Lower Limb Muscles

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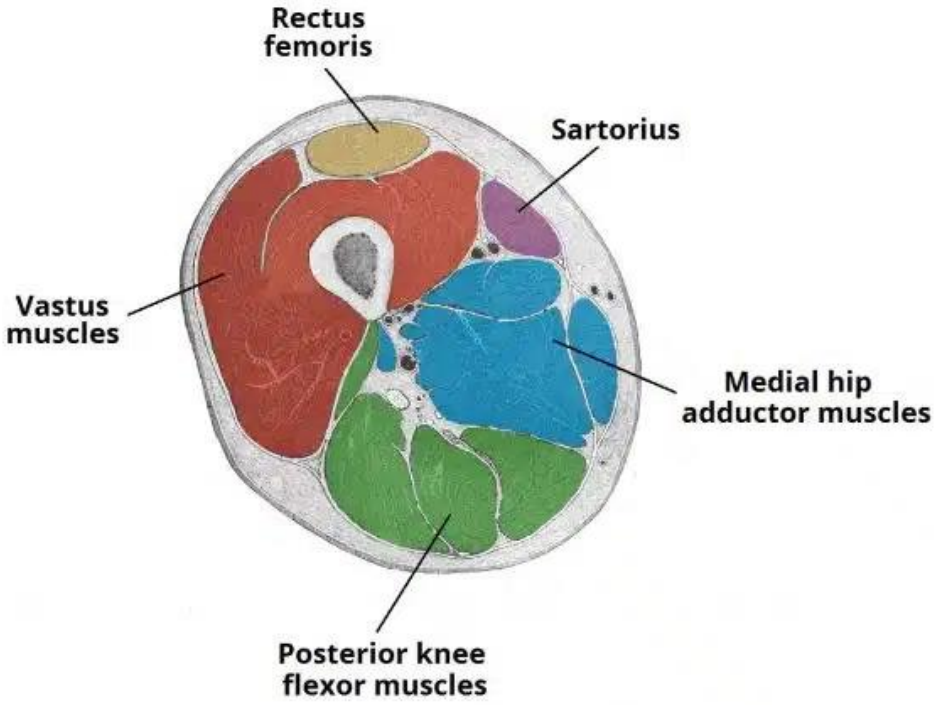
The muscles of the thigh can be divided into three groups: anterior, medial, and posterior.

❖ Anterior:

The anterior group occupies the anterior compartment situated at the front of the thigh. and includes:

A. the sartorius
B. quadriceps femoris:it is one large muscle composed of four smaller ones called:

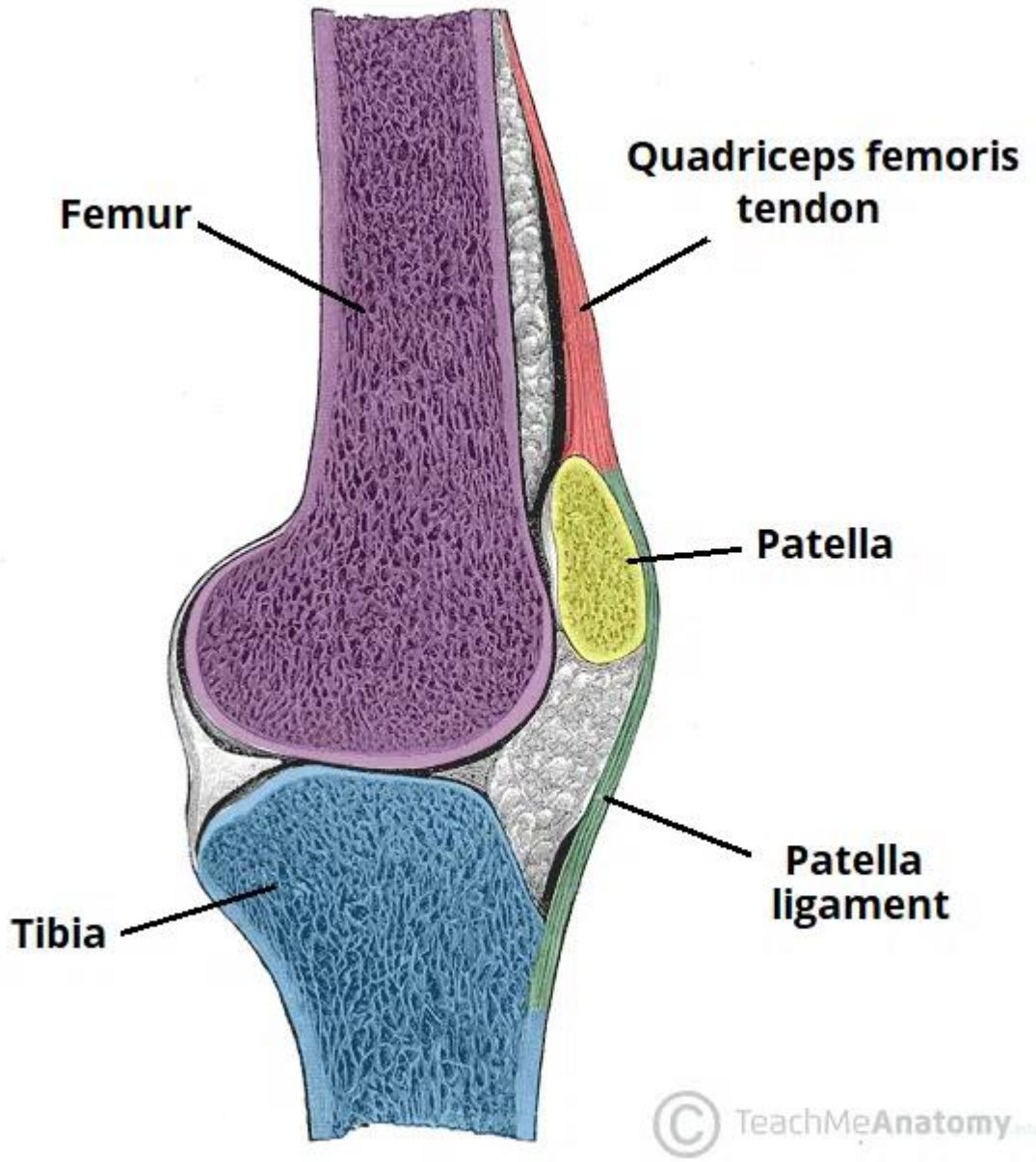
1) rectus femoris
2) vastus medialis,
3) vastus lateralis
4) vastus intermedius



