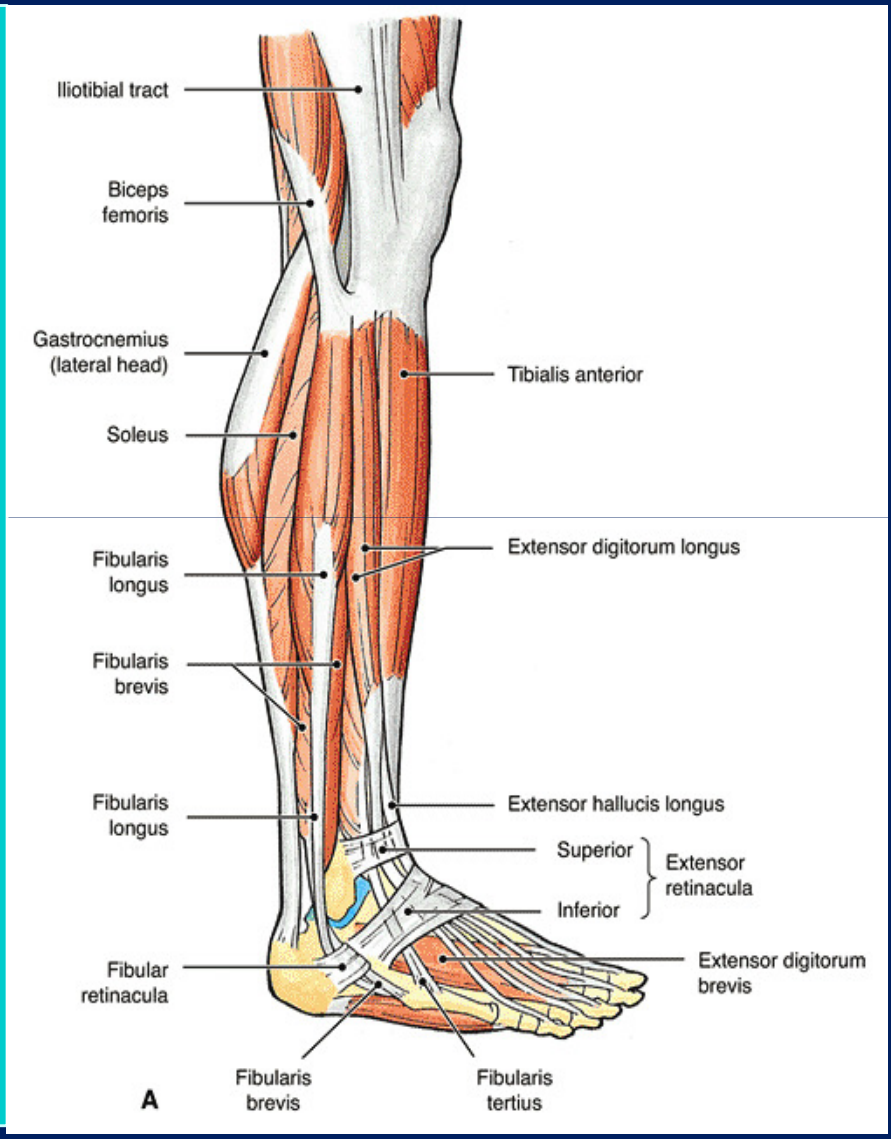
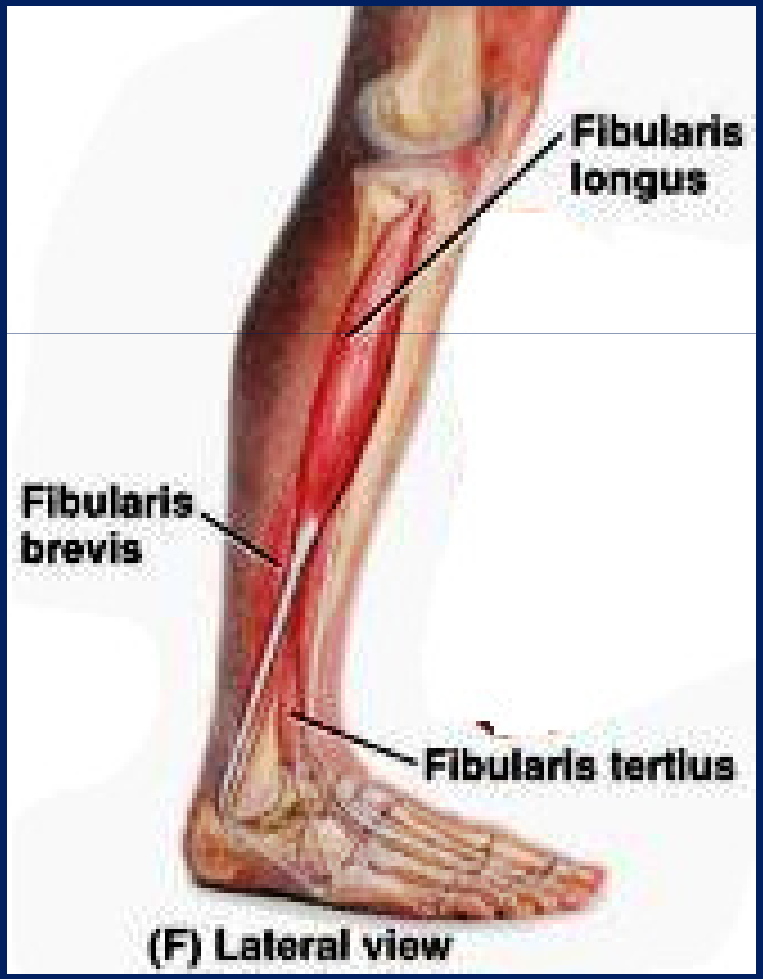

بسم الله الرحمن الرحيم

- Contents of the Lateral Fascial Compartment of the Leg:
  - Muscles
  - Vessels
  - Nerves



