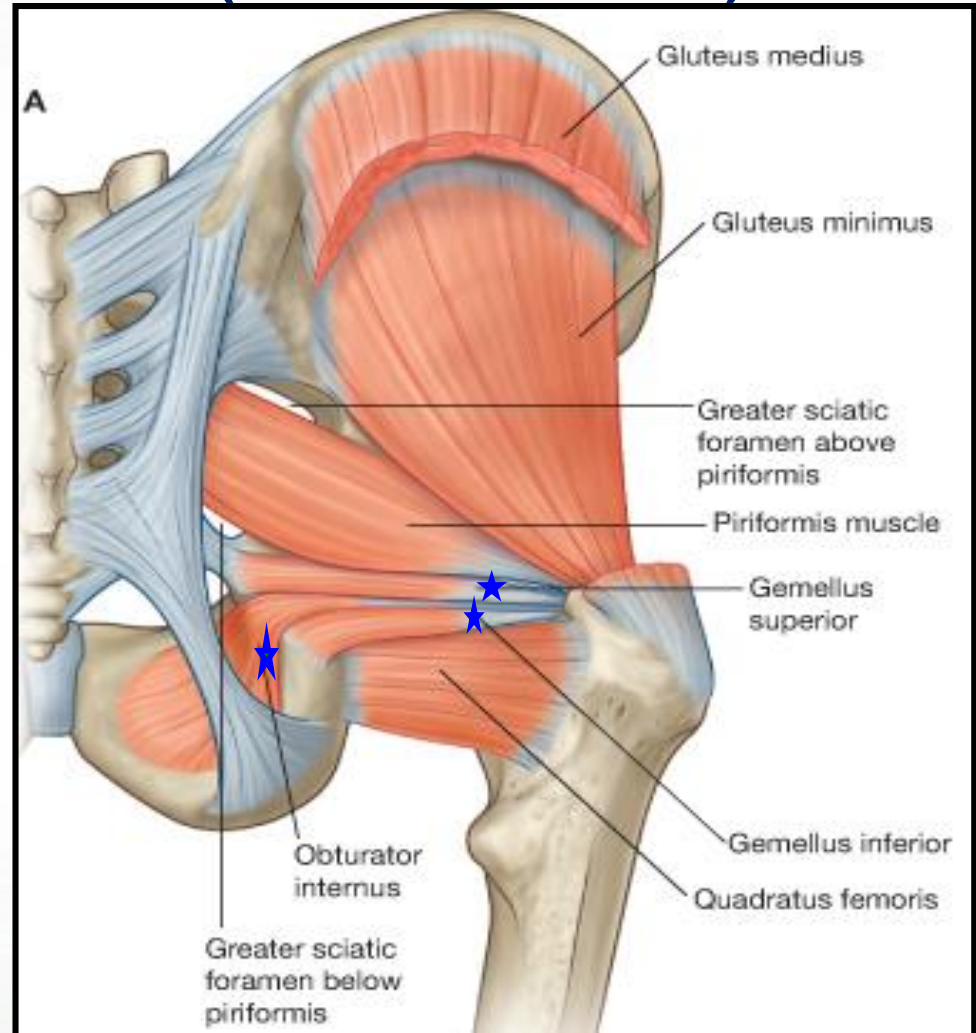
caused by injury to Superior Gluteal nerve or poliomyelitis (also congenital dislocation of hip joint). Paralyze Gluteus Medius and Minimus. In walking, pelvis tilts down on non-paralyzed side when lift foot of opposite, non-paralyzed leg.