Quadriceps Femoris

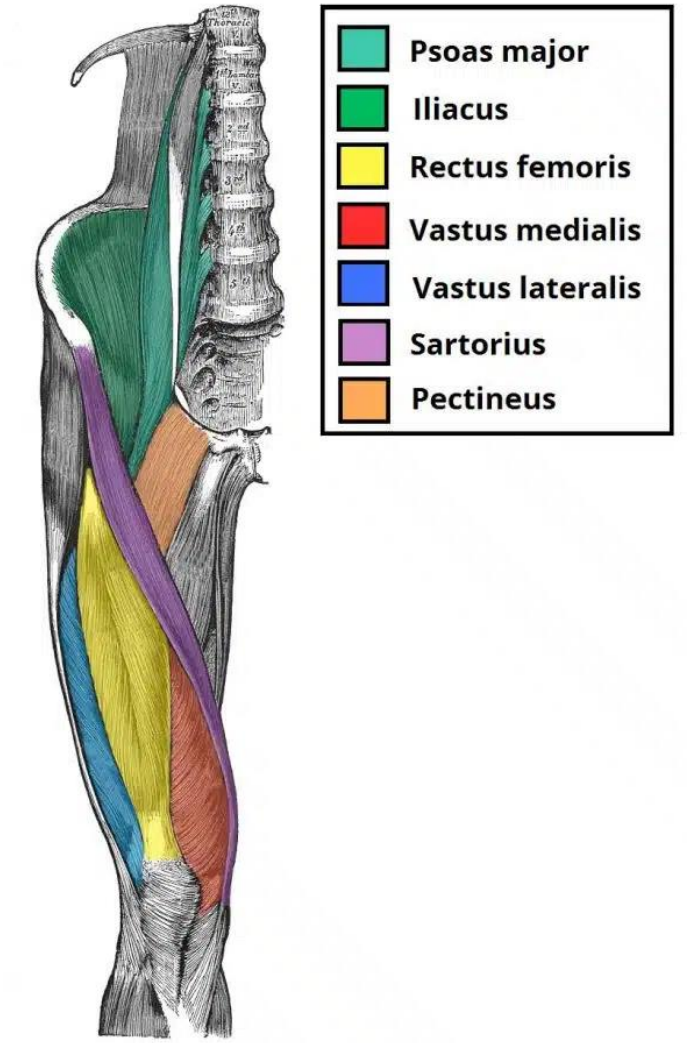
The quadriceps femoris consists of four individual muscles – the three vastus muscles and the rectus femoris. It forms the main bulk of the anterior thigh and is one of the most powerful muscles in the body.

The four muscles collectively insert onto the patella via the quadriceps tendon. The patella, in turn, is attached to the tibial tuberosity by the patella ligament.



Action: The muscles of the **anterior compartment of the thigh** are a group of muscles that (mostly) act to extend the lower limb at the knee joint.

Nerve supply: They are collectively innervated by the **femoral nerve** (L2-L4)
Blood supply: they receive arterial supply from the femoral artery.