Contents of the Lateral Fascial Compartment of the Leg

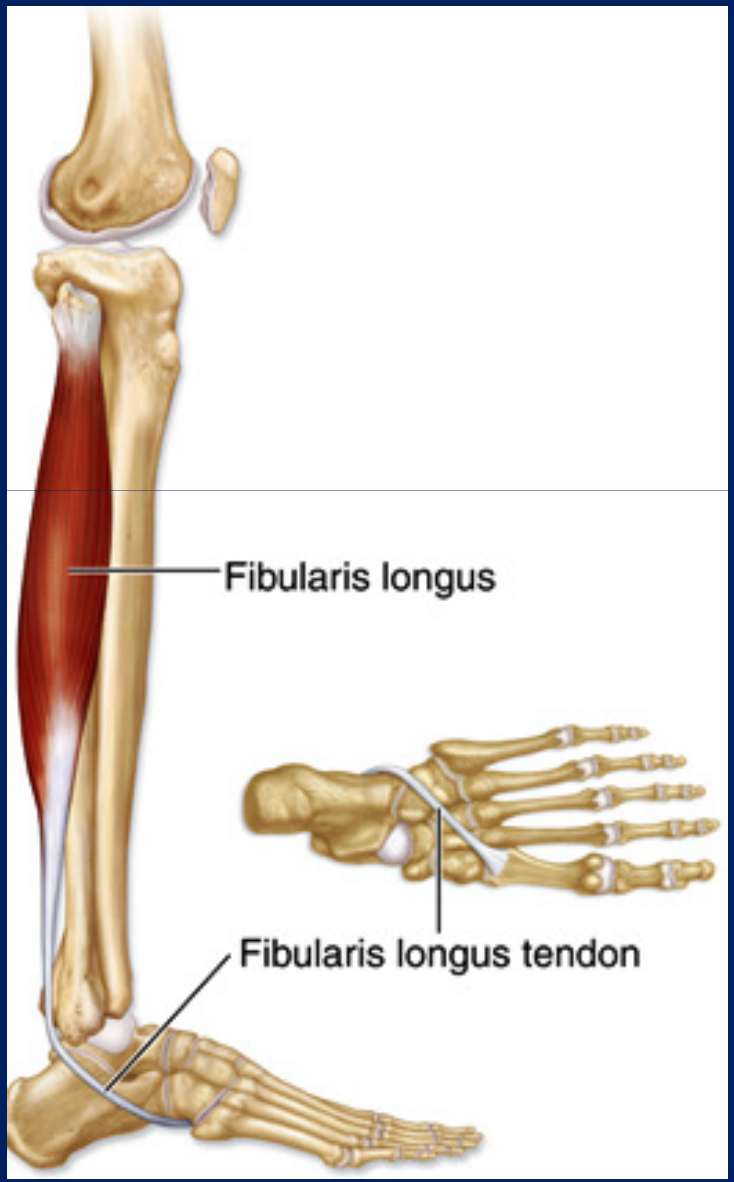
- Peroneus longus and
- peroneus brevis



Peroneus longus

- Origin:
- Lateral surface of shaft of fibula
- Insertion:

  Base of first metatarsal and the medial cuneiform
- Nerve supply:
  - Superficial peroneal nerve
  - L5; S1, 2
- Actions:Plantar flexes foot at ankle joint; everts foot at subtalar and transverse tarsal joints; supports lateral longitudinal and transverse arches of foot



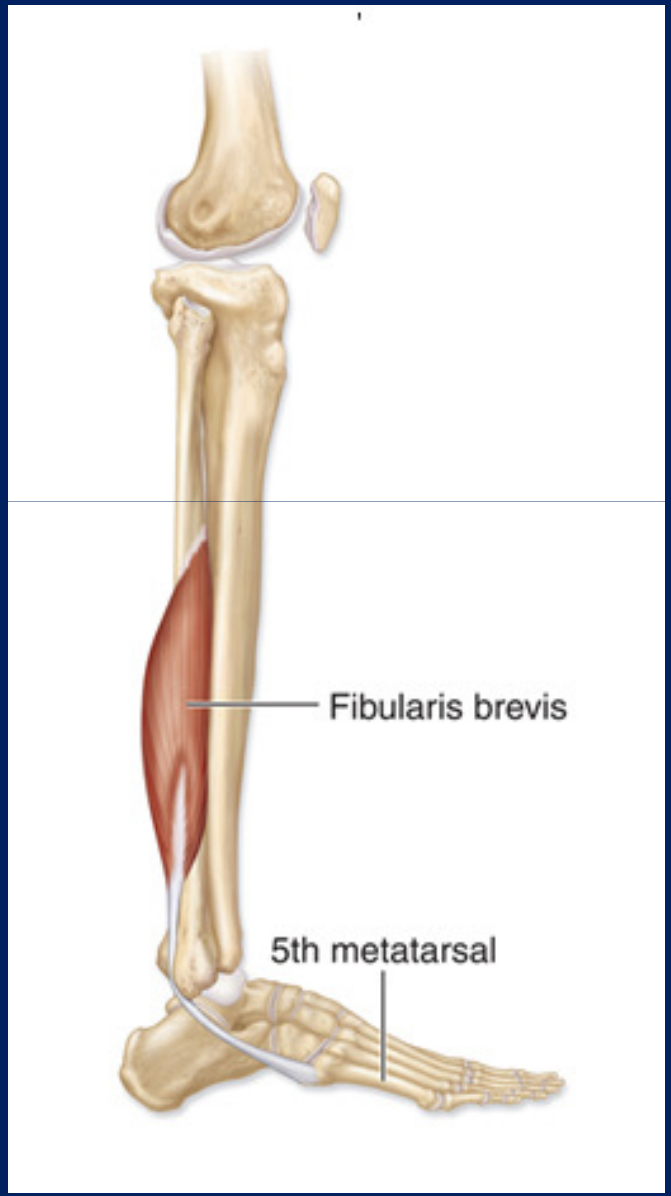
Peroneus brevis

- Origin:
- Lateral surface of Shaft of fibula
- Insertion:

Base of fifth metatarsal bone

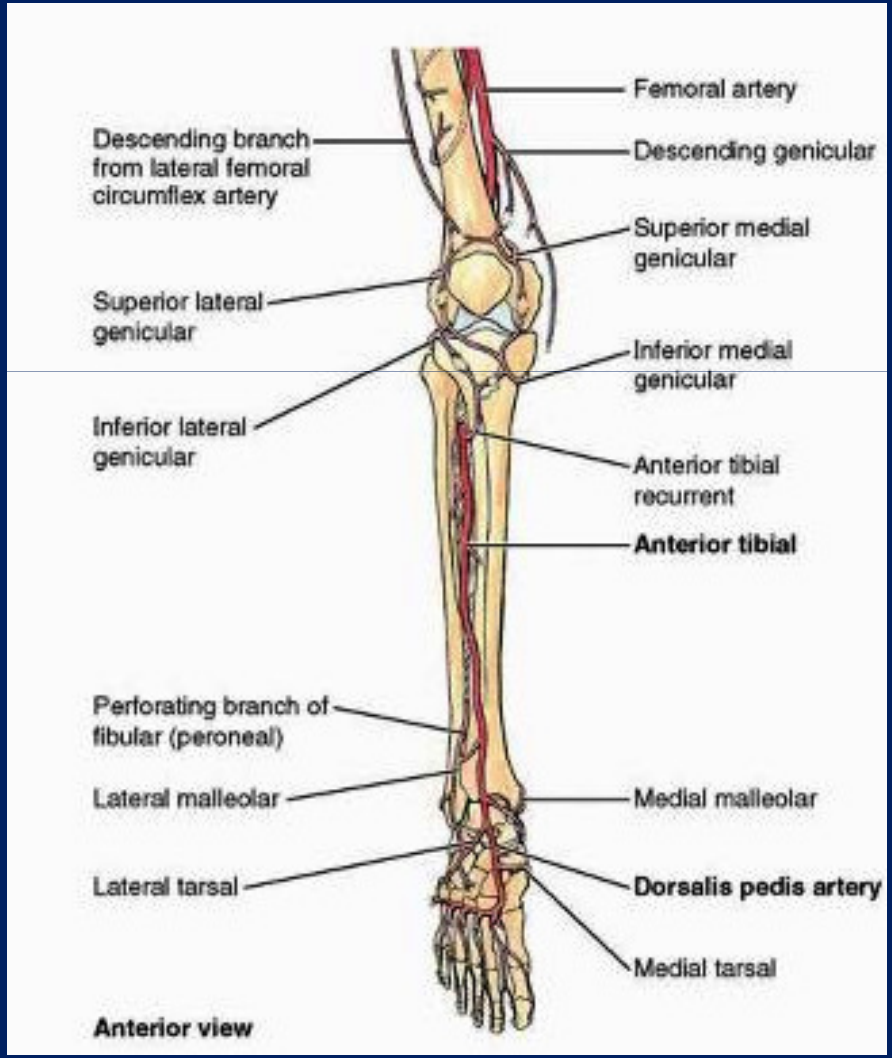
- Nerve supply:
  - Superficial peroneal nerve
  - L5; S1, 2
- Actions:

Plantar flexes foot at ankle joint; everts foot at subtalar and transverse tarsal joint; supports lateral longitudinal arch of foot