**Positive Trendelenburg sign - WHEN LIFT OPPOSITE LEG, PELVIS TILTS DOWN ON (NON-PARALYZED) OPPOSITE SIDE.**

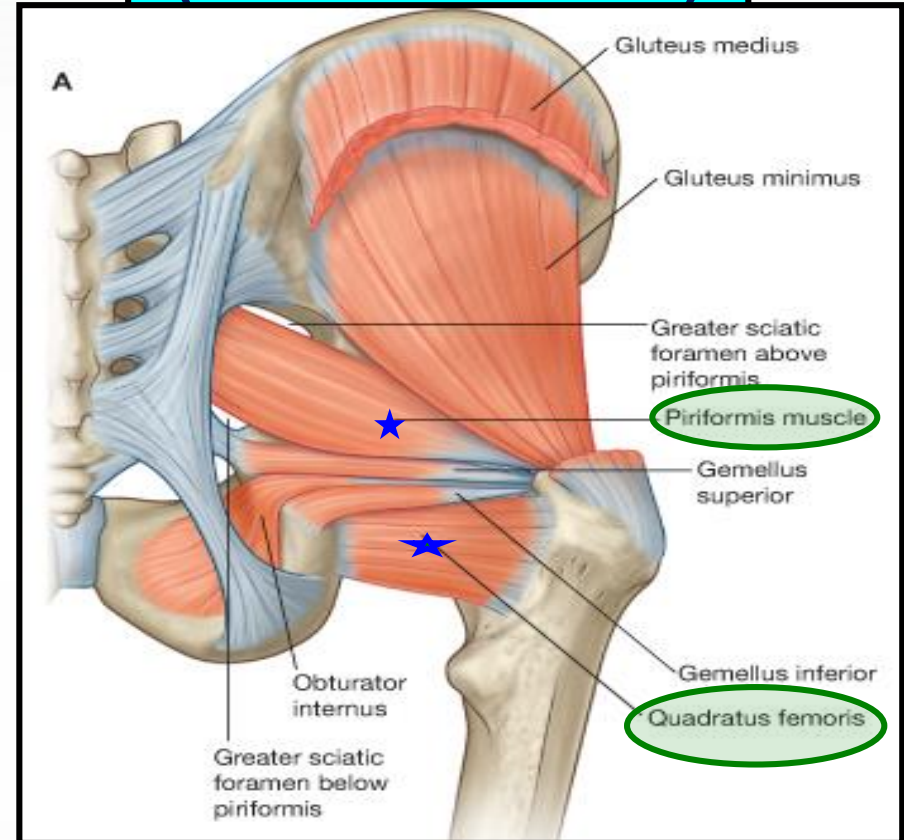
- **Obturator Internus:**
- **Origin:**
- Inner surface of the side wall of the pelvis.
- **Insertion:**
- Into the medial surface of the greater trochanter.
- **Nerve supply:**
- Nerve to obturator internus.
- **Superior & Inferior Gemelli:**
- **Origin:**
- **Superior gemellus;**
- upper part of lesser sciatic notch.
- **Inferior gemellus:**
- lower part of lesser sciatic notch.
- **Insertion:**
- Upper & lower parts into tendon of obturator internus.
- **Nerve supply:**
- **Superior gemellus:** nerve to obturator internus
- **Inferior gemellus:** nerve to quadratus femoris.

## Small muscles (Lateral Rotators)



- **Piriformis:**
- **Origin:**
- Pelvic surface of middle 3 sacral vertebrae.
- **Insertion:**
- It passes through **GSF** to be inserted into the *upper border* of the **greater trochanter**.
- **Nerve supply:**
- **Anterior rami of S1,2**
- **Quadratus femoris:**
- **Origin:**
- Lateral border of the ischial tuberosity.
- **Insertion:**
- Quadratus tubercle & intertrochanteric crest.
- **Nerve supply:**
- Nerve to quadratus femoris.