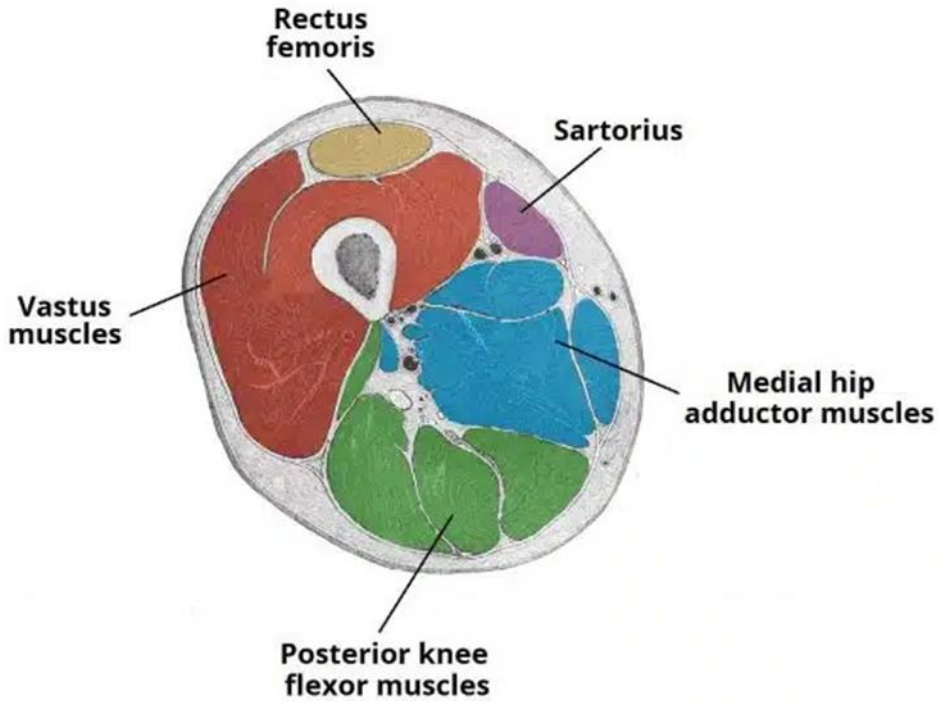


The medial group

The medial group occupies the medial compartment of the thigh.

There are **five** muscles in this group Pectineus

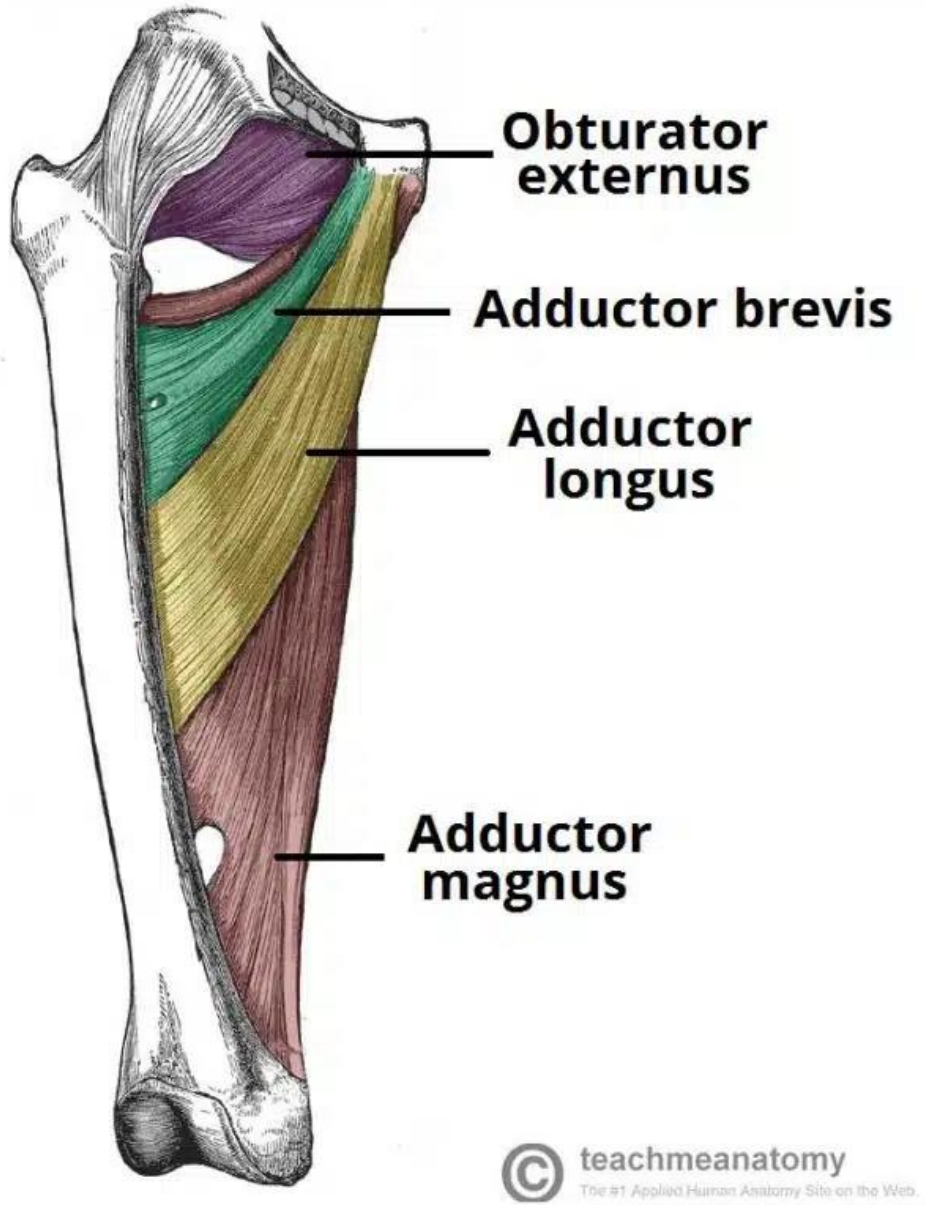
1) adductor magnus
2) adductor minimus
3) adductor longus
4) adductor brevis
5) gracilis.