Artery of the Lateral Fascial Compartment of the Leg

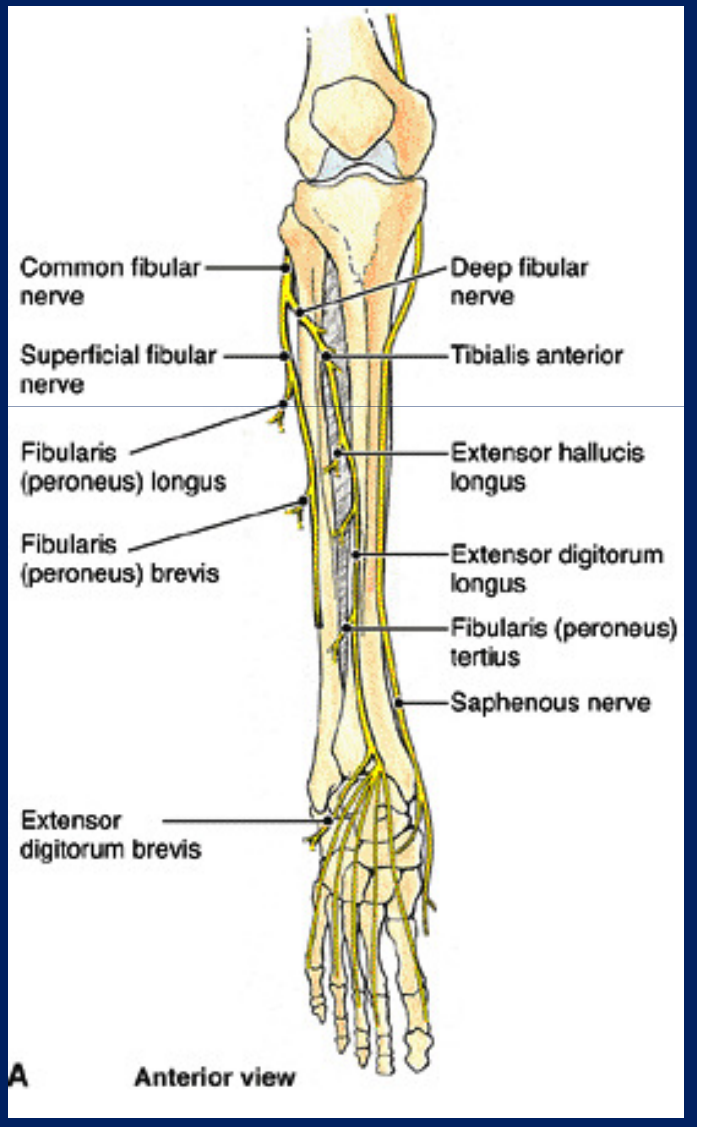
- Numerous branches from the peroneal artery ,which lies in the posterior compartment of the leg, pierce the posterior fascial septum and supply the peroneal muscles.



Nerve of the Lateral Fascial Compartment of the Leg

- Superficial Peroneal Nerve

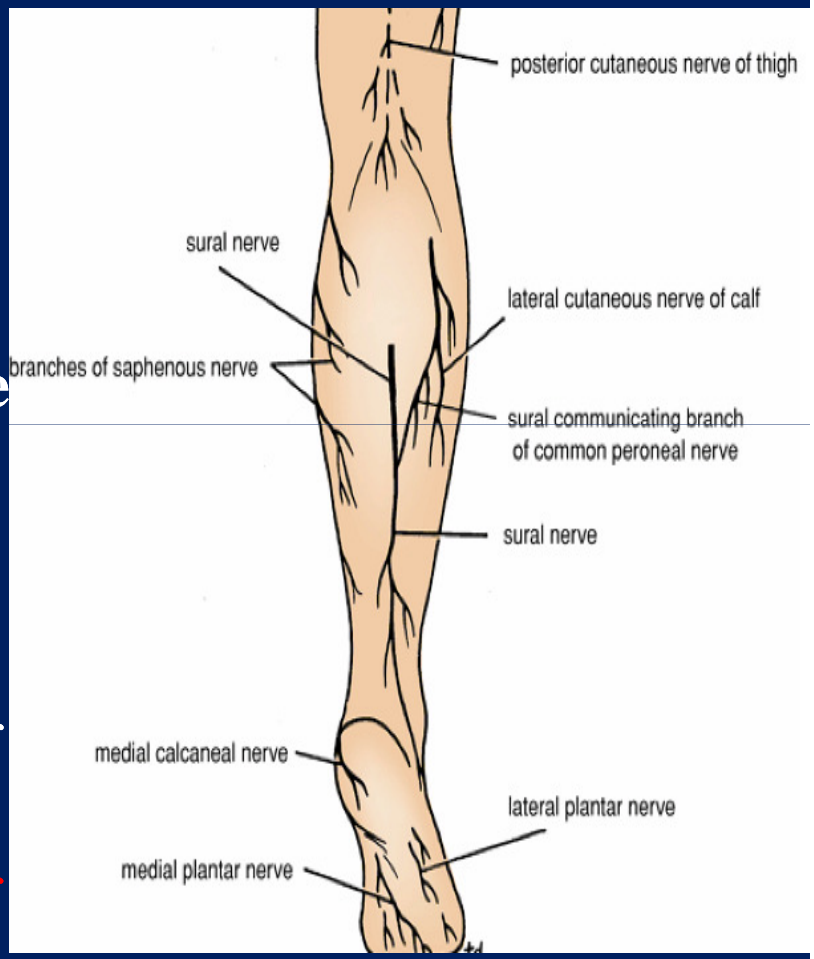
The superficial peroneal nerve is one of the terminal branches of the common peroneal nerve.It arises in the substance of the peroneus longus muscle on the lateral side of the neck of the fibula.It descends between the peroneus longus and brevis muscles, and in the lower part of the leg it becomes cutaneous Branches



Posterior Compartment of the Leg

Cutaneous Nerves

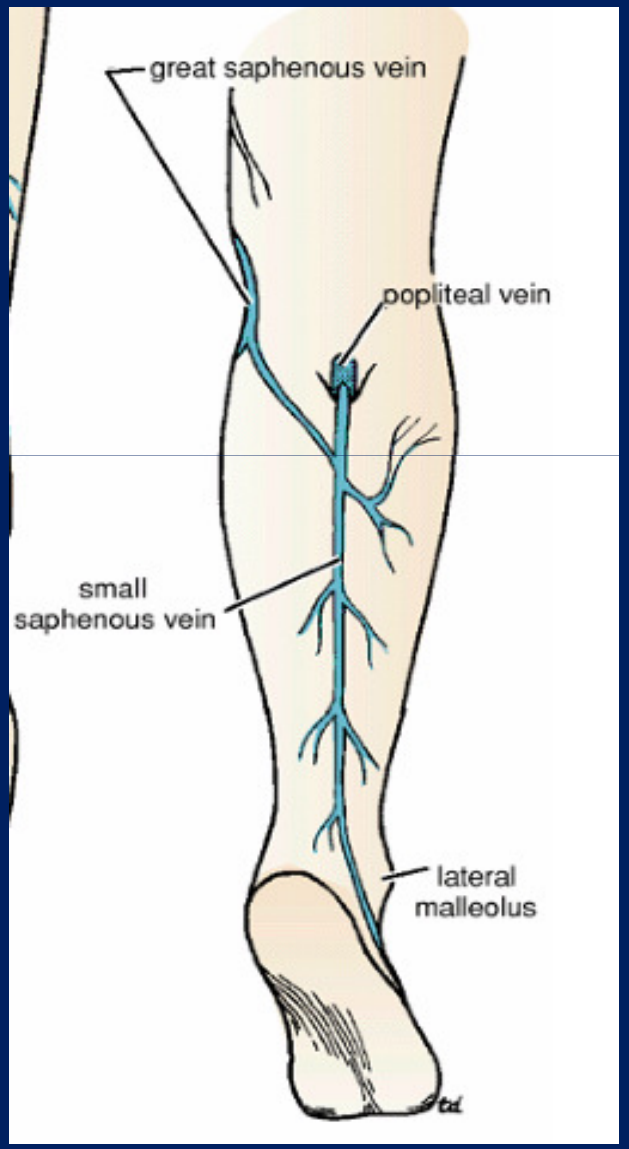
- Skin over the popliteal fossa and the upper part of the back of the leg supplied by **posterior cutaneous nerve of the thigh**
- Skin on the upper part of the posterolateral surface of the leg supplied by **lateral cutaneous nerve of the calf**, a branch of the common peroneal nerve
- Skin on the lower part of the posterolateral surface of the leg supplied by **sural nerve**, a branch of the tibial nerve
- Skin on the posteromedial surface of the leg supplied by **saphenous nerve**, a branch of the femoral nerve



