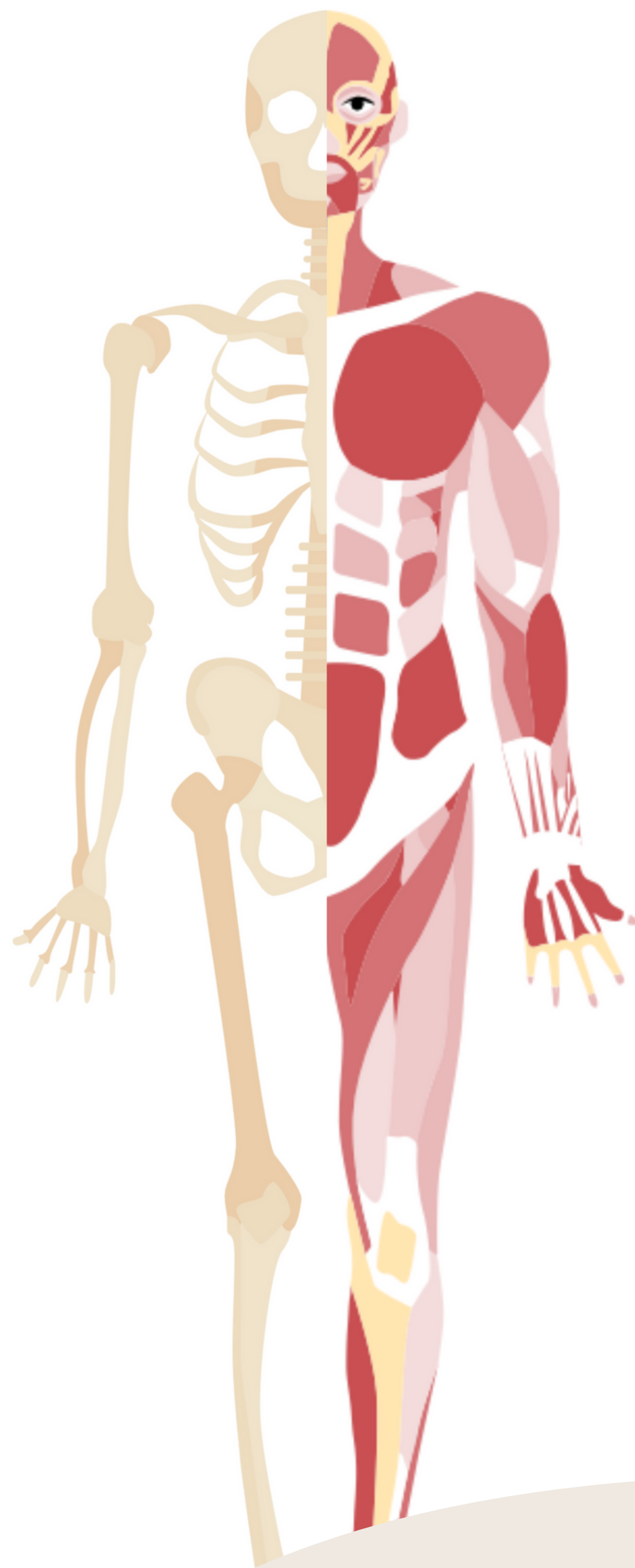


# Lecture 14

# GLUTEAL REGION & BACK OF THE THIGH

## OBJECTIVES

- **3 Gluteal Muscles:** Gluteus maximus, medius and minimus.
- **Other 5 Small Muscles:** Piriformis, Obturator internus, Superior gemellus, Inferior gemellus and Quadratus femoris.
- **Nerves and Vessels.**
- **Foramina:**
  1. Greater Sciatic Foramen.
  2. Lesser Sciatic Foramen.
- **Back of the Thigh:** Hamstring Muscles.