The muscles in the **medial compartment of the thigh** are collectively known as the hip adductors.

<u>Nerve supply:</u> All the medial thigh muscles are innervated by the **obturator nerve**

<u>blood supply:</u> is through the obturator artery.



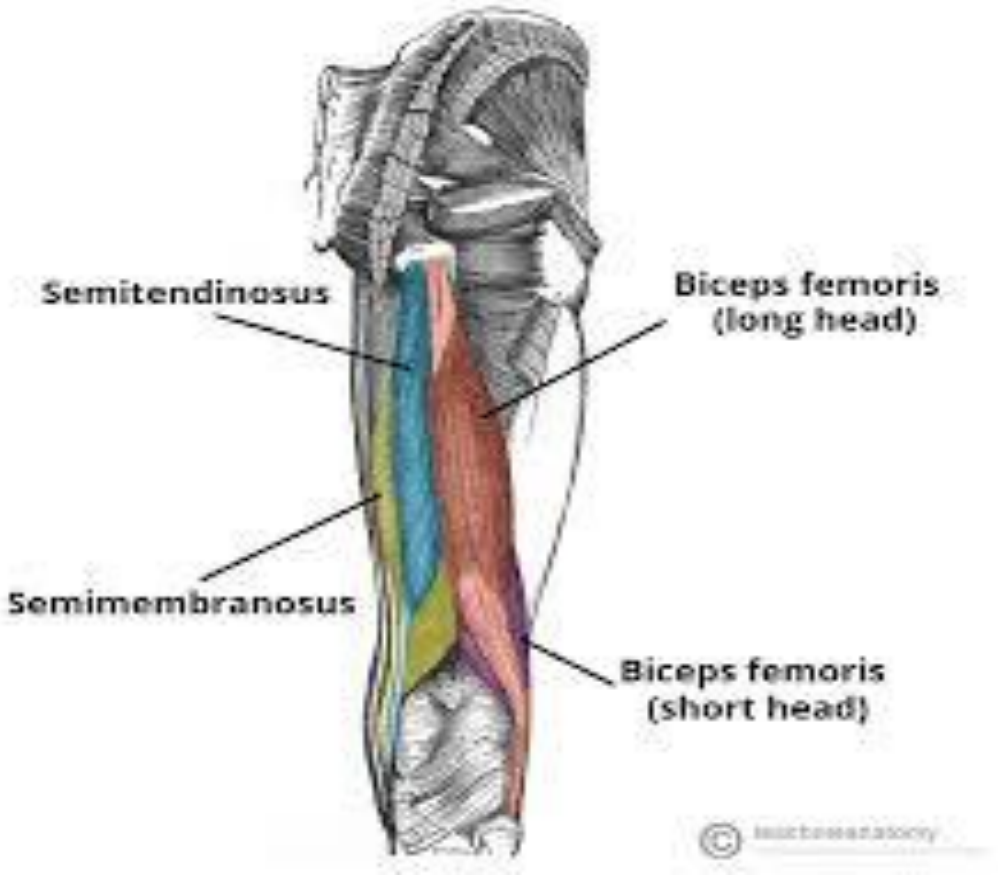
Posterior muscles of the thigh (hamstring)

The posterior muscle group is the smallest group, occupying the posterior compartment of the thigh. It contains the three hamstring muscles called the :

1) Semimembranosus
2) Semitendinosus
3) Biceps femoris

Adductor magnus (hamstring portion)

All supplied by Tibial division of Sciatic **EXCEPT** Short head of biceps – Common Peroneal (fibular) division