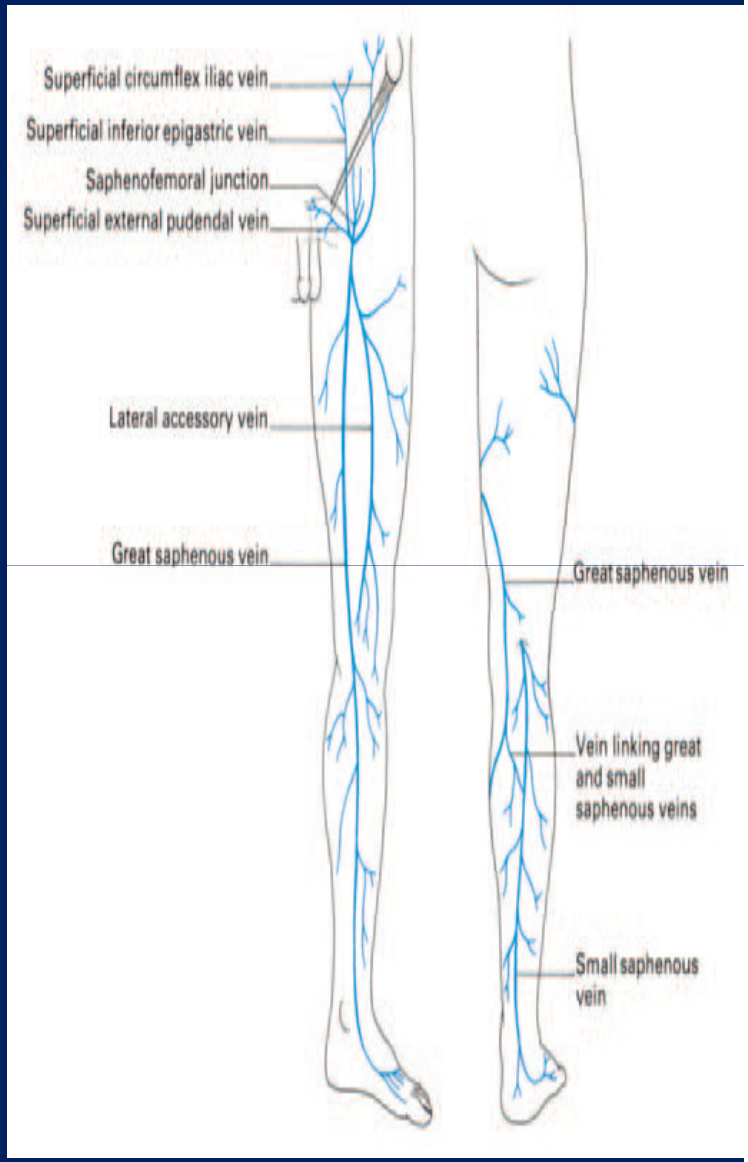
Superficial Veins

The small saphenous vein:

- Arises from the lateral part of the dorsal venous arch of the foot
- Ascends behind the lateral malleolus in company with the sural nerve
- Follows the lateral border of the tendo calcaneus and then runs up the middle of the back of the leg
- Pierces the deep fascia and passes between the two heads of the gastrocnemius muscle in the lower part of the popliteal fossa
- Has numerous valves along its course.

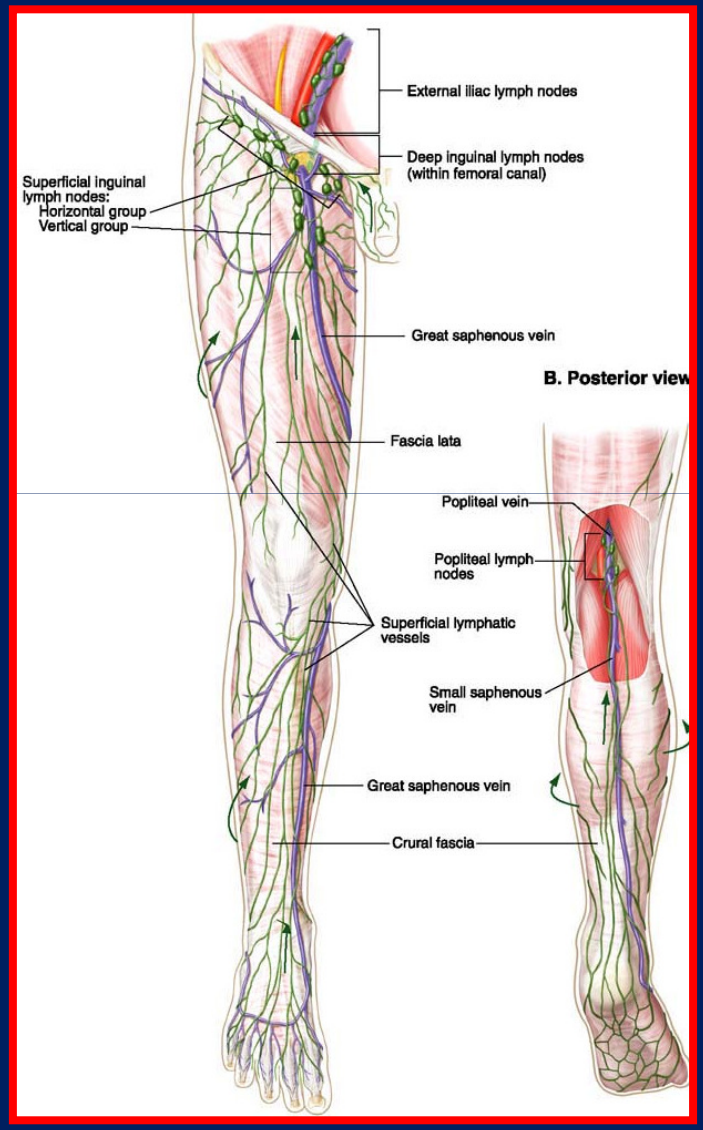


- Terminates by:
  - joining the popliteal vein, or
  - joining the great saphenous vein, or
  - splitting in two, one division joining the popliteal and the other joining the great saphenous vein
- Receives numerous small veins from the back of the leg
- Communicates with the:
  - Deep veins of the foot
  - Great saphenous vein via anastomotic vessels that run upward and medially