### Color Index:

- Main text
- Boys' Slides
- Girls' Slides
- Important
- Dr's Notes
- Extra



Editing File

# Contents of Gluteal Region:

## Muscles

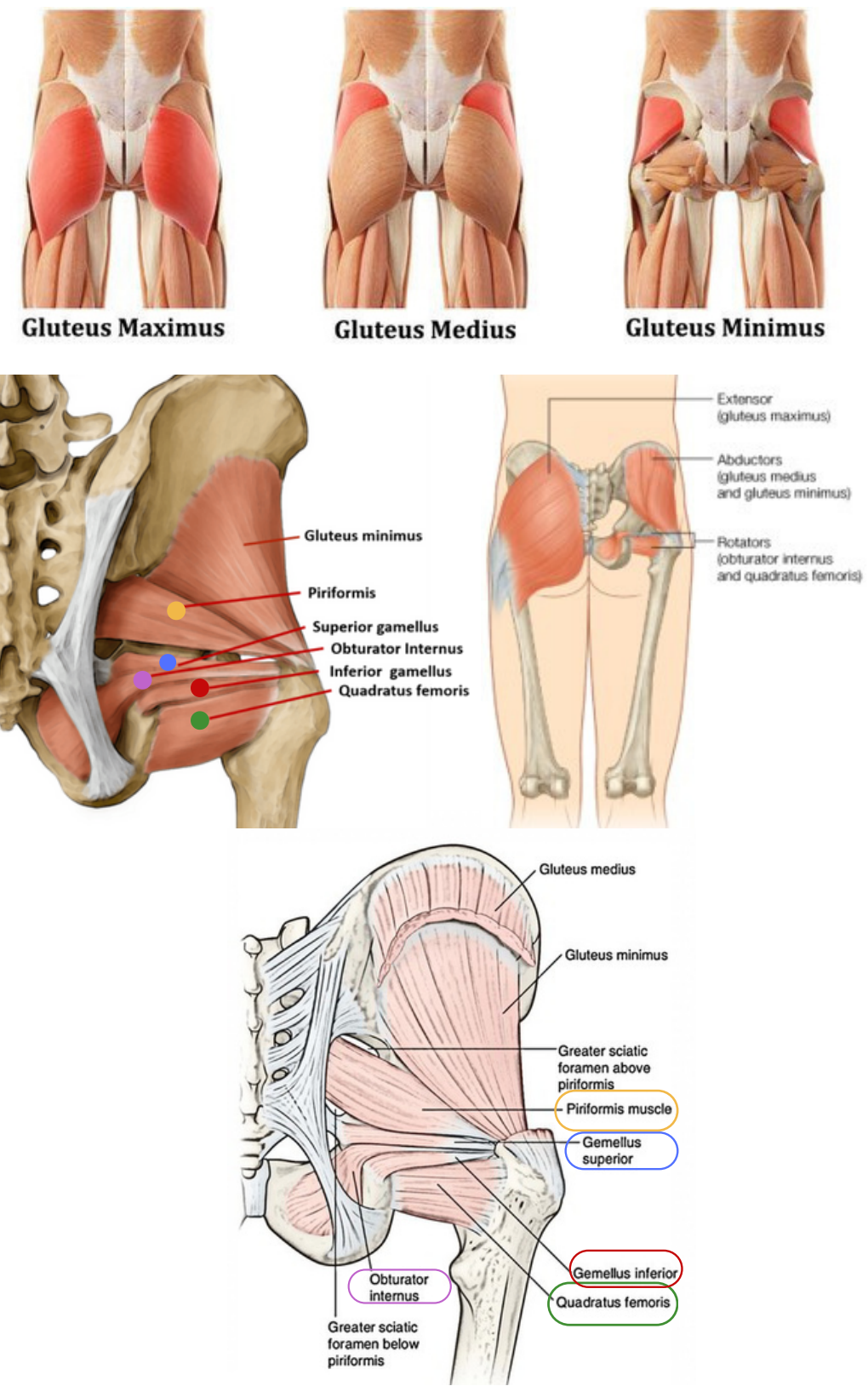
### A- Glutei:

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

### B- Group of small muscles:

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

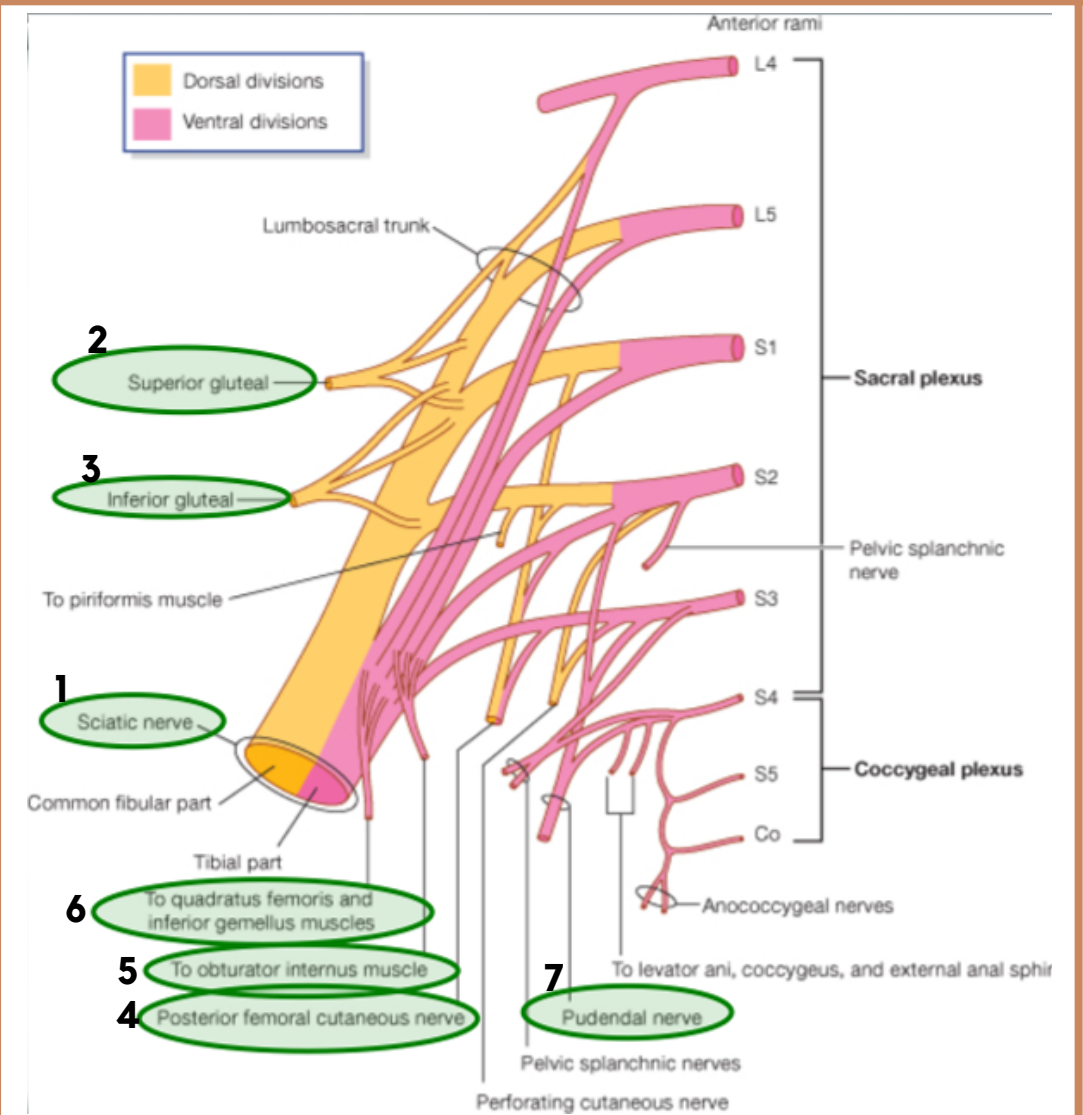
(All 5 muscles do lateral rotation)