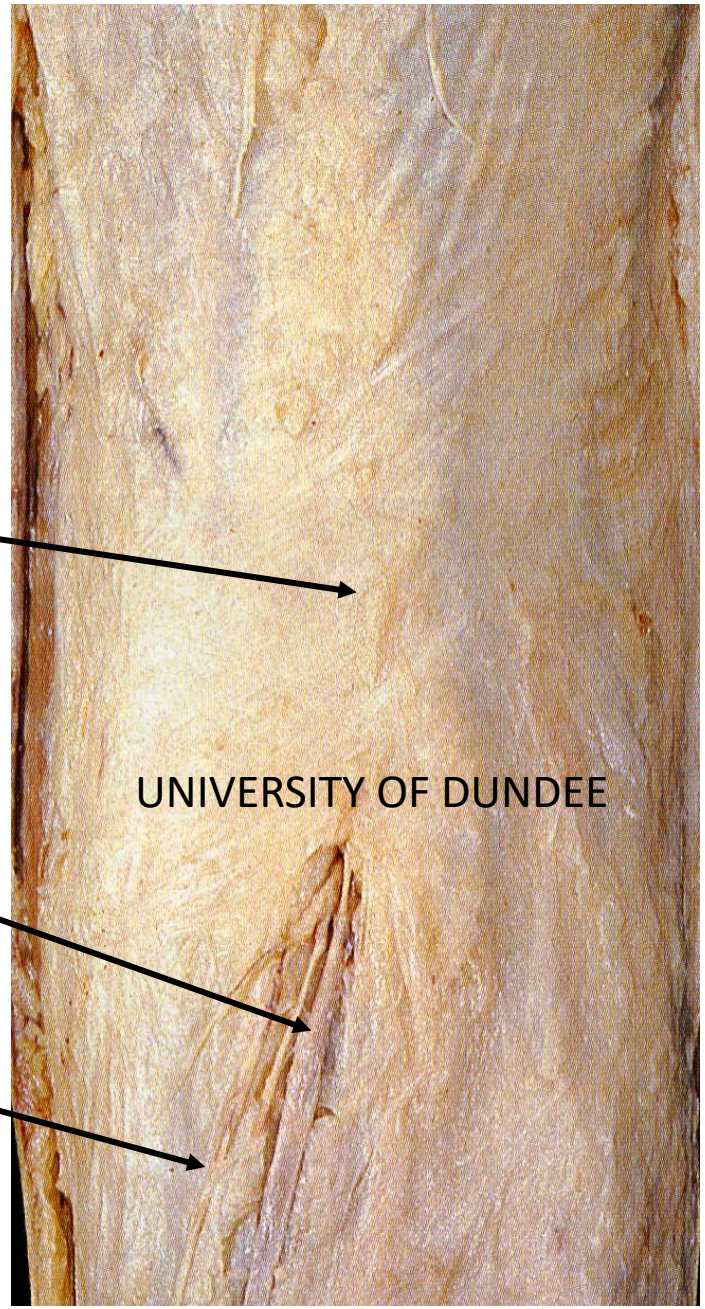


Popliteal fossa roof

Formed by deep fascia

Pierced by

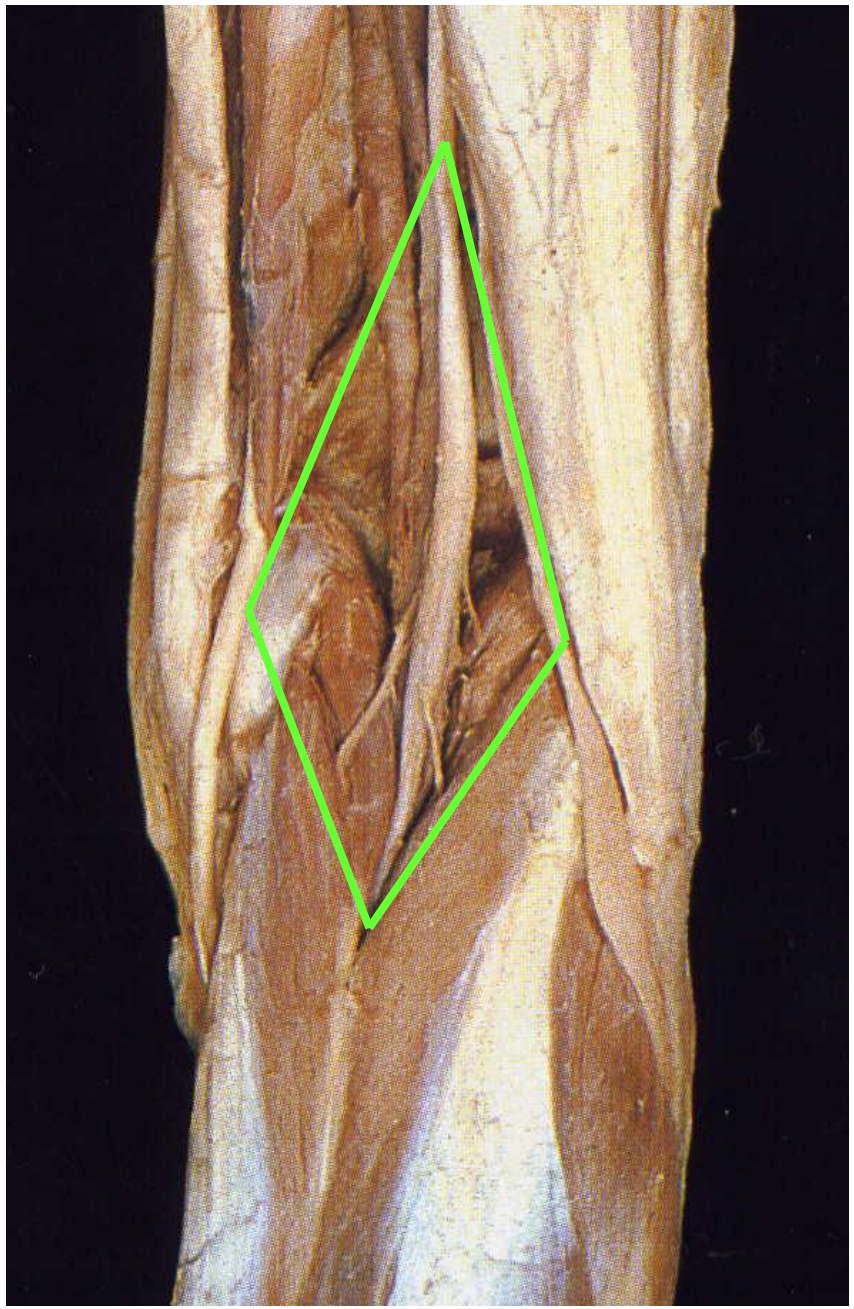
- short saphenous vein
- sural nerve



Popliteal fossa boundaries

Superiorly: Diverging tendons of Hamstrings

Inferiorly: Medial and Lateral heads of Gastrocnemius which converge at inferior angle



