

# Back of Leg: FAQs, MCQs and Viva Voce

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## Frequently Asked Questions – Back of Leg

### 1. What are the two groups of muscles in the posterior compartment of the leg?

? **Superficial group:** *Gastrocnemius, Soleus, Plantaris.*

? **Deep group:** *Popliteus, Flexor digitorum longus, Tibialis posterior, Flexor hallucis longus.*

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### 2. What is the nerve supply of all muscles in the back of the leg?

? **Tibial nerve (L4–S3).**

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### 3. What is the main action of these muscles?

? **Plantar flexion of the ankle and flexion of the toes.**

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### 4. What is the strongest tendon in the human body?

? **Tendo calcaneus (Achilles tendon).**

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### 5. Which muscles form the tendo calcaneus?

? *Gastrocnemius, Soleus, and sometimes Plantaris.*

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### 6. Where is the tendo calcaneus inserted?

? **Posterior surface of the calcaneum.**

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### 7. Which artery runs with the tibial nerve in the back of the leg?

? **Posterior tibial artery.**

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### 8. Where can the posterior tibial pulse be felt?

? **Behind the medial malleolus**, midway between the malleolus and tendo calcaneus.

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### 9. What are the terminal branches of the posterior tibial artery?

? **Medial and lateral plantar arteries.**

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**10. What is the chief artery of the lateral compartment?**

? **Peroneal (fibular) artery.**

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**11. What are the structures that pass beneath the flexor retinaculum (medial ? lateral)?**

? *Tibialis posterior, Flexor digitorum longus, Posterior tibial artery, Tibial nerve, Flexor hallucis longus.*

? Mnemonic: “**Tom, Dick And Very Nervous Harry.**”

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**12. What is the clinical importance of the flexor retinaculum?**

? It forms the **tarsal tunnel**, whose compression produces **tarsal tunnel syndrome**.

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**13. Which muscle unlocks the knee joint?**

? **Popliteus.**

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**14. Which muscle maintains the medial longitudinal arch of the foot?**

? **Tibialis posterior.**

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**15. Which muscle maintains the transverse arch of the foot?**

? **Peroneus longus.**

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**16. Which artery gives the nutrient branch to the tibia?**

? **Posterior tibial artery.**

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**17. Which artery gives the nutrient branch to the fibula?**

? **Peroneal (fibular) artery.**

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**18. What is the “peripheral heart” of the body?**

? **Soleus muscle**, because its contractions pump venous blood upward against gravity.

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**19. What are the boundaries of the posterior compartment of the leg?**

? *Anteriorly*: Tibia, fibula, interosseous membrane.

? *Posteriorly*: Deep fascia.

? *Laterally & medially*: Intermuscular septa.

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**20. What are the main clinical conditions related to the back of the leg?**

? *Tarsal tunnel syndrome, Achilles tendon rupture, posterior-compartment syndrome, calcaneal bursitis, and deep vein thrombosis.*

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**21. What is the effect of tibial nerve injury?**

? *Loss of plantar flexion and inversion; anesthesia over the sole; calcaneovalgus deformity.*

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**22. Why is the sural nerve used for grafting?**

? It is **superficial, purely sensory, and easily harvested** with minimal morbidity.

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**23. What is the popliteal–plantar arterial continuity?**

? *Popliteal ? Posterior tibial ? Lateral plantar ? Plantar arch.*

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**24. What is the importance of perforating branch of peroneal artery?**

? It **joins the anterior tibial system**, maintaining collateral supply around the ankle.

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**25. Why are calf muscles called the “triceps surae”?**

? Because *gastrocnemius* (two heads) + *soleus* (one head) = three-headed muscle of the leg.

**Multiple Choice Questions – Back of Leg****1. The posterior compartment of the leg is supplied by which nerve?**

- A. Common peroneal nerve
- B. Tibial nerve
- C. Superficial peroneal nerve
- D. Deep peroneal nerve

? **Answer:** B – *Tibial nerve*

? It supplies both superficial and deep groups of posterior leg muscles.

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**2. The strongest tendon in the human body is:**

- A. Plantaris tendon

B. Flexor hallucis longus tendon

C. Tendo calcaneus

D. Tibialis posterior tendon

? **Answer:** C – *Tendo calcaneus (Achilles tendon)*

? Formed by gastrocnemius, soleus, and plantaris.