## Small muscles (Lateral Rotators)



**Action:** all have **SIMILAR ACTION:**  
**Lateral rotation of the hip joint.**  
**Control movement of the hip joint.**



## SUPERIOR GLUTEAL:

- **Course:**
- Passes through **GSF**, above **piriformis**, then *between gluteus medius & minimus*
- **Branches:**
- 1. Muscular to **gluteus medius, minimus & tensor fasciae lata**
- 2. Articular to **hip joint**

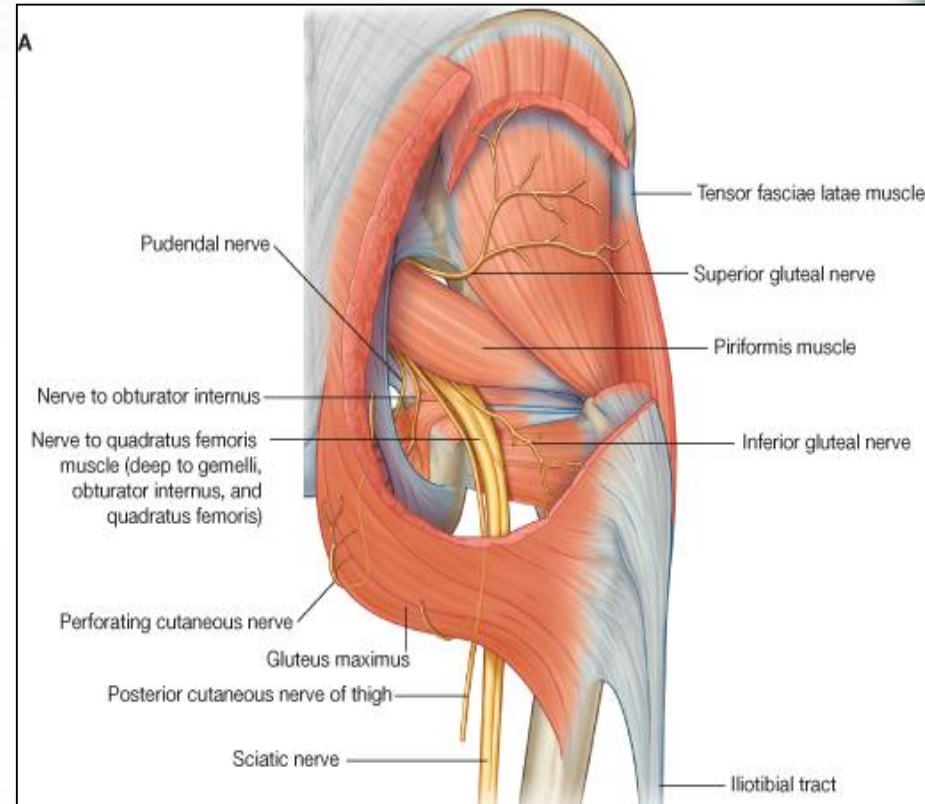
## INFERIOR GLUTEAL:

- **Course:**
- passes through **GSF**, below **piriformis**, then *deep to gluteus maximus*
- **Branches:** muscular to **gluteus maximus**

## NERVE TO QUADRATUS FEMORIS:

- **Course:**
- passes through **GSF**, below **piriformis**
- **Branches:**
- 1. Muscular to **quadratus femoris & inferior gemellus**
- 2. Articular to **hip joint**

# NERVES



## POSTERIOR CUTANEOUS NERVE OF THIGH :

### Course:

Passes through **GSF**, **below** **piriformis**, then descends deep to deep fascia.

### Branches:

**Cutaneous** branches to: **gluteal region**, **back of** scrotum (labium majus) **back of thigh** & **upper part of back of leg**.