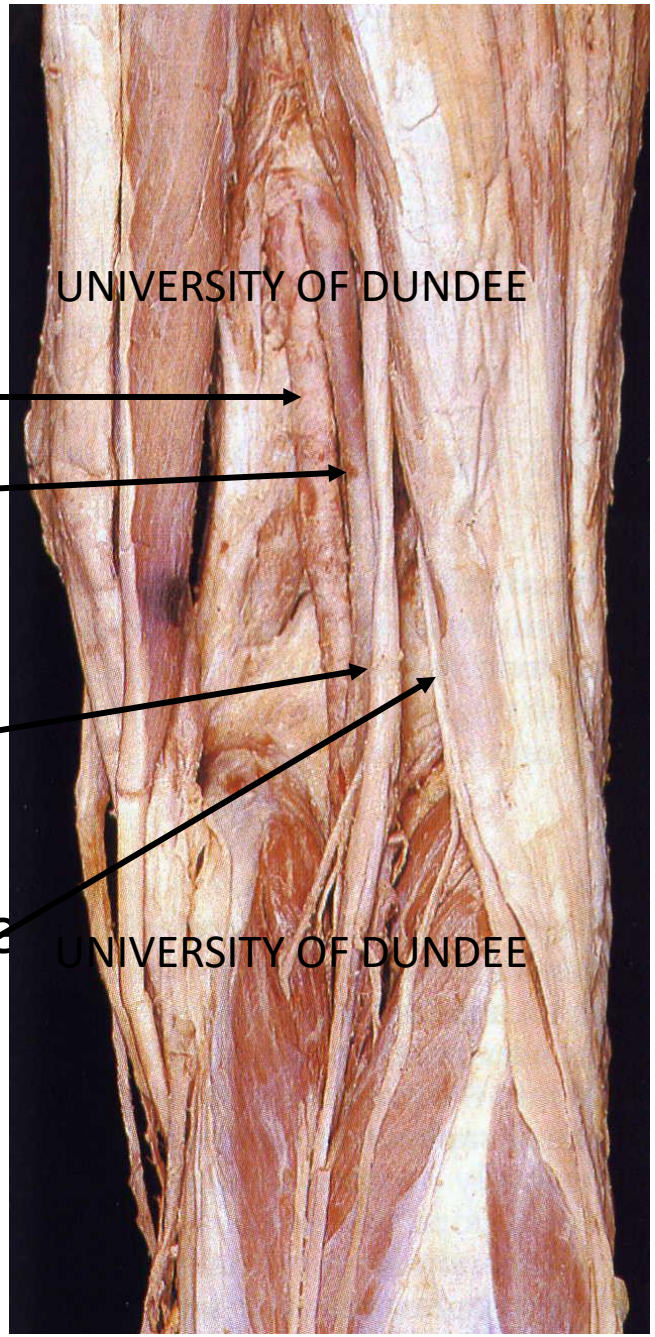
Popliteal fossa contents

Popliteal Artery

Popliteal Vein

Terminal Branches of Sciatic:

- Tibial Nerve
- Common Peroneal (Fibular) Nerve



Anterior Compartment Of The Leg

❖There are four muscles in the anterior compartment of the leg;