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3. The artery accompanying the tibial nerve in the back of leg is:

A. Anterior tibial artery

B. Posterior tibial artery

C. Peroneal artery

D. Popliteal artery

? **Answer:** B – *Posterior tibial artery.*

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4. The pulse of posterior tibial artery is palpated:

A. In front of medial malleolus

B. Behind lateral malleolus

C. Behind medial malleolus

D. Over dorsum of foot

? **Answer:** C – *Behind medial malleolus* (between malleolus and tendo calcaneus).

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5. The muscle that unlocks the knee joint is:

A. Popliteus

B. Soleus

C. Gastrocnemius

D. Tibialis posterior

? **Answer:** A – *Popliteus*

? Rotates femur laterally on tibia to initiate flexion.

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6. The chief plantar flexors of the foot are:

A. Tibialis anterior and extensor digitorum longus

B. Gastrocnemius and soleus

C. Tibialis posterior and peroneus tertius

D. Flexor digitorum longus and tibialis anterior

? **Answer:** B – *Gastrocnemius and soleus.*

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7. Which muscle supports the medial longitudinal arch of the foot?

- A. Peroneus longus
- B. Tibialis posterior
- C. Tibialis anterior
- D. Flexor digitorum longus

? **Answer:** B – *Tibialis posterior*.

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8. The peroneal artery is a branch of:

- A. Anterior tibial artery
- B. Posterior tibial artery
- C. Popliteal artery
- D. Lateral plantar artery

? **Answer:** B – *Posterior tibial artery*.

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9. Which muscle forms the floor of the popliteal fossa?

- A. Gastrocnemius
- B. Soleus
- C. Popliteus
- D. Plantaris

? **Answer:** C – *Popliteus*.

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10. Which of the following muscles is absent in some individuals?

- A. Soleus
- B. Plantaris
- C. Gastrocnemius
- D. Tibialis posterior

? **Answer:** B – *Plantaris*.

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11. Which of the following muscles does NOT cross the ankle joint?

- A. Gastrocnemius
- B. Soleus
- C. Tibialis posterior
- D. Flexor hallucis longus

? **Answer:** A – *Gastrocnemius*

? Acts on knee and ankle through Achilles tendon but its fleshy belly does not cross ankle directly.

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**12.** The artery supplying the lateral compartment of leg is:

- A. Anterior tibial artery
- B. Peroneal artery
- C. Posterior tibial artery
- D. Dorsalis pedis artery

? **Answer:** B – *Peroneal artery.*

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**13.** Which of the following structures passes deep to the flexor retinaculum?

- A. Peroneus longus
- B. Tibialis anterior
- C. Tibialis posterior
- D. Peroneus brevis

? **Answer:** C – *Tibialis posterior.*

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**14.** The muscle forming the “peripheral heart” of the leg is:

- A. Gastrocnemius
- B. Soleus
- C. Plantaris
- D. Tibialis posterior

? **Answer:** B – *Soleus*

? Helps venous return by compressing deep veins.

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**15.** Which nerve supplies the heel (calcaneal) region of the foot?

- A. Saphenous nerve
- B. Medial plantar nerve
- C. Sural nerve
- D. Medial calcanean branch of tibial nerve

? **Answer:** D – *Medial calcanean branch of tibial nerve.*

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**16.** Which structure lies deepest in the tarsal tunnel (posterior ? anterior)?

- A. Tibialis posterior
- B. Flexor digitorum longus
- C. Tibial nerve
- D. Flexor hallucis longus

? **Answer:** D – *Flexor hallucis longus*.

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**17.** Injury to the tibial nerve in the posterior leg causes:

- A. Foot drop
- B. Calcaneovalgus deformity
- C. Eversion deformity
- D. Clubfoot

? **Answer:** B – *Calcaneovalgus deformity* (loss of plantar flexion + inversion).

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**18.** Which artery supplies the fibula?

- A. Posterior tibial artery
- B. Peroneal artery
- C. Anterior tibial artery
- D. Dorsalis pedis artery

? **Answer:** B – *Peroneal artery*.

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**19.** The venous drainage of the lateral side of foot is mainly through:

- A. Great saphenous vein
- B. Small saphenous vein
- C. Anterior tibial vein
- D. Peroneal vein

? **Answer:** B – *Small saphenous vein*.