## SCIATIC :

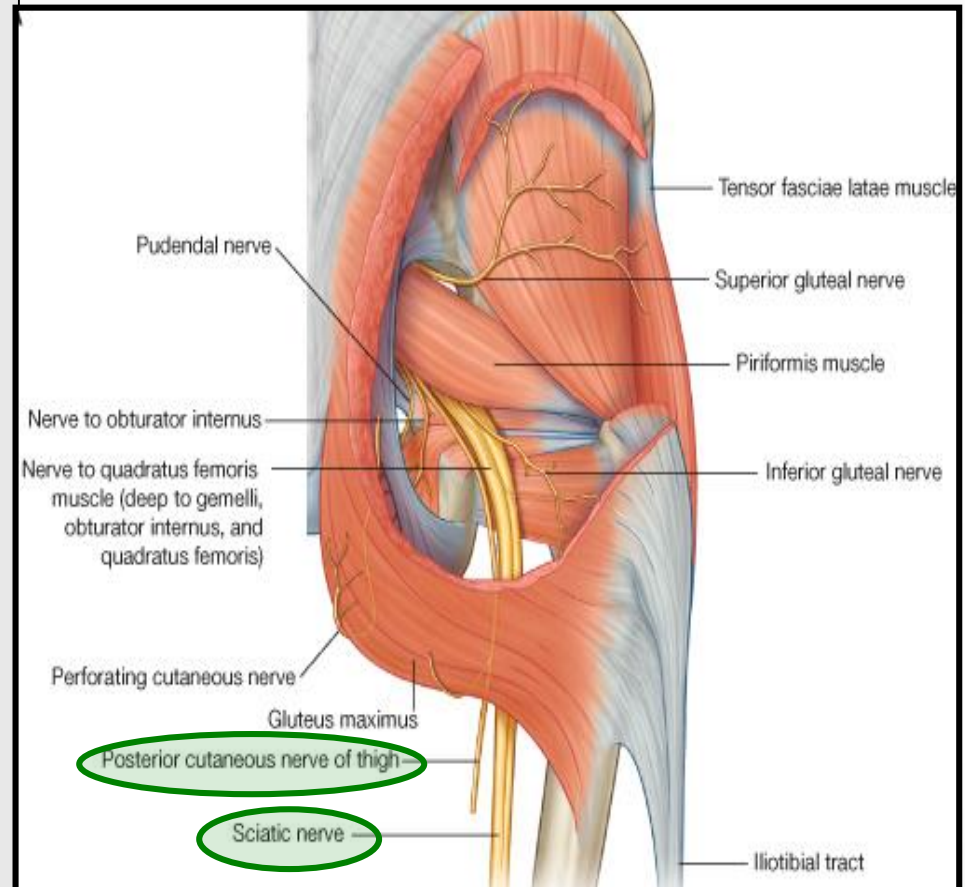
### Course:

passes through **GSF**, **below** **piriformis**, then **superficial to**: ischial spine, superior gemellus, tendon of obturator internus, inferior gemellus, quadratus femoris & adductor magnus.

### Branches:

- No branches in gluteal region,
- Divides into **tibial & common peroneal nerves**, in the middle of back of thigh