✓ **Tibialis Anterior,**

✓**Extensor Digitorum Longus,**

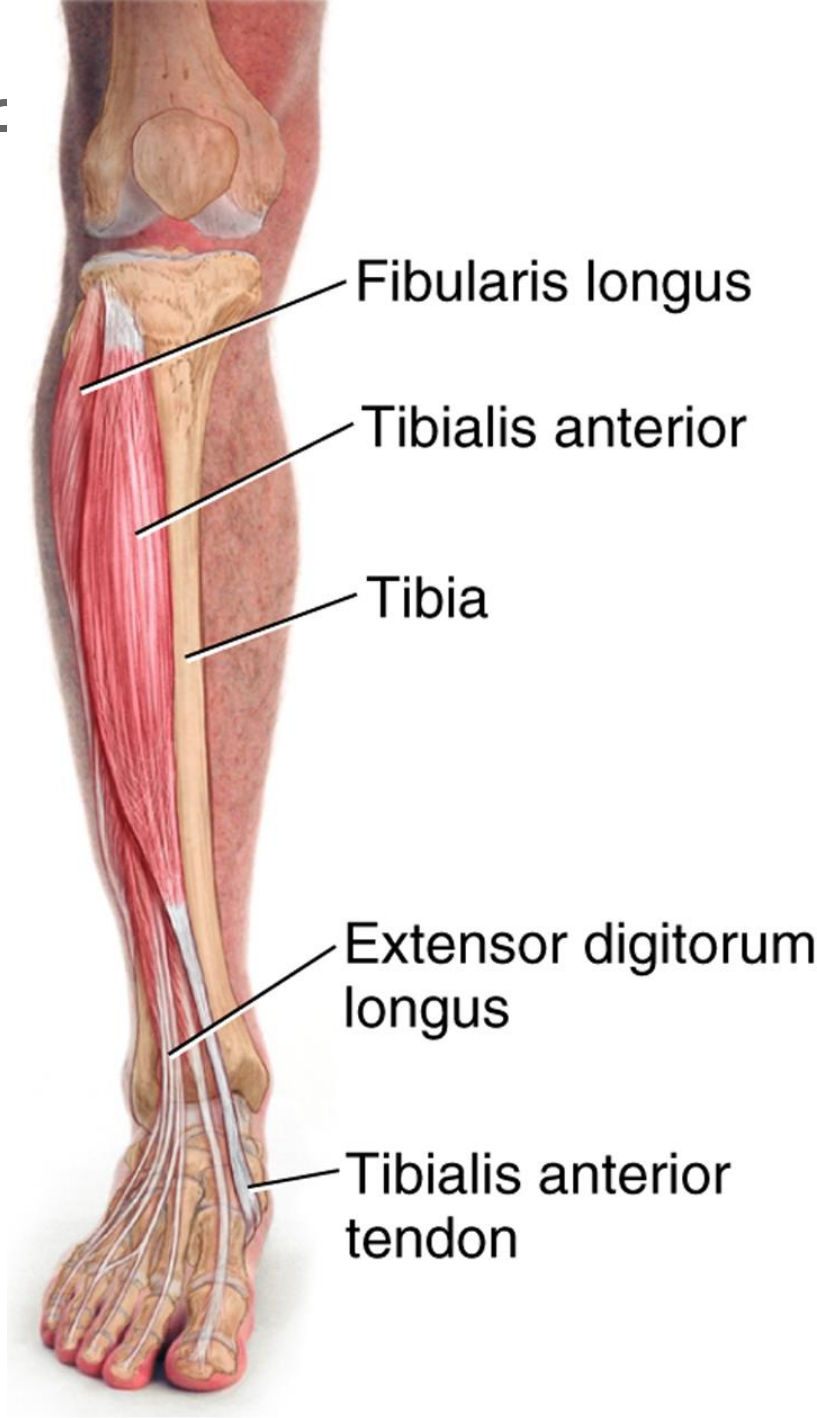
✓ **Extensor Hallucis Longus And**

✓**Peroneal (Fibularis) Tertius.**

❖Collectively, they act to: **DORSIFLEX** and **Invert** the foot at the ankle joint.

❖The **extensor digitorum longus** and **extensor hallucis longus** also extend the toes.

❖The muscles in this compartment are innervated by the **deep fibular nerve**, and blood is supplied via the **anterior tibial artery**.



Lateral compartment of the leg

❖There are two muscles in the lateral compartment of the leg;