## Nerves

(All from sacral plexus):

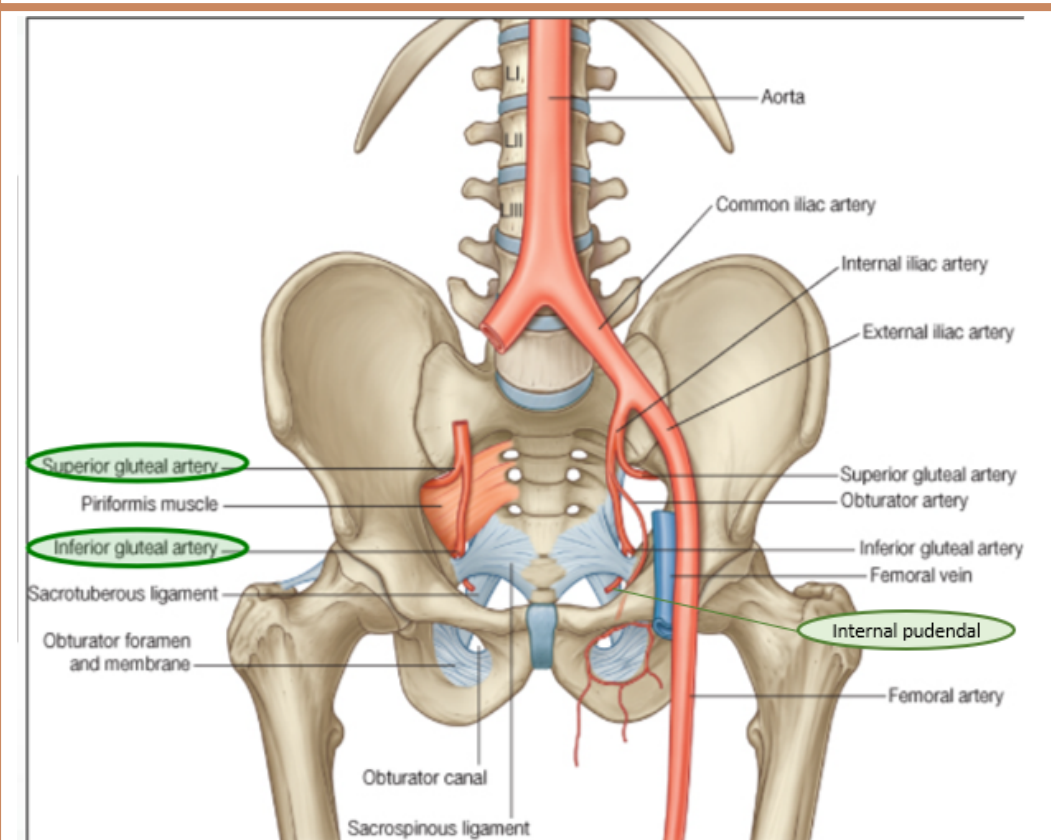
- 1] Sciatic nerve. (the largest and most important)
- 2] Superior gluteal nerves
- 3] Inferior gluteal nerves
- 4] Posterior cutaneous nerve of thigh.
- 5] Nerve to obturator internus
- 6] Nerve to quadratus femoris.
- 7] Pudendal nerve.



