

# Popliteal Fossa: FAQs, MCQs and Viva Voce

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## Frequently Asked Questions — Popliteal Fossa

### 1. What are the boundaries of the popliteal fossa?

- **Superomedial:** Semimembranosus and semitendinosus.
- **Superolateral:** Biceps femoris.
- **Inferomedial and Inferolateral:** Two heads of gastrocnemius.
- **Roof:** Skin, superficial fascia, and popliteal fascia.
- **Floor:** Popliteal surface of femur, posterior capsule, and popliteus muscle

Volume 2, BD Chaurasia's Human ...

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### 2. What is the arrangement of structures from superficial to deep?

From posterior to anterior:

**Tibial nerve ? Popliteal vein ? Popliteal artery.**

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### 3. What is the order of structures from medial to lateral in the upper part of the fossa?

**Artery, Vein, Nerve (A–V–N).**

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### 4. Which artery lies deepest in the popliteal fossa?

The **popliteal artery** — continuation of the femoral artery.

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### 5. What are the branches of the popliteal artery?

- Cutaneous: Small arteries to skin and fascia.
  - Muscular: To gastrocnemius, plantaris, soleus, and popliteus.
  - Articular: Five genicular arteries forming the **genicular anastomosis**.
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#### 6. Which vein drains into the popliteal vein?

The **small (short) saphenous vein** — joins the popliteal vein at the mid-fossa level.

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#### 7. What are the branches of the tibial nerve in the popliteal fossa?

- Muscular: Gastrocnemius, plantaris, soleus, and popliteus.
  - Articular: To the knee joint.
  - Cutaneous: **Medial sural cutaneous nerve**.
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#### 8. What is the most superficial structure in the popliteal fossa?

**Tibial nerve.**

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#### 9. Which nerve winds around the neck of the fibula?

**Common peroneal nerve** — very superficial and easily injured, causing **foot drop**.

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#### 10. What are the contents of the popliteal fossa?

- **Nerves:** Tibial and common peroneal nerves.
  - **Vessels:** Popliteal artery and vein.
  - **Lymph nodes:** Popliteal nodes.
  - **Fat and areolar tissue.**
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**11. What are the main lymph nodes present in the popliteal fossa?**

**6–7 popliteal lymph nodes**, draining lateral foot and posterior leg into deep inguinal nodes.

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

**Unlocks the knee joint** by **laterally rotating femur** on tibia during flexion initiation.

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**13. What is the genicular anastomosis?**

A vascular network around the knee formed by:

- Superior and inferior genicular arteries (medial and lateral).
  - Descending genicular and descending branch of lateral circumflex femoral artery.
  - Anterior and posterior tibial recurrent arteries.
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**14. What is the clinical significance of the popliteal fossa?**

- Site for **popliteal pulse palpation**.
  - Common site for **popliteal aneurysm**.
  - **DVT, Baker's cyst, or entrapment syndromes** may occur here.
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**15. What is the safest site for popliteal artery palpation?**

Deep in the fossa with **knee flexed** — relaxes fascia and hamstrings for easy palpation.

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**16. Why is the popliteal artery prone to aneurysm?**

Because it is **deeply placed and fixed** between rigid structures (femur and fascia), preventing expansion.

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**17. What is the “locking and unlocking” mechanism of the knee?**

- **Locking:** Medial rotation of femur on tibia during full extension (stabilizes joint).
  - **Unlocking:** Lateral rotation of femur by **popliteus muscle** during flexion initiation.
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**18. Which nerve supplies sensation to the posterior knee and leg?**

**Posterior cutaneous nerve of thigh (S1–S3).**

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**19. Which structure connects the popliteal fossa to the posterior compartment of the leg?**

**Tibial nerve and popliteal artery** — both pass deep to popliteus to reach posterior leg.

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**20. How is the popliteal fossa clinically examined?**

By palpating pulses, checking for swelling (aneurysm/cyst), and observing muscle strength (nerve injuries).

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These FAQs summarize key anatomical and clinical points that are **frequently tested in practicals, vivas, and written exams** related to the **Popliteal Fossa**.