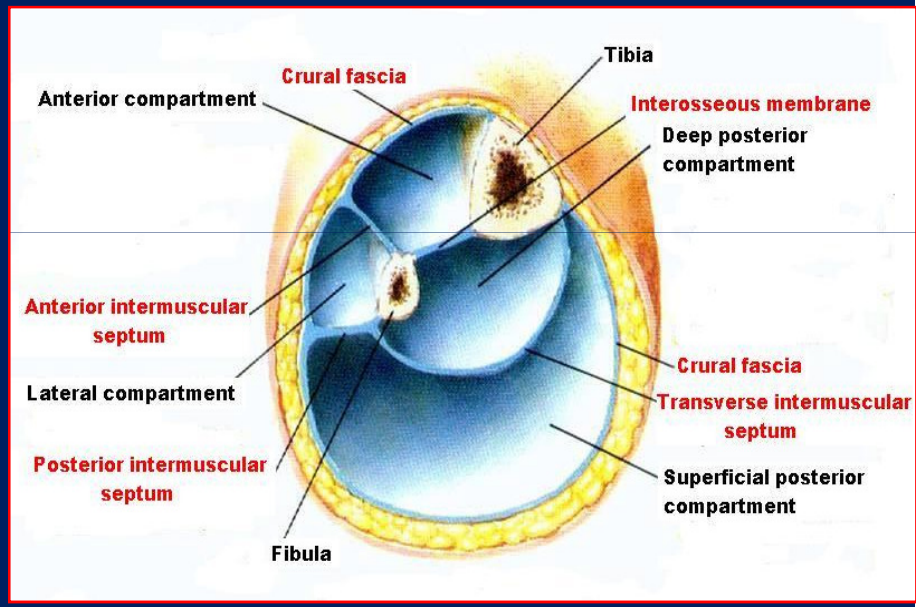
Lymphatics

- Lymph vessels run upward and:
  - Either pass forward around the medial side of the leg to drain into the vertical group of superficial inguinal nodes Or
  - Drain into the popliteal nodes

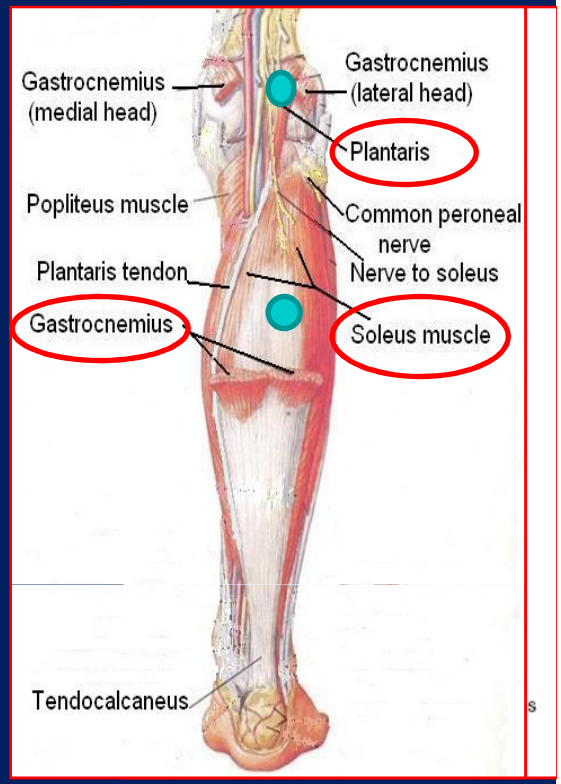


Contents of the Posterior Fascial Compartments of the Leg

- **Muscles:**
- The deep fascia of the leg forms a transverse intermuscular septum that divides the muscles of the posterior compartment into superficial and deep groups
- **Blood supply:** Posterior tibial artery
- **Nerve supply:** Tibial nerve



- **Superficial group of Muscles:**
  - Gastrocnemius
  - Plantaris
  - Soleus
- Triceps surae = soleus + two heads of gastrocnemius. Have common insertion on calcaneus via Achilles tendon (tendo calcaneus)



Together, the soleus, gastrocnemius, and plantaris:
(1) Act as powerful plantar flexors of the ankle joint
(2) Provide the main forward propulsive force in walking and running by using the foot as a lever and raising the heel off the ground.

Gastrocnemius

- **Origin:**
  - Lateral head: Lateral condyle of femur
  - Medial head from above medial femoral condyle
- **Insertion:** Posterior surface of calcaneum via Achilles tendon (tendo calcaneus)
- **Nerve supply:** Tibial nerve
- **Action:**
  - Ankle: Planter flexion
  - Knee: Assists flexion

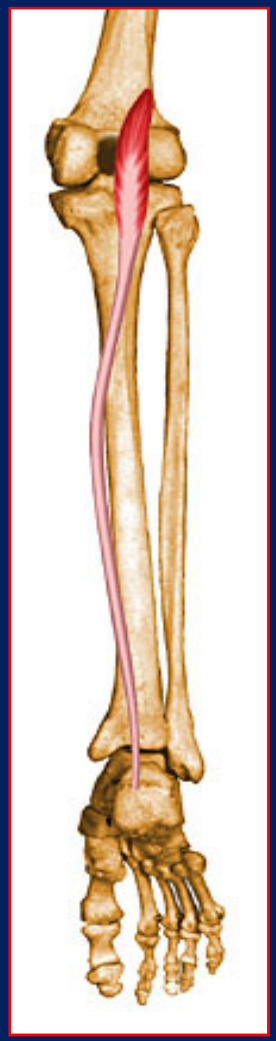
Lateral head may have a sesamoid bone

Soleus

- Broad multipennate muscle
- **Origin:**
  - Shafts of tibia and fibula
- **Insertion:** Posterior surface of calcaneum via Achilles tendon (tendo calcaneus)
- **Nerve supply:** Tibial nerve
- **Action:**
  - Ankle: Powerful planter flexion
  - Provides main propulsive force in walking and running

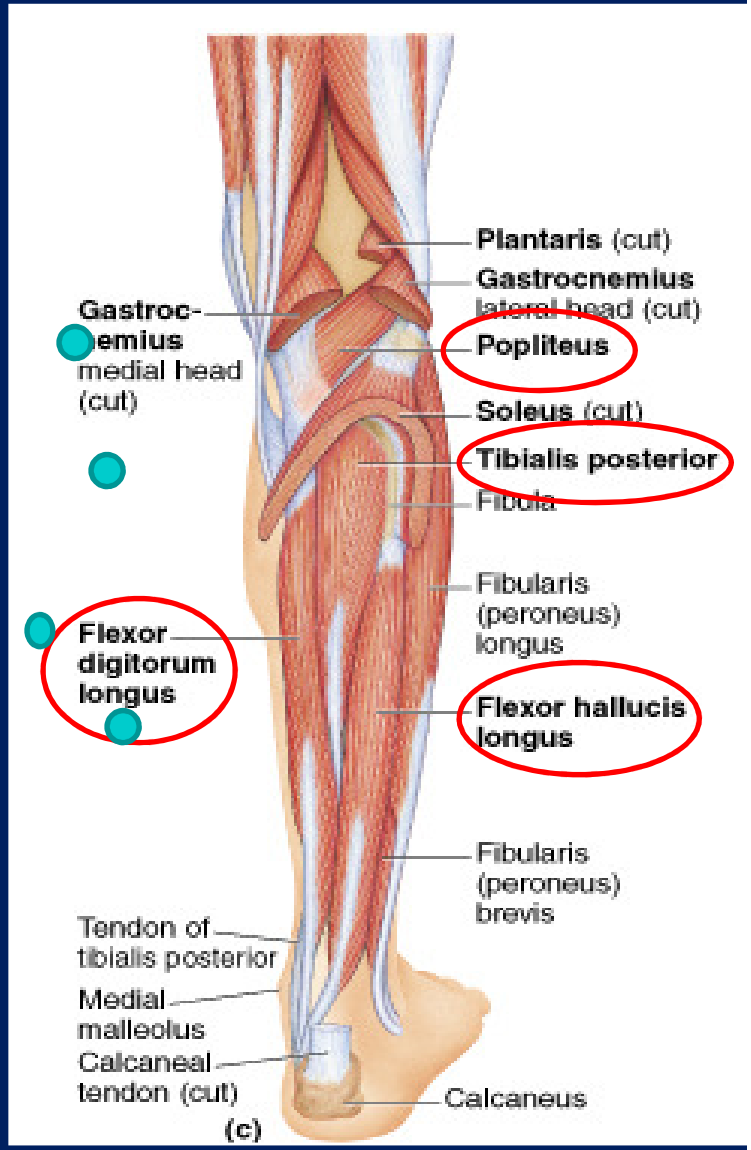
Plantaris

- **Origin:**
  - Lateral supracondylar ridge of femur
- **Insertion:** Posterior surface of calcaneum
- **Nerve supply:** Tibial nerve
- **Action:**
  - Ankle: Planter flexion
  - Knee: Assists flexion