## Vessels

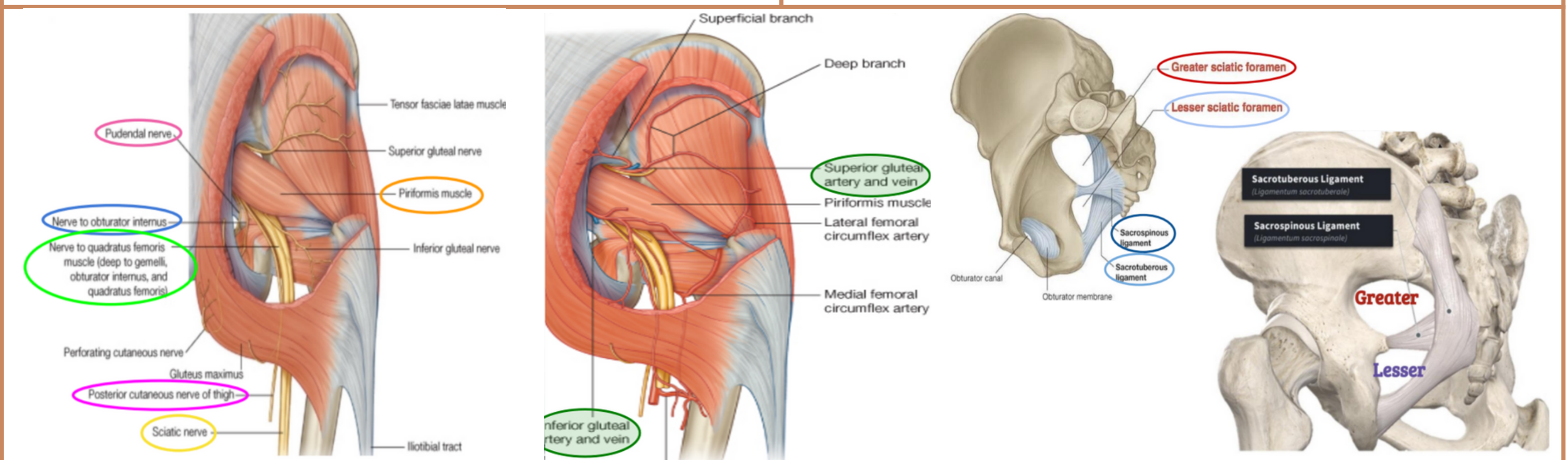
(All from **internal iliac vessels**):