### **Multiple Choice Questions — Popliteal Fossa**

**1. The most superficial structure in the popliteal fossa is:**

- A. Popliteal vein
- B. Popliteal artery
- C. Tibial nerve
- D. Common peroneal nerve

**Answer:** C. Tibial nerve

**Explanation:** The tibial nerve lies most superficial; popliteal vein is intermediate, and the artery is deepest.

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**2. The deepest structure in the popliteal fossa is:**

- A. Popliteal vein
- B. Popliteal artery

- C. Tibial nerve
- D. Common peroneal nerve

**Answer:** B. Popliteal artery

**Explanation:** The popliteal artery lies deepest, against the floor formed by the femur and popliteus.

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**3. The roof of the popliteal fossa is formed by:**

- A. Popliteal fascia
- B. Skin and superficial fascia
- C. Deep fascia
- D. Tendons of hamstring muscles

**Answer:** B. Skin and superficial fascia

**Explanation:** The roof includes skin, superficial fascia, and deep popliteal fascia.

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**4. The floor of the popliteal fossa is formed by:**

- A. Gastrocnemius and plantaris
- B. Popliteus and posterior surface of femur
- C. Soleus
- D. Deep fascia only

**Answer:** B. Popliteus and posterior surface of femur

**Explanation:** Floor comprises the popliteal surface of femur, posterior capsule, and popliteus muscle.

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**5. The boundaries of the popliteal fossa are formed above by:**

- A. Adductor magnus and biceps femoris
- B. Semimembranosus and biceps femoris
- C. Gastrocnemius only
- D. Gracilis and adductor longus

**Answer:** B. Semimembranosus and biceps femoris

**Explanation:** Superomedial boundary — semimembranosus and semitendinosus; superolateral — biceps femoris.

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**6. The popliteal artery is a continuation of:**

- A. Profunda femoris artery

- B. Femoral artery
- C. Anterior tibial artery
- D. Posterior tibial artery

**Answer:** B. Femoral artery

**Explanation:** Femoral artery becomes popliteal artery after passing through adductor hiatus.

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**7. The popliteal artery ends at the level of:**

- A. Upper border of popliteus
- B. Lower border of popliteus
- C. Middle of popliteal fossa
- D. Upper border of gastrocnemius

**Answer:** B. Lower border of popliteus

**Explanation:** Here it divides into anterior and posterior tibial arteries.

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**8. The popliteal vein is formed by union of:**

- A. Great and small saphenous veins
- B. Anterior and posterior tibial veins
- C. Peroneal and posterior tibial veins
- D. Lateral and medial genicular veins

**Answer:** B. Anterior and posterior tibial veins

**Explanation:** These unite at lower border of popliteus to form popliteal vein.

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**9. Which vein joins the popliteal vein in the fossa?**

- A. Great saphenous vein
- B. Small saphenous vein
- C. Perforating vein
- D. Genicular vein

**Answer:** B. Small saphenous vein

**Explanation:** It drains into the popliteal vein at the mid-fossa.

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**10. Which muscle forms the floor of the lower part of popliteal fossa?**

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

D. Gastrocnemius

**Answer:** B. Popliteus

**Explanation:** The popliteus forms the floor and unlocks the knee joint during flexion.

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**11. The nerve supplying popliteus muscle is:**

A. Common peroneal nerve

B. Tibial nerve

C. Femoral nerve

D. Obturator nerve

**Answer:** B. Tibial nerve

**Explanation:** Tibial nerve gives a branch to popliteus within the fossa.

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**12. Which structure crosses the popliteal artery from lateral to medial side?**

A. Tibial nerve

B. Popliteal vein

C. Plantaris tendon

D. Common peroneal nerve

**Answer:** B. Popliteal vein

**Explanation:** The vein crosses superficial to the artery from lateral to medial side.

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**13. The popliteal artery gives how many genicular branches?**

A. Three

B. Four

C. Five

D. Six

**Answer:** C. Five

**Explanation:** Superior medial, superior lateral, inferior medial, inferior lateral, and middle genicular arteries.

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**14. Which artery participates in the genicular anastomosis?**