May be absent. Tendon may be used for hand surgery

- **Deep group of Muscles:**
  - Popliteus
  - Flexor digitorum longus
  - Flexor hellucis longus
  - Tibialis posterior



Tibialis Posterior

- **Origin:**
  - Posterior surface of shafts of tibia & fibula and interosseous membrane
- **Insertion:** Tuberosity of navicular bone and via slips into sustentaculum tali, cuneiforms, cuboid and bases of 2^{nd}-4^{th} metatarsals
- **Nerve supply:** Tibial nerve
- **Action:**
  - Planter flexion at ankle joint
  - Inversion of foot at subtalar and transverse tarsal joints
  - Supports medial longitudinal arch of foot

Flexor Hallucis Longus

- **Origin:** Distal 2/3 of posterior surface of shaft of fibula
- **Insertion:** plantar surface of base of distal phalanx
- **Nerve supply:** Tibial nerve
- **Action:**
  - Flexes distal phalanx of big toe
  - Plantar flexion at ankle joint
  - Supports medial longitudinal arch of foot

Flexor Digitorum Longus

- **Origin:** Posterior surface of shaft of tibia
- **Insertion:** plantar surface of base of 2nd-5th distal phalanges
- **Nerve supply:** Tibial nerve
- **Action:**
- Flexion of 2nd-5th toes (PIP/DIP/MP joints)
- Assists with foot inversion and plantar flexion
- Supports medial and lateral longitudinal arches of foot

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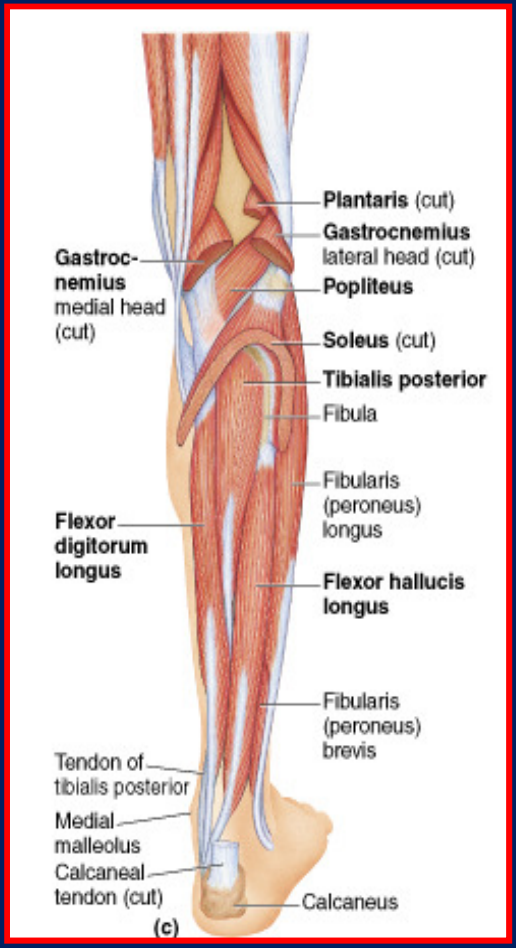
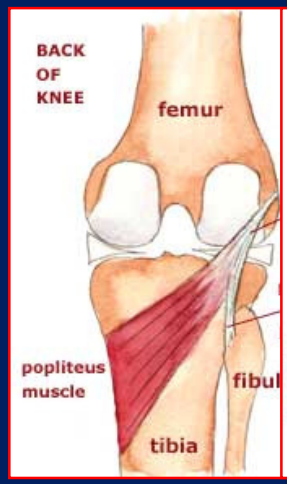
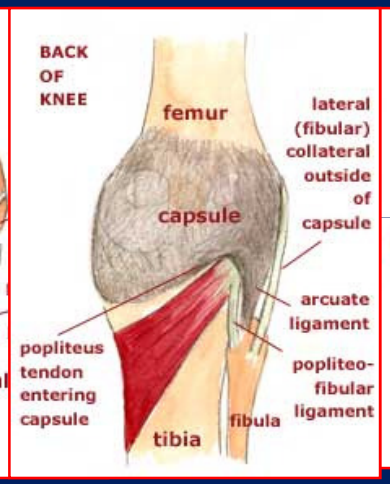
Popliteus

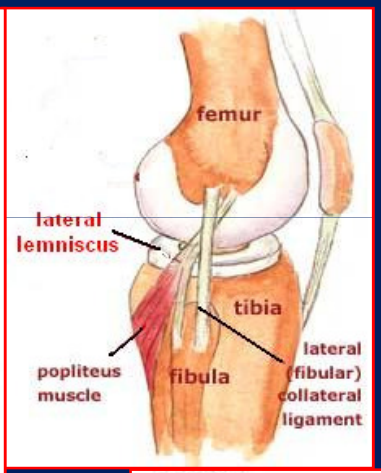
- Lies in floor of popliteal fossa.
- **Origin:** from the lateral surface of lateral condyle of femur
- **Insertion:** Posterior surface of shaft of tibia above soleal line
- **Nerve Supply:** Tibial nerve
- **Action:**
  - Flexes leg at knee joint
  - Unlocks knee joint by lateral rotation of femur on tibia

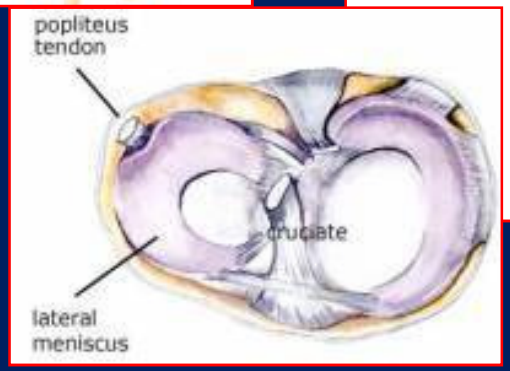


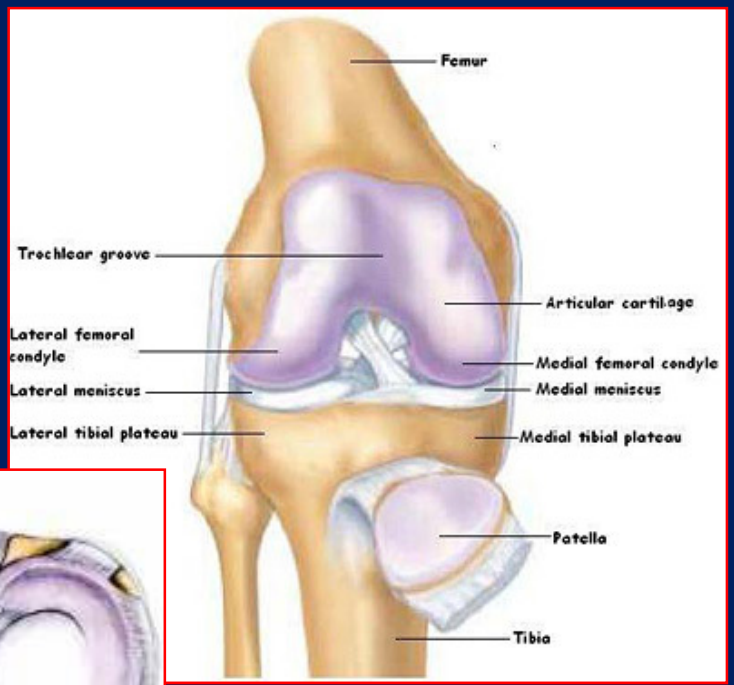
- The popliteus arises inside the capsule of the knee joint
- The tendon separates the lateral ligament of the knee joint from the lateral meniscus so that the meniscus is free to move and is less prone (as compared to right meniscus which is fused to right collateral ligament)to get damaged in knee joint injuries