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

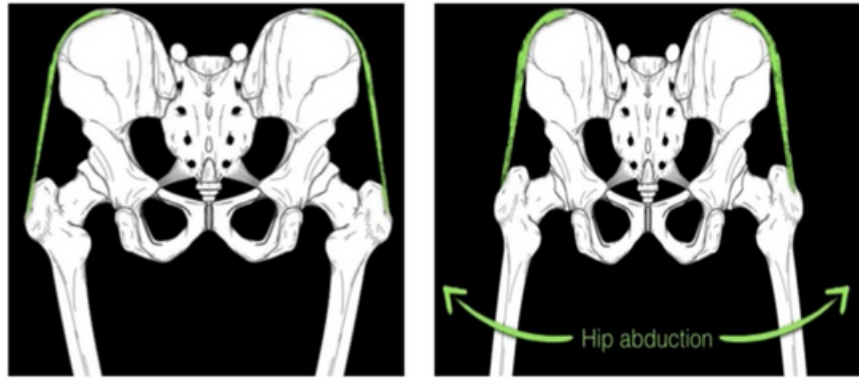
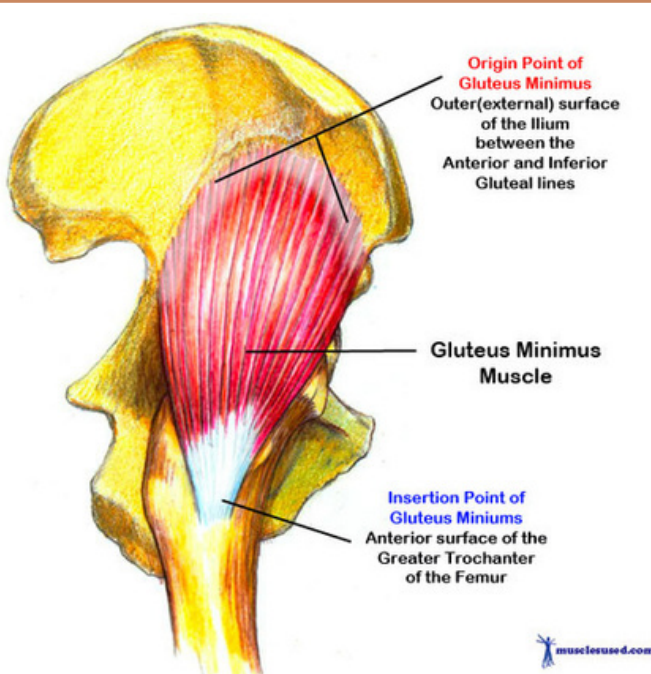
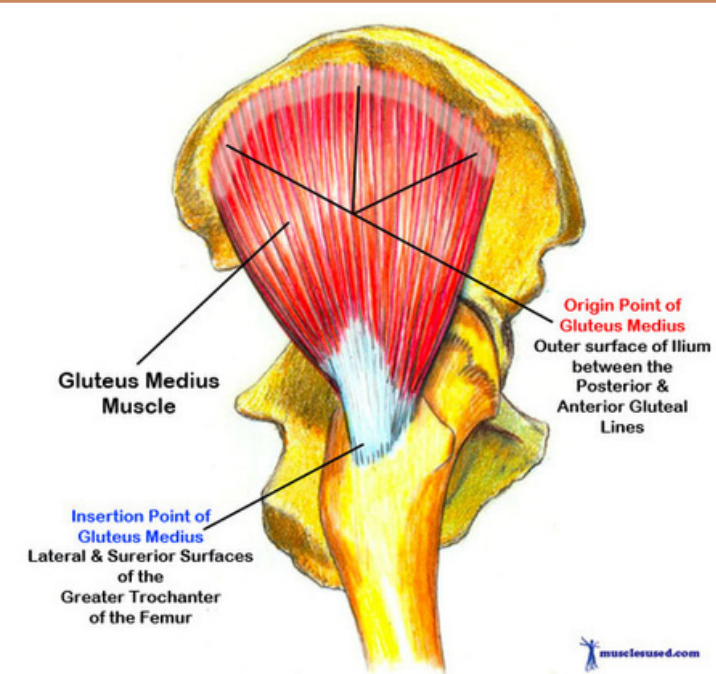
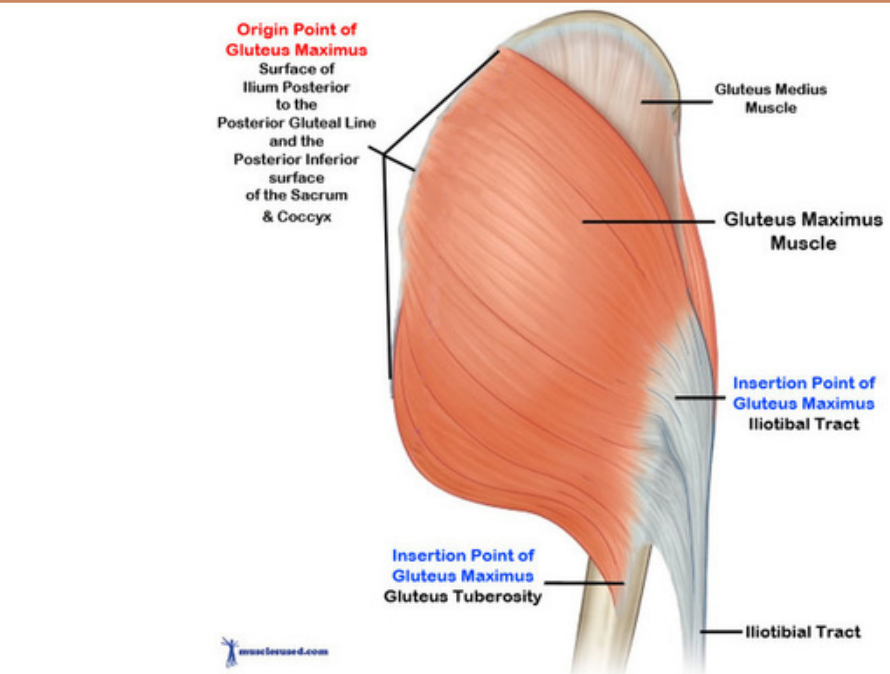
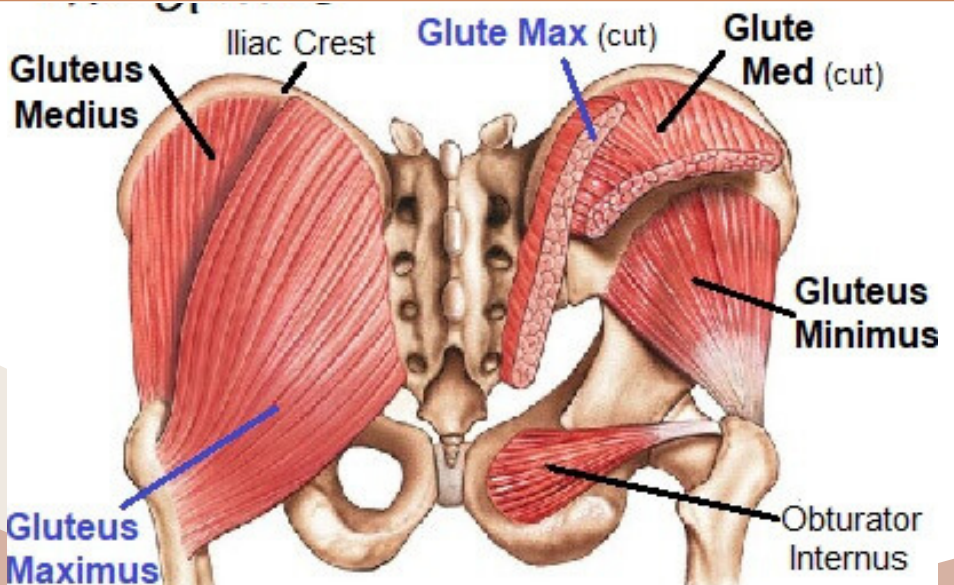
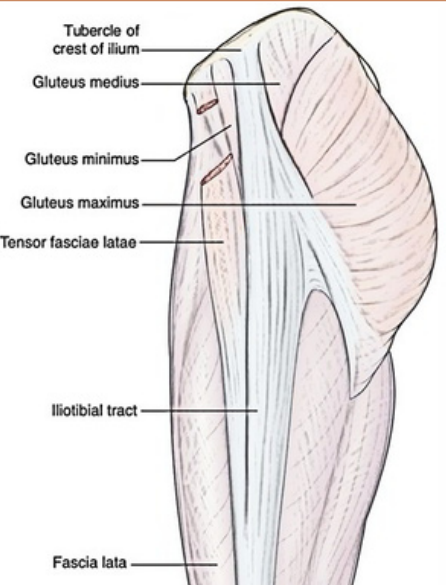
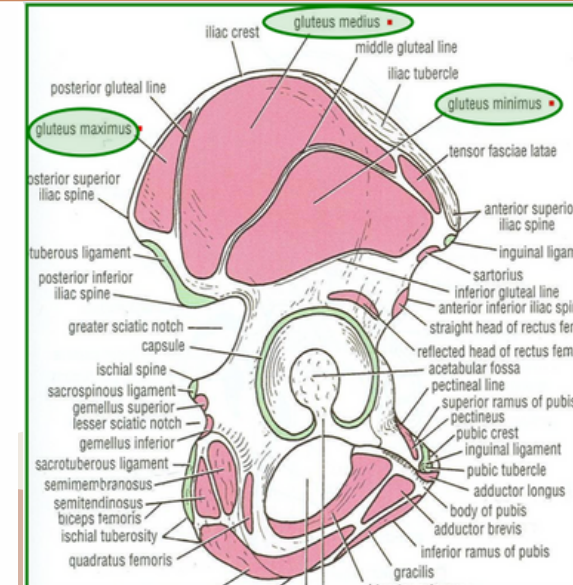