A. Descending genicular artery

B. Deep femoral artery

C. Peroneal artery

D. Lateral plantar artery

**Answer:** A. Descending genicular artery

**Explanation:** A branch of femoral artery contributing to genicular anastomosis.

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**15. Which nerve is most prone to injury around the knee?**

- A. Tibial nerve
- B. Common peroneal nerve
- C. Sural nerve
- D. Obturator nerve

**Answer:** B. Common peroneal nerve

**Explanation:** Winds around neck of fibula, vulnerable to trauma or casts, leading to foot drop.

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**16. Which of the following arteries pierces the posterior capsule of the knee joint?**

- A. Superior lateral genicular
- B. Middle genicular
- C. Inferior medial genicular
- D. Descending genicular

**Answer:** B. Middle genicular

**Explanation:** The middle genicular artery pierces capsule to supply cruciate ligaments and synovium.

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**17. The popliteal lymph nodes receive lymph from:**

- A. Medial side of leg
- B. Lateral side of foot and posterior leg
- C. Anterior thigh
- D. Perineum

**Answer:** B. Lateral side of foot and posterior leg

**Explanation:** They drain into deep inguinal nodes.

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**18. The popliteal vein continues upward as:**

- A. Deep femoral vein
- B. Femoral vein
- C. External iliac vein
- D. Inferior vena cava

**Answer:** B. Femoral vein

**Explanation:**

Continuation

occurs

at

the

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**19. Which nerve gives rise to medial sural cutaneous branch?**

- A. Common peroneal nerve
- B. Tibial nerve
- C. Posterior cutaneous nerve of thigh
- D. Sural nerve

**Answer:** B. Tibial nerve

**Explanation:** It joins the communicating branch of common peroneal to form the sural nerve.

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**20. The popliteal pulse is best palpated with:**

- A. Leg extended
- B. Leg flexed
- C. Prone position with leg extended
- D. Sitting position

**Answer:** B. Leg flexed

**Explanation:** Flexion relaxes fascia, allowing deeper palpation of the popliteal artery.

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**21. Which muscle helps unlock the knee joint?**

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

**Answer:** C. Popliteus

**Explanation:** Laterally rotates femur on tibia to initiate flexion.

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**22. The popliteal fossa contains how many lymph nodes on average?**

- A. 2–3
- B. 4–5
- C. 6–7
- D. 10–12

**Answer:** C. 6–7

**Explanation:** Usually arranged along popliteal vessels and small saphenous vein.

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**23. Foot drop results from injury to:**

- A. Tibial nerve
- B. Common peroneal nerve
- C. Sciatic nerve
- D. Sural nerve

**Answer:** B. Common peroneal nerve

**Explanation:** Causes loss of dorsiflexion and eversion.

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**24. Which of the following is a content of the popliteal fossa?**

- A. Femoral artery
- B. Great saphenous vein
- C. Small saphenous vein termination
- D. Anterior tibial artery

**Answer:** C. Small saphenous vein termination

**Explanation:** It drains into the popliteal vein within the fossa.

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**25. The popliteal artery is most prone to aneurysm because:**

- A. It is superficial
- B. It lies in a fixed, deep compartment
- C. It has no collateral branches
- D. It lies in loose connective tissue

**Answer:** B. It lies in a fixed, deep compartment

**Explanation:** Compression between bone and fascia predisposes it to aneurysmal dilation.

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**Viva Voce — Popliteal Fossa**

**1. What is the popliteal fossa?**

A diamond-shaped depression on the **posterior aspect of the knee joint**, formed by muscles of the thigh and leg, containing major vessels and nerves.

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**2. What is the position of the limb to study or palpate the popliteal fossa?**

The knee should be **slightly flexed** to relax the fascia and hamstrings.

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### 3. Name the boundaries of the popliteal fossa.

- **Superolateral:** Biceps femoris
  - **Superomedial:** Semimembranosus and semitendinosus
  - **Inferolateral and Inferomedial:** Two heads of gastrocnemius
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### 4. What forms the roof of the popliteal fossa?

Skin, superficial fascia (containing small saphenous vein and cutaneous nerves), and deep fascia (popliteal fascia).

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### 5. What forms the floor of the popliteal fossa?

Popliteal surface of femur, posterior capsule of knee joint, oblique popliteal ligament, and popliteus muscle.