## NERVES



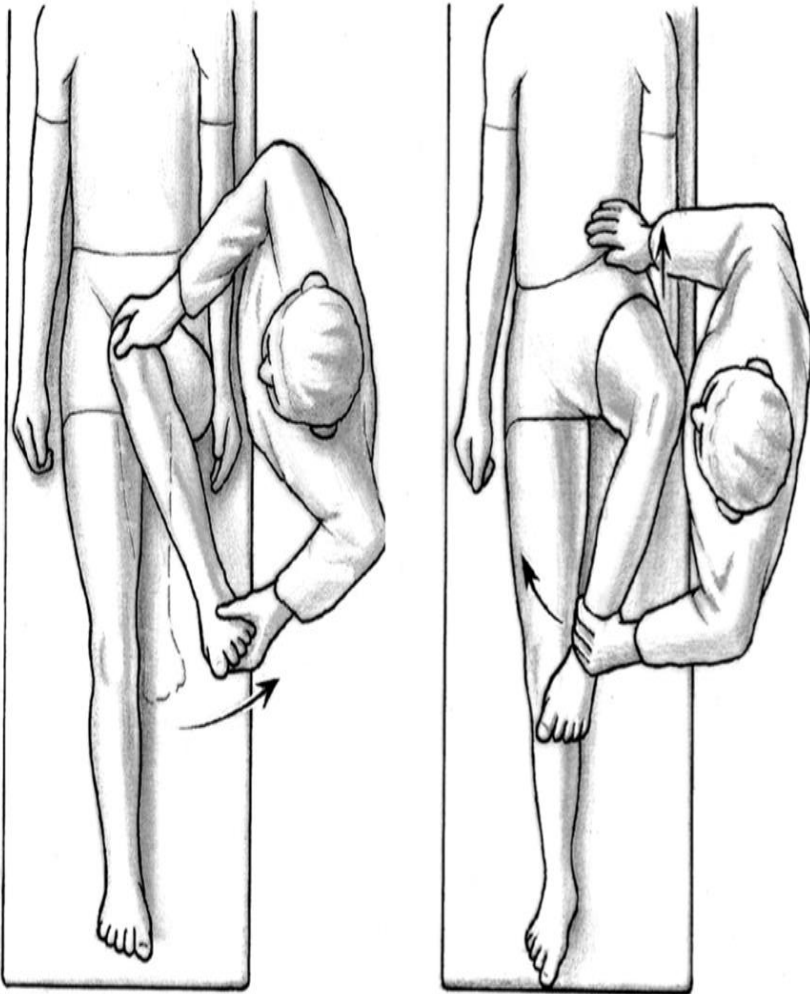
# POSTERIOR COMPARTMENT OF THE THIGH



## CONTENTS

- **Muscles:**
- Hamstring muscles:
  - Biceps femoris.
  - Semitendinosus.
  - Semimembranosus.
  - Ischial part of adductor magnus.
- **Blood supply:**
  - Branches of the profunda femoris artery.
- **Nerve supply:**
  - Sciatic nerve.

# ***Biceps Femoris :***



- **Origin:**
  - The **long head** from the *ischial tuberosity*.
  - The **short head** from the *linea aspera* .
- **Insertion:**
- Mainly into the *head of the fibula*.
- **Nerve supply:**
- The **long head** is supplied by the *tibial part of sciatic*;
- the **short head** is supplied by the *common peroneal part of the sciatic*.
- **Action :**
- *Flexion of knee.*
- *Lateral rotation of flexed leg.*
- **Long head:** *extends hip.*