# Greater & Lesser Sciatic Foramen:


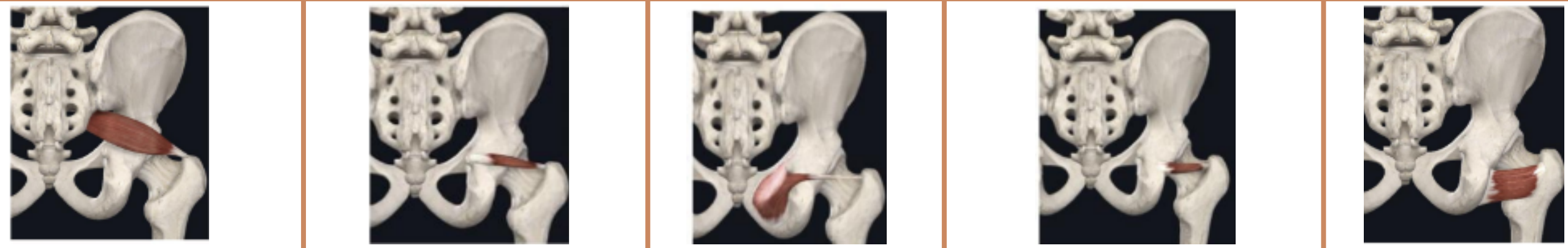
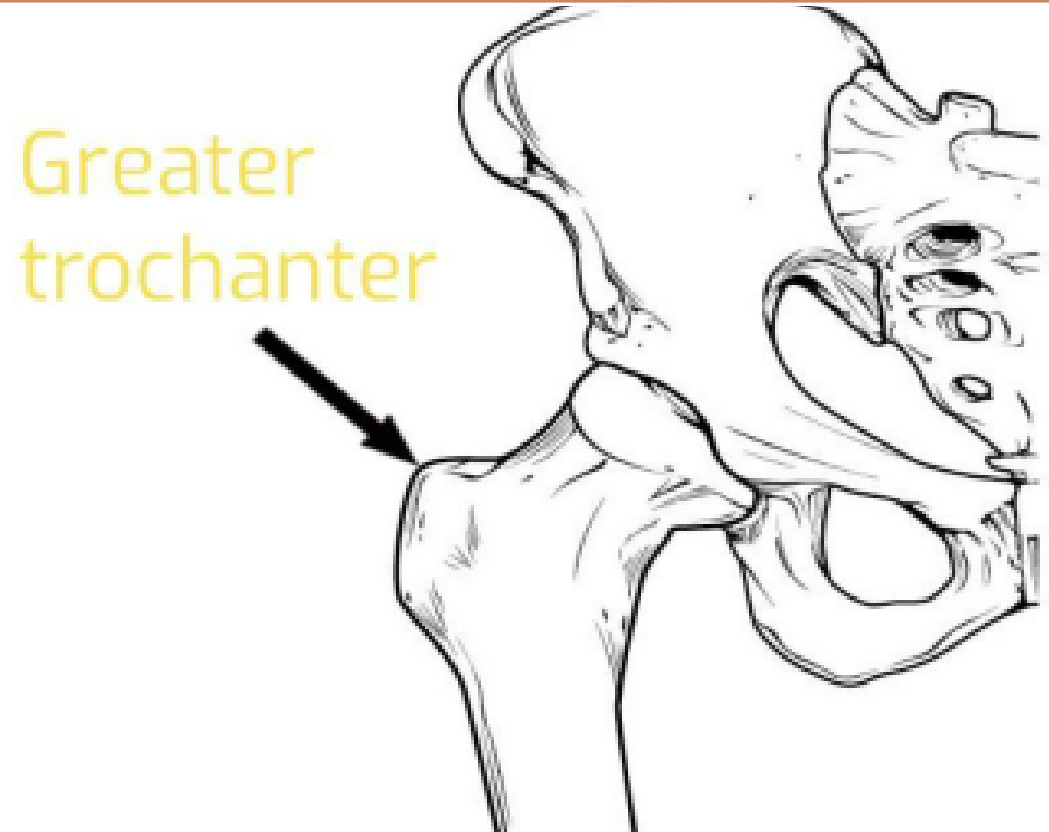
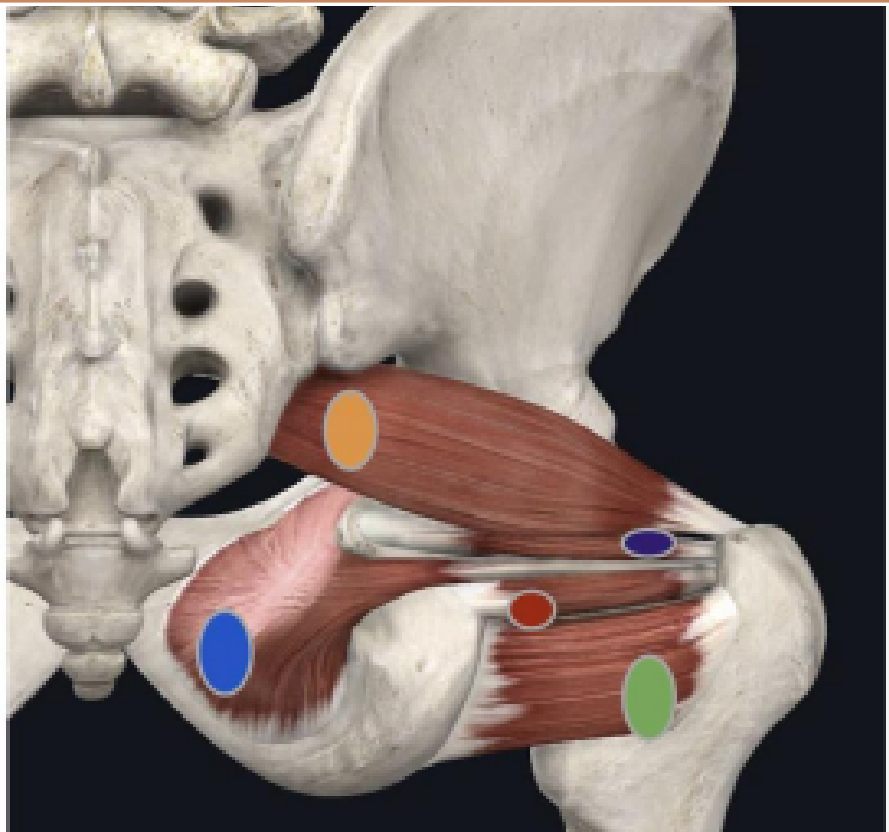
Greater sciatic foramen	Lesser sciatic foramen
<p>Greater sciatic notch of hip bone is transformed into <b>foramen</b> by <b>Sacrotuberous &amp; sacrospinous ligaments</b>.</p>	<p>Lesser sciatic notch of hip bone is transformed into <b>foramen</b> by <b>Sacrotuberous &amp; sacrospinous ligaments</b>.</p>
<p>Structures passing through <u>Greater</u> sciatic foramen:</p> <ul style="list-style-type: none"> <li>■ <b>Piriformis</b> muscle. (landmark for greater sciatic foramen)</li> <li><b>Above piriformis:</b> <ul style="list-style-type: none"> <li>-Superior gluteal nerves &amp; vessels.</li> </ul> </li> <li><b>Below_piriformis:</b> <ul style="list-style-type: none"> <li>-Inferior gluteal nerves &amp; vessels.</li> <li>■ -Sciatic nerve.</li> <li>■ -Posterior cutaneous nerve of thigh.</li> <li>■ -Nerve to quadratus femoris.</li> <li>■ -Nerve to obturator internus.*</li> <li>■ -Pudendal Nerve.*</li> <li>■ -Internal pudendal vessels.*</li> </ul> </li> </ul> <p>*In both greater and lesser sciatic foramen</p> <p><b>Important:</b> You should know where veins or vessels pass through, and whether they pass above or below.</p>	<p>Structures passing through <u>Lesser</u> sciatic foramen:</p> <ul style="list-style-type: none"> <li>■ -Tendon of obturator internus. only in lesser sciatic foramen</li> <li>■ -Nerve to obturator internus.</li> <li>■ -Pudendal nerve.</li> <li>■ -Internal pudendal vessels._</li> </ul> <p><b>(no sciatic nerve)</b></p> <p>Tendon of obturator internus only in lesser sciatic foramen while the rest of them can go into Greater Sciatic foramen</p>