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### 6. What are the contents of the popliteal fossa?

- **Tibial nerve** (most superficial)
  - **Popliteal vein** (middle)
  - **Popliteal artery** (deepest)
  - **Common peroneal nerve, posterior cutaneous nerve of thigh, popliteal lymph nodes, and fat.**
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### 7. What is the order of structures from superficial to deep?

Tibial nerve ? Popliteal vein ? Popliteal artery

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### 8. What is the order of structures from medial to lateral in the upper part of the fossa?

Artery ? Vein ? Nerve (A–V–N)

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## 9. What is the continuation of the popliteal artery above and below?

- **Above:** Continuation of **femoral artery** (after adductor hiatus)
  - **Below:** Divides into **anterior and posterior tibial arteries** at lower border of popliteus.
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## 10. What are the genicular branches of the popliteal artery?

Superior medial, superior lateral, inferior medial, inferior lateral, and middle genicular arteries.

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## 11. What is the main function of the popliteus muscle?

It **unlocks the knee joint** by **laterally rotating the femur** on tibia to initiate flexion.

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## 12. Which vein drains into the popliteal vein?

**Small (short) saphenous vein.**

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## 13. Which nerve forms the sural nerve along with tibial branches?

**Common peroneal nerve** joins the **medial sural cutaneous branch** of tibial nerve to form the **sural nerve**.

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## 14. What is the clinical importance of the popliteal artery?

- Used to **record blood pressure** in the lower limb.
  - Site of **aneurysm** or **thrombosis** due to its fixed deep position.
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## 15. What is the clinical importance of the popliteal vein?

May develop **deep vein thrombosis (DVT)** after long bed rest or surgery, causing swelling and risk of pulmonary embolism.

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## 16. What is the common site of nerve injury near the knee?

**Common peroneal nerve** around the **neck of fibula**, leading to **foot drop**.

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**17. What is the lymphatic drainage of the lateral foot?**

To **popliteal lymph nodes**, then to **deep inguinal nodes**.

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**18. Why is the popliteal artery prone to aneurysm?**

Because it lies **deep and fixed** between rigid structures — the femur and popliteal fascia — preventing expansion during pulsation.

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**19. What is a Baker's cyst?**

A **fluid-filled swelling** (synovial outpouching) in the popliteal fossa, usually between semimembranosus and medial gastrocnemius due to chronic knee inflammation.

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**20. What is the surface marking of the popliteal artery?**

From the **adductor hiatus** to the **midpoint between condyles of tibia**; its pulse is felt in the fossa with knee flexed.

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**21. What is the popliteal pulse and how is it palpated?**

Pulse of popliteal artery felt with the knee **flexed**; deep palpation in the midline between tendons of hamstrings.

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**22. What is “locking” of the knee joint?**

When in full extension, the femur **medially rotates** on tibia, making the joint stable and energy-efficient in standing.

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**23. What is the role of the genicular anastomosis?**

Ensures **collateral circulation** to the leg when the popliteal artery is compressed during flexion or blocked above the knee.

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**24. What happens in injury to the tibial nerve in the fossa?**

Loss of **plantar flexion**, **sole sensation**, and **weakness in toe flexion**.

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**25. What happens in injury to the common peroneal nerve at fibular neck?**

**Foot drop** due to paralysis of dorsiflexors and evertors of the foot.

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**26. What does the posterior cutaneous nerve of thigh supply?**

Skin of **posterior thigh and upper popliteal fossa.**

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**27. What are the popliteal lymph nodes enlarged in?**

Infections or ulcers on **lateral foot** or **posterior leg.**

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**28. What are the main arteries participating in the genicular anastomosis?**

- Superior and inferior genicular arteries (medial & lateral)
  - Descending genicular artery
  - Descending branch of lateral circumflex femoral artery
  - Anterior and posterior tibial recurrent arteries.
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**29. Which nerve gives the genicular branch to the knee joint?**

**Posterior division of obturator nerve.**

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**30. What clinical finding indicates coarctation of aorta?**

**Lower popliteal pulse pressure** compared to brachial pulse due to reduced lower limb blood flow.