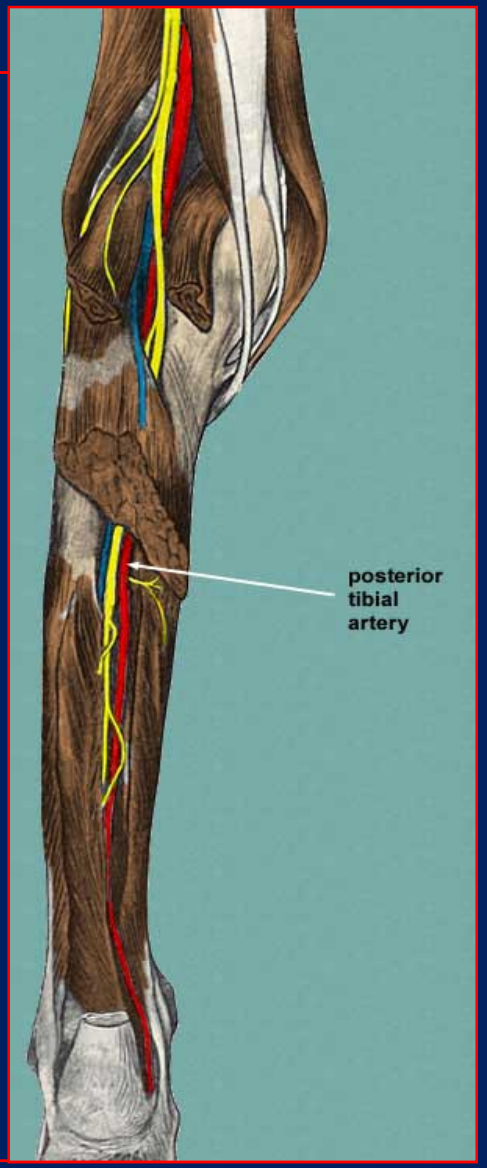




Artery of the Posterior Compartment

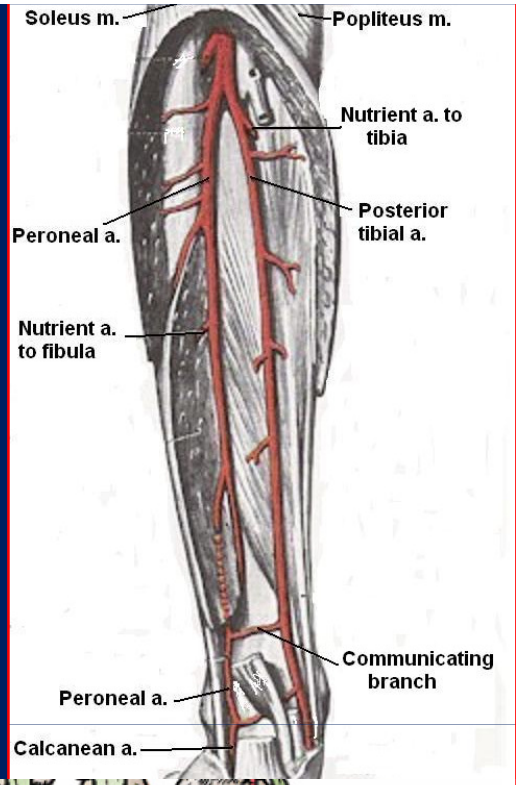
Posterior Tibial Artery

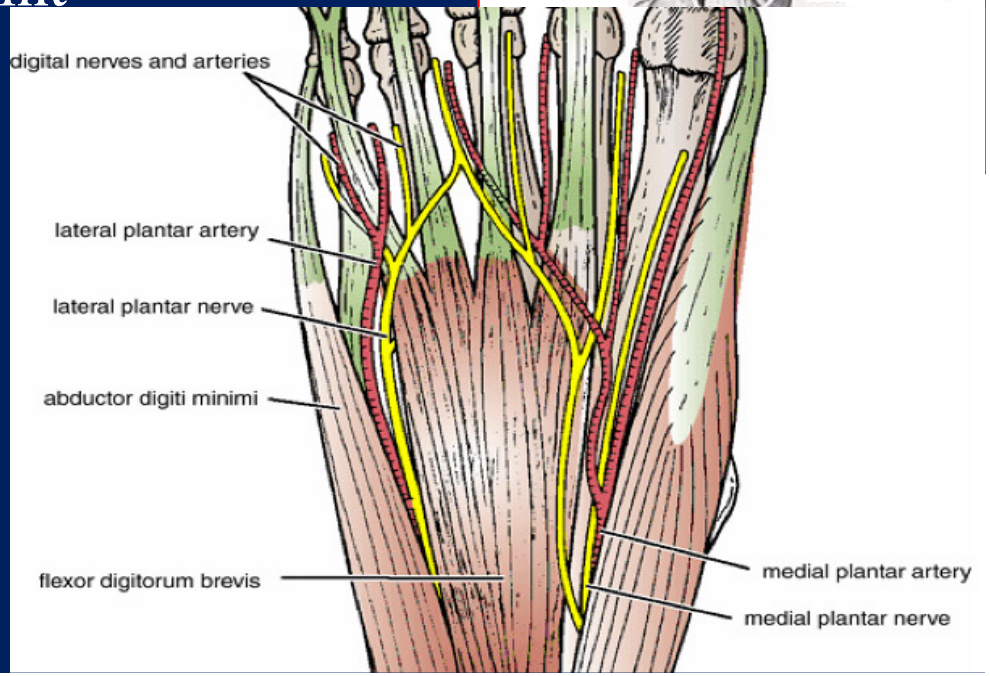
- One of the terminal branches of the popliteal artery
- Begins at the level of the lower border of the popliteus muscle
- Passes downward deep to the gastrocnemius and soleus and the deep transverse fascia of the leg
- Lies on the posterior surface of the tibialis posterior muscle above and on the posterior surface of the tibia below.
- In the lower part of the leg the artery is covered only by skin and fascia.
- Passes behind the medial malleolus, deep to the flexor retinaculum and
- Terminates by dividing into medial and lateral plantar arteries