# Glutei Muscles:

Muscles	Gluteus Minimus	Gluteus Medius	Gluteus Maximus
Origin	Anterior part of the gluteal surface of ilium	Middle part of the gluteal surface of ilium	-Posterior part of the gluteal surface of ilium - <b>Main origin of gluteus maximus:</b> Back of sacrum & coccyx & back of Sacrotuberous ligament
Insertion	Anterior surface of the greater trochanter	lateral surface of the greater trochanter	- <b>Main insertion:</b> iliotibial tract - <b>Other insertion:</b> gluteal tuberosity of the femur
Action	<p>-<b>Abduction &amp; Medial rotation</b> of hip joint, and if the hip flexed, medially (internally) rotation.</p> 		<p>-<b>Extension &amp; Lateral rotation</b> of the hip joint. -Through its attachment to iliotibial tract, it stabilizes the femur on the tibia during standing.</p>
Nerve	Superior gluteal nerve. L4,5; S1		Inferior gluteal nerve. L5; S1,2
Pictures			
			

# Small Muscles (Lateral Rotators):

Muscles	Piriformis	Superior Gemellus	Obturator Internus	Inferior Gemellus	Quadratus Femoris
Origin	Pelvic surface of middle 3 sacral vertebrae	Upper part of lesser sciatic notch	Side wall of the pelvis	Lower part of lesser sciatic notch	Ischial tuberosity
Insertion	Greater trochanter	Into tendon of Obturator Internus	Greater trochanter	Into tendon of Obturator Internus	Quadratus tubercle
Nerve Supply	Anterior rami of S1, 2 nerve supply ماله اسم محدد	Nerve to Obturator internus		Nerve to Quadratus femoris	
Action	All have <b>Similar</b> Action: 1. Lateral rotation of the hip joint. 2. Control movement of the hip joint.				
Picture					
	 <p>Greater trochanter</p>				