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**20.** The muscle that flexes the great toe and maintains the medial arch is:

- A. Flexor hallucis longus
- B. Flexor digitorum longus
- C. Tibialis posterior
- D. Soleus

? **Answer:** A – *Flexor hallucis longus*.

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## Viva Voce – Back of Leg

1. What are the two groups of muscles in the back of leg?

? *Superficial group: Gastrocnemius, Soleus, Plantaris.*

? *Deep group: Popliteus, Flexor digitorum longus, Tibialis posterior, Flexor hallucis longus.*

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2. What is the nerve supply of all muscles of the back of the leg?

? *Tibial nerve (L4–S3).*

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3. What is the chief action of the posterior compartment muscles?

? *Plantar flexion of foot and flexion of toes.*

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4. Name the strongest tendon in the body.

? *Tendo calcaneus (Achilles tendon).*

---

5. Which muscles form the tendo calcaneus?

? *Gastrocnemius, Soleus, and sometimes Plantaris.*

---

6. Into which bone is the tendo calcaneus inserted?

? *Posterior surface of the calcaneum.*

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7. What is the function of the soleus muscle?

? *Powerful plantar flexion and maintenance of upright posture (“peripheral heart”).*

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8. What is the function of the gastrocnemius muscle?

? *Plantar flexion of foot and flexion of knee.*

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9. What is the function of plantaris?

? *Weak plantar flexion; assists knee flexion.*

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**10.** Which muscle unlocks the knee joint?

? *Popliteus.*

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**11.** What is the function of the popliteus muscle?

? *Lateral rotation of femur on tibia during flexion (unlocking of knee).*

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**12.** Which muscles maintain the medial longitudinal arch of foot?

? *Tibialis posterior and flexor hallucis longus.*

---

**13.** Which muscle maintains the lateral longitudinal arch of foot?

? *Peroneus longus and flexor digitorum longus.*

---

**14.** Which artery runs along with the tibial nerve in the posterior compartment?

? *Posterior tibial artery.*

---

**15.** Where can the posterior tibial pulse be felt?

? *Behind the medial malleolus, between the malleolus and tendo calcaneus.*

---

**16.** What are the terminal branches of posterior tibial artery?

? *Medial and lateral plantar arteries.*

---

**17.** What are the main branches of peroneal artery?

? *Muscular, nutrient to fibula, perforating, communicating, and lateral calcaneal.*

---

**18.** Which structure lies deepest under the flexor retinaculum?

? *Flexor hallucis longus tendon.*

---

**19.** What is the order of structures passing under the flexor retinaculum?

? *Tibialis posterior, Flexor digitorum longus, Posterior tibial artery, Tibial nerve, Flexor hallucis longus.*

? Mnemonic: “*Tom, Dick And Very Nervous Harry.*”

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**20. What is tarsal tunnel syndrome?**

? *Compression of tibial nerve under the flexor retinaculum, causing pain and numbness in sole.*

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**21. Which muscle acts as a “peripheral heart”?**

? *Soleus muscle.*

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**22. What are the main actions of flexor hallucis longus?**

? *Flexion of great toe, plantar flexion of ankle, maintenance of medial arch.*

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**23. What are the main actions of tibialis posterior?**

? *Plantar flexion, inversion, and maintenance of medial longitudinal arch.*

---

**24. What happens when the tibial nerve is injured in the leg?**

? *Loss of plantar flexion and inversion; anesthesia of sole; calcaneovalgus deformity.*

---

**25. Why is the sural nerve used for nerve grafting?**

? *Because it is superficial, purely sensory, and easily accessible with minimal functional loss.*

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**26. What is the importance of peroneal artery in occlusion of posterior tibial artery?**

? *Provides collateral circulation to the foot through its perforating and communicating branches.*

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**27. What is the main function of tendo calcaneus?**

? *Transmits the powerful contraction of calf muscles to the heel, enabling walking, running, and jumping.*

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**28. What is the function of plantaris tendon in reconstructive surgery?**

? *Used for tendon grafts due to its long, slender form.*

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**29. What is the clinical significance of posterior compartment tightness?**

? *May lead to posterior-compartment syndrome or restricted dorsiflexion.*

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**30. What is the surface marking of posterior tibial artery?**

? *From midpoint between medial malleolus and tendo calcaneus to midway between medial malleolus and heel.*

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This completes the **Viva Voce section for the Back of Leg**, covering all key anatomical, functional, and clinical points.