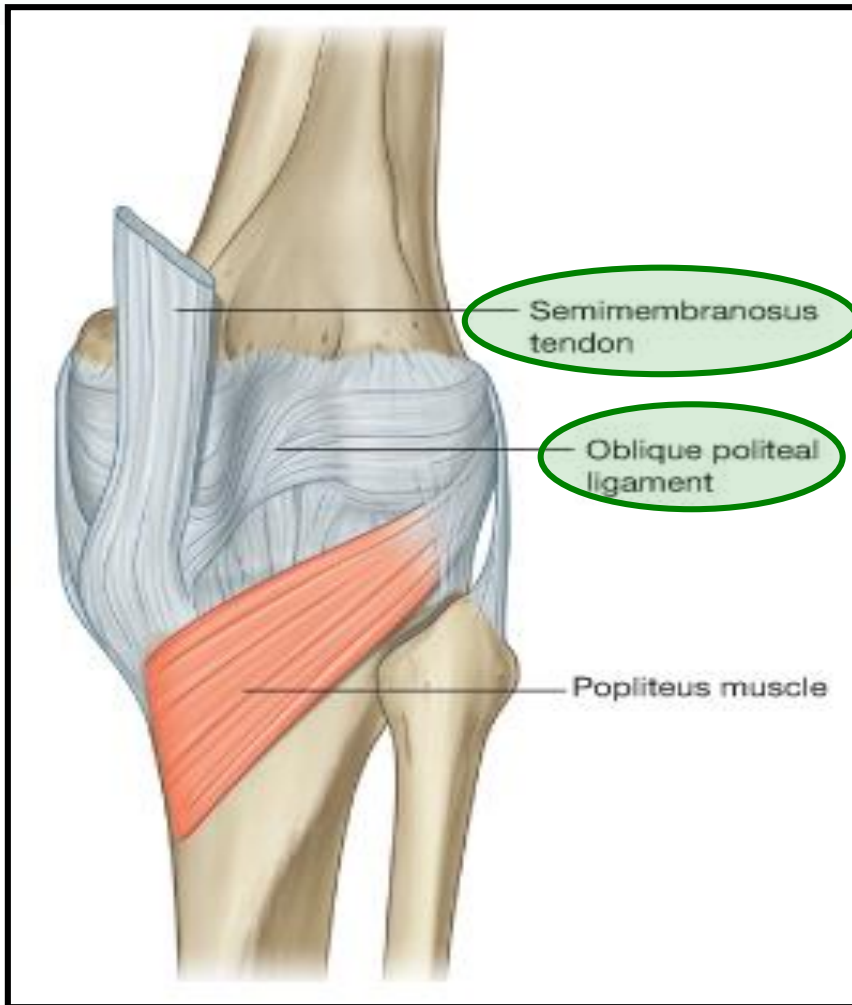


# SEMITENDINOSUS



- **Origin:**
- Ischial tuberosity.
- **Insertion:**
- Upper part of the medial surface of the shaft of the tibia (**SGS**)..
- **Nerve supply:**
- **Tibial** portion of the **sciatic**.
- **Action:**
- Flexes and medially rotates the leg at the knee joint;
- Extends the thigh at the hip joint.

# SEMIMEMBRANOSUS



- **Origin:**
- Ischial tuberosity.
- **Insertion:**
- Posterior surface of the **medial condyle** of the **tibia**.
- *It forms the **oblique popliteal ligament***, which reinforces the capsule on the back of the knee joint.