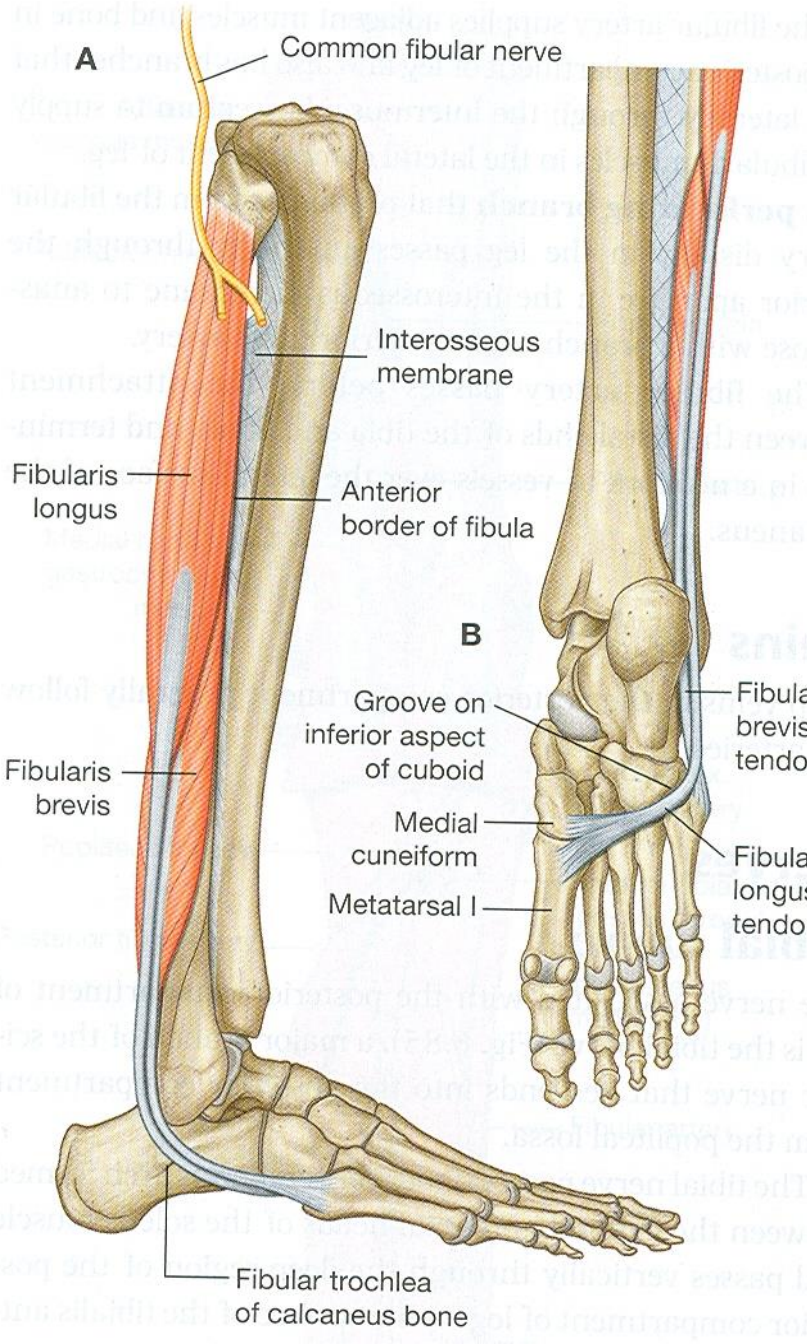
✓the **Peroneal** (**fibularis)longus**

✓**Peroneal** (**fibularis) brevis .**

❖The common function of the muscles is **eversion** – turning the sole of the foot outwards.

❖They are both innervated by the superficial fibular nerve.

❖*From the anatomical position, only a few degrees of eversion are possible. In reality, the job of these muscles is to 'fix' the medial margin of the foot during running, and prevent excessive inversion.*



The posterior compartment of the leg

- The posterior compartment of the leg contains **SEVEN MUSCLES**
- They organised into two layers – **SUPERFICIAL** and **DEEP**. The two layers are separated by a band of fascia.
- The posterior leg is the largest of the three compartments.
- Collectively, the muscles in this area **PLANTARFLEX** and **INVERT** the foot.
- They are innervated by the **TIBIAL NERVE**, a terminal branch of the sciatic nerve**.**

Superficial Posterior Muscles

- The superficial muscles form the characteristic ‘calf’ shape of the posterior leg.
- They all insert into the calcaneus of the foot (the heel bone), via the **calcaneal tendon**.
- To minimise friction during movement, there are two bursae (fluid filled sacs) associated with the calcaneal tendon:
- **Subcutaneous calcaneal bursa** – lies between the skin and the calcaneal tendon.
- **Deep bursa of the calcaneal tendon** – lies between the tendon and the calcaneus

❖**GASTROCNEMIUS:** is the most superficial of all the muscles in the posterior leg. It has two heads – medial and lateral, which converge to form a single muscle belly

Deep posterior Muscles of the leg

❖There are **FOUR MUSCLES** in the deep compartment of the posterior leg.

❖ One muscle, the popliteus, acts only on the knee joint. The remaining three muscles (tibialis posterior, flexor hallucis longus and flexor digitorum longus) act on the ankle and foot.

❖ **POPLITEUS:** is located superiorly in the leg. It lies behind the knee joint, forming the base of the popliteal fossa. It Laterally rotates the femur on the tibia – 'unlocking' the knee joint so that flexion can occur.
❖**TIBIALIS POSTERIOR:** is the deepest out of the four muscles. It lies between the flexor digitorum longus and the flexor hallucis longus.
❖**FLEXOR DIGITORUM LONGUS:** FDL is (surprisingly) a smaller muscle than the flexor hallucis longus. It is located medially in the posterior leg.
❖**FLEXOR HALLUCIS LONGUS:** is found on the lateral side of leg. This is slightly counter-intuitive, as it is opposite the great toe, which it acts on