# Nerves:

Nerve	Superior gluteal nerve	Inferior gluteal nerve	Nerve to quadratus femoris
Course	Passes through <b>greater sciatic foramen, above piriformis.</b>	Passes through <b>greater sciatic foramen, below piriformis.</b>	
Branches	<b>1- Muscular</b> to gluteus medius, minimus, and tensor fasciae Lata muscle. <b>2. Articular</b> to hip joint.	<b>Gluteus Maximus</b>	<b>1- Muscular</b> to quadratus femoris and inferior gemellus. <b>2. Articular</b> to hip joint.
Picture			

# Back of the Thigh (Hamstrings):

Muscles	Biceps Femoris	Semitendinosus	Semimembranosus	Adductor Mangus (Hamstring Part)
Origin	<p><b>Long Head:</b> from the ischial tuberosity.</p> <p><b>Short Head:</b> from the linea aspera.</p>	Ischial tuberosity		Ischial ramus and ischial tuberosity
Insertion	Head of the fibula	<p>Upper part of the medial surface of the shaft of the tibia</p> <p>(سنة جدك سعيدة SGS or).</p> <p>S= Sartorius</p> <p>G= Gracilis</p> <p>S= Semitendinosus</p> <p>الدكتور يقول كل الإنسيرشن حقتهم في نفس المكان الي هو Tibia</p>	<p>Posterior surface of the medial condyle of the tibia.</p> <p>It forms the oblique popliteal ligament, which reinforces the capsule on the back of the knee joint.</p>	Adductor (من اسمه) tubercle of the medial condyle of the femur.
Nerve Supply	<p><b>Long Head:</b> Tibial part of the sciatic.</p> <p><b>Short Head:</b> Common peroneal part of the sciatic.</p>	Tibial part of the sciatic		
Action	<ol style="list-style-type: none"> <li>1. Flexion of knee.</li> <li>2. Lateral rotation of flexed leg.</li> <li>3. <b>Long Head:</b> Extends the hip.</li> </ol>	<ol style="list-style-type: none"> <li>1. Flexes and medially rotates the leg at the knee joint.</li> <li>2. Extends the thigh at the hip joint.</li> </ol>		<ol style="list-style-type: none"> <li>1. Extends the thigh at the hip joint.</li> </ol> <p>الي بالصورة هي ما تعدت ال knee فخلاص ما له علاقة ب knee joint فقط ال hip joint.</p>
Picture				
Sciatic Nerve	<ul style="list-style-type: none"> <li>• <b>Sciatic Nerve:</b> is a branch of the sacral plexus (L4 and L5; S1, 2, and 3) that leaves the gluteal region as it descends in the midline of the thigh. <ul style="list-style-type: none"> <li>-<b>Site:</b> It lies on the posterior aspect of the adductor magnus.</li> <li>-<b>Termination:</b> In the lower third of the thigh it ends by dividing into <b>tibial</b> and <b>common peroneal nerves</b>.</li> </ul> </li> </ul>			
Blood Supply	Branches of the <b>Profunda Femoris Artery</b> .			



# MCQs

## 1

Which is NOT part of small muscles of gluteal region ?

A) Quadratus femoris	B) Obturator internus	C) Gluteus minimus	D) Piriformis
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## 2

A common structure between greater & lesser sciatic ?

A) Internal pudendal vessels	B) Tendon of obturator internus	C) Nerve to quadratus femoris	D) superior gluteal nerves
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## 3

Nerve that supply the gluteus Maximus muscle ?

A) Superior gluteal nerve	B) Femoral nerve	C) Sciatic nerve	D) Inferior gluteal nerve
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## 4

Gluteus maximus main insertion ?

A) iliotibial tract	B) Anterior surface of the greater trochanter	C) Quadrate tubercle	D) Lesser trochanter
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## 5

The origin of Piriformis is ?

A) Pelvic surface of middle 3 sacral vertebra	B) Middle part of the gluteal surface ilium	C) Ischial ramus and ischial tuberosity	D) Greater trochanter
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1-C 2-A 3-D 4-A 5-A



# MCQs

6

Which of the following hamstring muscles doesn't extend the thigh at the hip joint ?

A) Short head of biceps femoris

B) Long head of biceps femoris

C) Semitendinosus

D) Semimembranosus

7

Which one is supplied by (N to obturator internus) ?

A) Superior Gemellus

B) Obturator Internus

C) Inferior Gemellus

D) A&B

8

Which of the following supplies the piriformis ?

A) Anterior rami of S1,2

B) Superior gluteal N

C) Sciatic N

D) Posterior rami of S1,2

9

A structure passing through greater sciatic ONLY ?

A) Pudendal nerve

B) Sciatic nerve

C) Internal pudendal vessels

D) Tendon of obturator internus

10

A structure passing through lesser sciatic ONLY ?

A) Posterior c. nerve of thigh

B) Pudendal nerve

C) Tendon of obturator internus

D) Nerve to obturator internus



6-A 7-D 8-A 9-B 10-C

# SAQs

1

List three lateral rotators of hip joint

 Gluteus maximus, Inferior Gemellus, Quadratus femoris

2

What structures pass through both the greater and lesser sciatic foramen?

 Nerve to obturator internus, pudendal nerve, internal pudendal vessels

3

What is the action of adductor magnus?

 Extends the thigh at the hip joint

4

What is the nerve supply the hamstrings?

 Tibial nerve except for the short head of biceps femoris which is supplied by common peroneal nerve



# LECTURE DONE BY

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