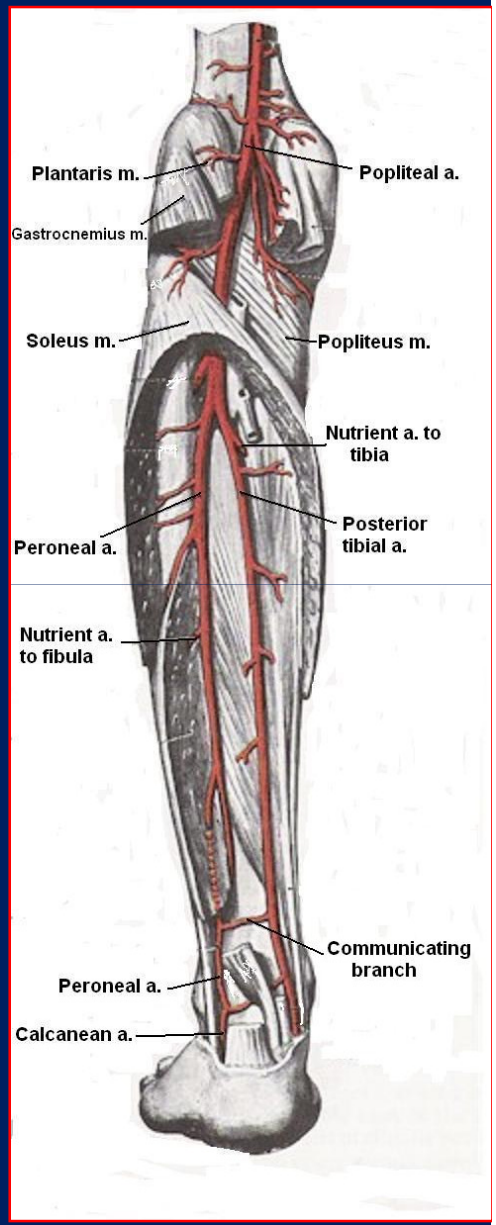
- Branches
  - Peroneal artery
  - Muscular branches are distributed to muscles in the posterior compartment of the leg.
  - Nutrient artery to the tibia
  - Anastomotic branches, which join other arteries around the ankle joint
  - Medial and lateral plantar AA

Venae commitantes of the posterior tibial artery join those of the anterior tibial artery in the popliteal fossa to form the popliteal vein.





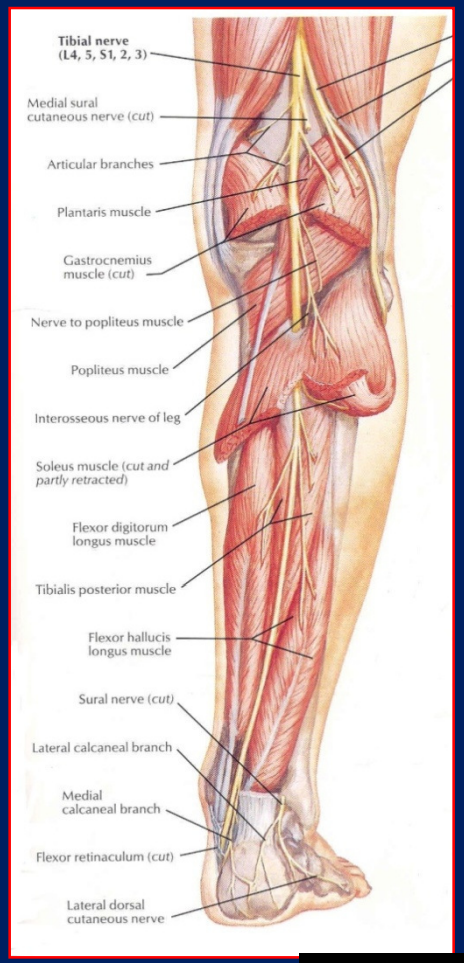
- Peroneal artery:
- A large artery that arises close to the origin of the posterior tibial artery
- Descends behind the fibula, either within the substance of the flexor hallucis longus muscle or posterior to it.
- Gives off:
  - Numerous muscular branches
  - A nutrient artery to the fibula
  - A perforating branch pierces the interosseous membrane to reach the lower part of the front of the leg.
- Ends by taking part in the anastomosis around the ankle joint.

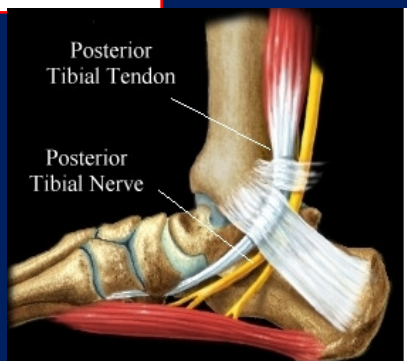


Nerve of the Posterior Compartment

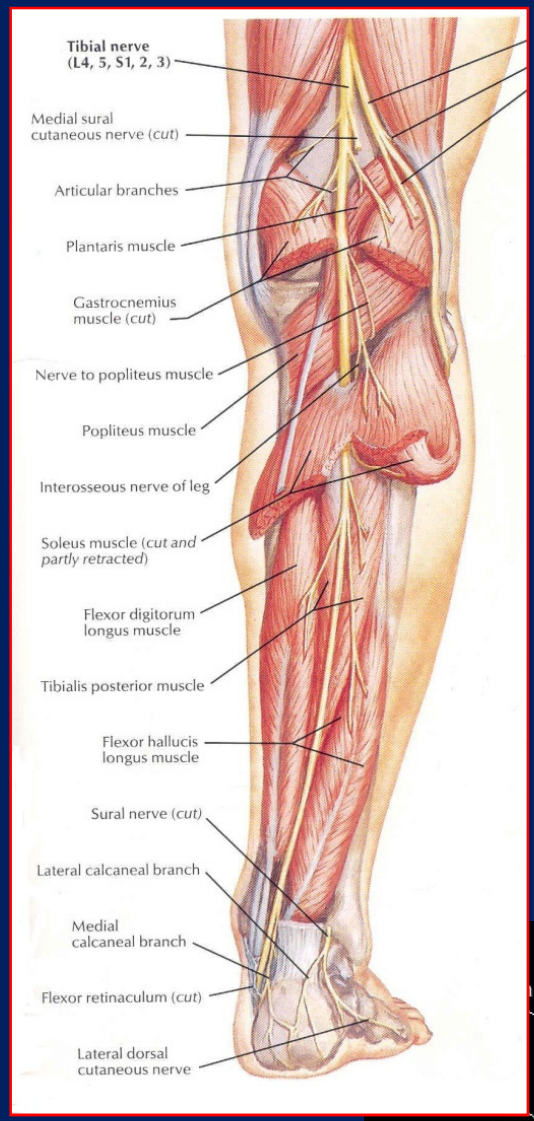
Tibial Nerve

- Larger terminal branch of the sciatic nerve
- Descends through the popliteal fossa and passes deep to the gastrocnemius and soleus muscles
- Lies on the posterior surface of the tibialis posterior and, lower down the leg, on the posterior surface of the tibia
- Accompanies the posterior tibial artery and lies at first on its medial side, then crosses posterior to it, and finally lies on its lateral side.
- The nerve, with the artery, passes behind the medial malleolus, between the tendons of the flexor digitorum longus and the flexor hallucis longus
- Lies deep to the flexor retinaculum and divides into the medial and lateral plantar nerves.





- # Branches
  - **Muscular** branches to the soleus, flexor digitorum longus, flexor hallucis longus, and tibialis posterior
  - **Cutaneous:** The medial calcaneal branch supplies the skin over the medial surface of the heel
  - **Articular** branch to the ankle joint
  - Divides into **Medial and lateral plantar nerves** inferior and posterior to medial malleolus



Clinical notes

- Gastrocnemius and Soleus muscle tears
  - Produce severe localized pain & swelling over the damaged muscle
- Ruptured Tendocalcaneus
  - Common in middle-aged men and frequently occurs in tennis players.
  - Occurs at its narrowest part, about 2 in. (5 cm) above its insertion
  - A sudden, sharp pain is felt, with immediate disability. The gastrocnemius and soleus muscles retract proximally, leaving a palpable gap in the tendon.
  - It is impossible for the patient to actively plantar flex the foot.
  - The tendon should be sutured as soon as possible and the leg immobilized with the ankle joint plantar flexed and the knee joint flexed.
- Plantaris tendon
  - Rupture is rare
  - Can be used for autografts in repairing severed flexor tendons to the fingers (like the tendon of the palmaris longus muscle)

Thank You & Good Luck