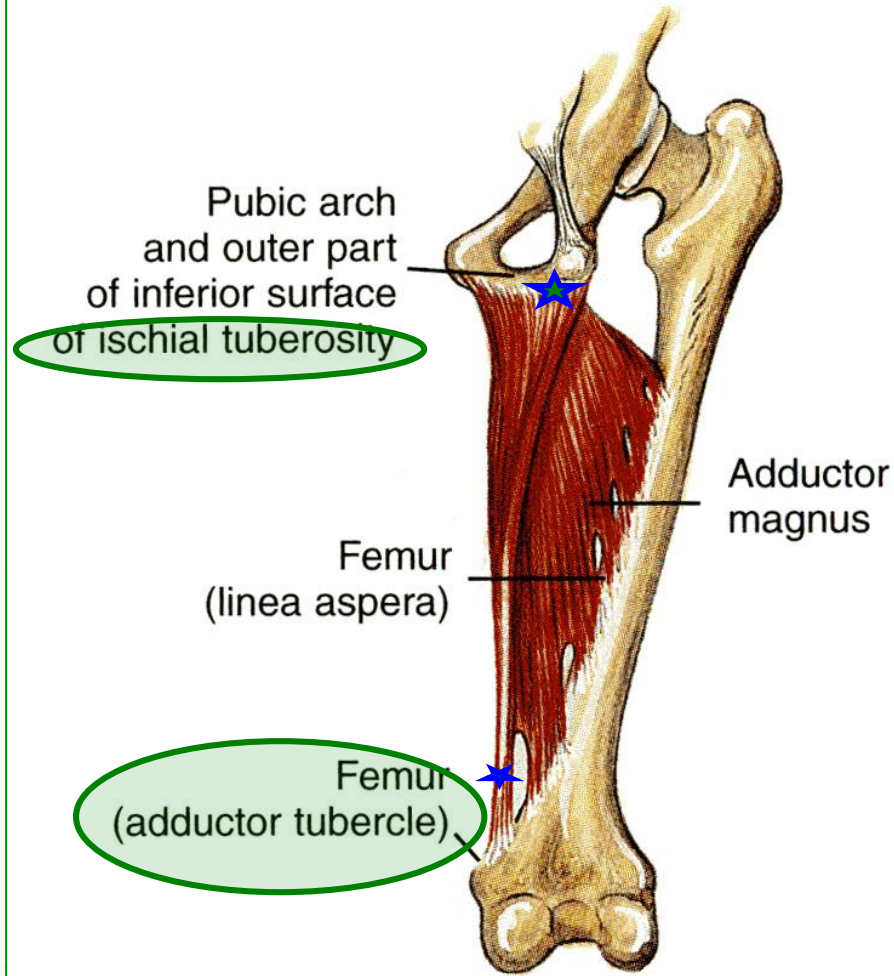
## **Nerve supply:**

- **Tibial** portion of the **sciatic nerve**.

## **Action:**

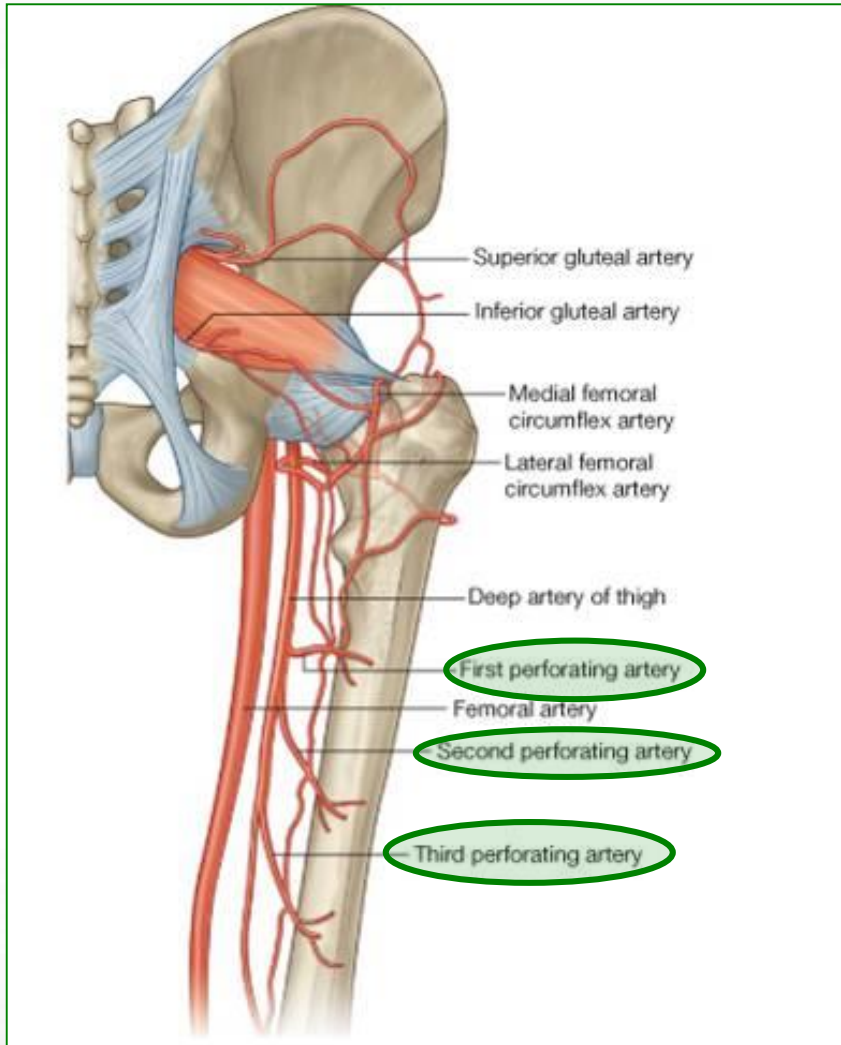
- Flexes and medially rotates the leg at the knee joint;
- Extends the thigh at the hip.

# ADDUCTOR MAGNUS (HAMSTRING PART)



- **Origin:**
- Ischial ramus and **ischial tuberosity**
- **Insertion:**
- **Adductor tubercle** of the **medial condyle** of the **femur**.
- **Nerve supply:**
- **The tibial** portion of the **sciatic**.
- **Action:**
- Extends the thigh at the hip joint.

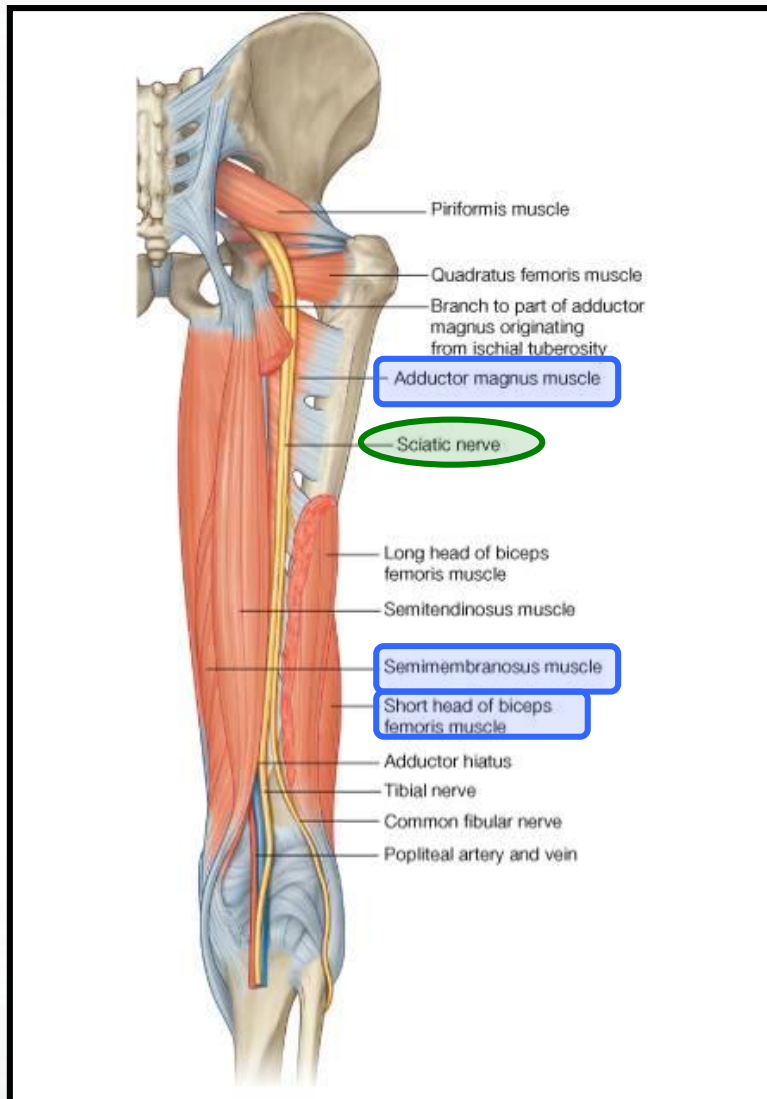
## BLOOD SUPPLY



- The **four perforating branches** of the **profunda femoris artery** (**deep artery of thigh**) provide a rich blood supply to this compartment.
- The **profunda femoris vein** drains the greater part of the blood from the compartment.



# NERVE SUPPLY



- **Sciatic Nerve**
- The **sciatic nerve**, a branch of the sacral plexus (**L4 and 5; S1, 2, and 3**), leaves the gluteal region as it descends in the midline of the thigh.
- It is **overlapped posteriorly** by the adjacent margins of the biceps femoris and semimembranosus muscles.
- **It lies on** the posterior aspect of the adductor magnus.
- In the lower third of the thigh it ends by dividing into the **tibial** and **common peroneal nerves**.

***THANK YOU***