

# Front of Thigh : FAQs, MCQs and Viva Voce

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## Frequently Asked Questions — Front of Thigh

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### 1. What are the boundaries of the femoral triangle?

- **Base:** Inguinal ligament
- **Lateral boundary:** Medial border of sartorius
- **Medial boundary:** Medial border of adductor longus
- **Apex:** Point where sartorius crosses adductor longus
- **Roof:** Skin, superficial fascia, deep fascia (cribriform fascia)
- **Floor:** Iliacus, psoas, pectineus, adductor longus

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### 2. What are the contents of the femoral triangle?

- **Femoral artery and its branches**
- **Femoral vein and its tributaries**
- **Femoral nerve and its branches**
- **Femoral sheath and femoral canal**

- Deep inguinal lymph nodes

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### 3. What are the boundaries of the femoral ring?

- **Anterior:** Inguinal ligament
- **Posterior:** Pecten and fascia covering it
- **Medial:** Lacunar ligament
- **Lateral:** Femoral vein

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### 4. What are the contents of the femoral canal?

- Areolar tissue
- Fat
- Deep inguinal lymph node (of Cloquet)
- Lymphatic vessels connecting superficial and deep inguinal nodes

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### 5. What structures pass through the saphenous opening?

- Great saphenous vein
- Superficial epigastric vein
- Superficial external pudendal vein
- Superficial circumflex iliac vein

- Superficial inguinal lymphatics

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## 6. What is the femoral sheath and its significance?

- A **funnel-shaped fascial sleeve** enclosing upper 3–4 cm of femoral vessels.
- Formed by **fascia transversalis (front)** and **fascia iliaca (behind)**.
- Divided into **three compartments**:
  - Lateral ? Femoral artery
  - Intermediate ? Femoral vein
  - Medial ? Femoral canal

### Clinical relevance:

Site for **femoral hernia** and **vascular catheterization**.

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## 7. What is the femoral ring?

- Upper opening of the femoral canal, leading into the abdomen.
- Important because **abdominal contents can herniate** through it, producing a **femoral hernia**.

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## 8. What is the adductor (Hunter's or subsartorial) canal?

- A **musculofascial tunnel** on the medial side of the middle third of thigh.
- Extends from the **apex of femoral triangle** to the **adductor hiatus**.

- Transmits **femoral artery**, **femoral vein**, **saphenous nerve**, and **nerve to vastus medialis**.

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## 9. What is the clinical importance of the adductor canal?

- Used for **adductor canal nerve block** during knee surgeries.
- Site for **femoral artery ligation** in popliteal aneurysm.
- Can be compressed to control bleeding.

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## 10. What are the muscles forming the floor of femoral triangle?

- Lateral to medial ? **Iliacus**, **Psoas major**, **Pectineus**, **Adductor longus**.

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## 11. What is the patellar reflex (knee jerk) and what does it test?

- Reflex contraction of quadriceps when **patellar ligament** is tapped.
- Tests **integrity of L3–L4 spinal segments** and **femoral nerve**.

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## 12. Which is the chief extensor of the knee?

- **Quadriceps femoris**.

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## 13. Which muscle prevents lateral displacement of the patella?

- **Vastus medialis**.

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14. Which is the chief flexor of the hip joint?

- Iliopsoas.

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15. Which is the longest muscle in the body?

- Sartorius.

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16. Name the muscles forming the quadriceps femoris.

- Rectus femoris
- Vastus medialis
- Vastus lateralis
- Vastus intermedius

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17. What is the insertion of the quadriceps femoris?

- Common tendon inserted into **upper border of patella** and via **ligamentum patellae** to **tibial tuberosity**.

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18. What is the function of the iliotibial tract?

- Thickened lateral part of fascia lata.
- Maintains **knee stability** during extension and partial flexion.
- Receives insertions of **tensor fasciae latae** and **gluteus maximus**.

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## 19. What is the clinical importance of fascia lata?

- Used as **graft material** in reconstructive surgeries (e.g., dura repair, ptosis correction).
- Weakness in fascia lata can contribute to **varicose veins** near saphenous opening.

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## 20. Which nerve supplies the anterior compartment of thigh?

- **Femoral nerve (L2–L4).**

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## 21. What is the branch of femoral nerve that continues below the knee?

- **Saphenous nerve.**

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## 22. What is the largest branch of the femoral artery?

- **Profunda femoris artery.**

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## 23. What is the clinical importance of the femoral artery?

- Common site for **arterial pulse palpation, catheterization, and angiography**.
- Can be compressed at **midinguinal point** to stop bleeding.

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## 24. What are the superficial branches of femoral artery?

- Superficial epigastric
- Superficial circumflex iliac

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- Superficial external pudendal arteries

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## 25. What is the profunda femoris artery and what are its branches?

- Main artery of the thigh.
- Branches:
  - Medial circumflex femoral artery
  - Lateral circumflex femoral artery
  - Four perforating arteries

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## 26. What is the course of the great saphenous vein?

- Begins at **medial end of dorsal venous arch**, passes in front of **medial malleolus**, runs along **medial thigh**, and ends in **femoral vein** after piercing the **cribriform fascia**.

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## 27. What are the contents of the subsartorial (adductor) canal?

- Femoral artery
- Femoral vein
- Saphenous nerve
- Nerve to vastus medialis

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## 28. Which structure passes through the adductor hiatus?

- **Femoral artery and vein** — continue as **popliteal vessels** behind the knee.

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## 29. What is the saphenous opening?

- Oval gap in fascia lata, 4 cm below and lateral to pubic tubercle.
- Transmits **great saphenous vein** and **superficial branches** of femoral artery.

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## 30. What is the clinical significance of the femoral triangle?

- Pulse palpation
- Arterial catheterization
- Venous cannulation
- Nerve block
- Site of femoral hernia and aneurysm

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## 31. What is the root value of femoral nerve?

- **L2, L3, L4.**

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## 32. What are the branches of femoral nerve in the thigh?

- **Anterior division:** Sartorius, medial and intermediate cutaneous nerves.
- **Posterior division:** Quadriceps, saphenous nerve, articular branches.

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### 33. What are the boundaries of the adductor canal?

- **Anterolateral wall:** Vastus medialis.
- **Posteromedial wall:** Adductor longus and magnus.
- **Medial wall (roof):** Fibrous membrane covered by sartorius.

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### 34. What is the function of the iliopsoas muscle?

- Chief flexor of thigh; also flexes trunk when thigh is fixed.

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### 35. Which muscle is responsible for tailor's sitting position (cross-legged)?

- Sartorius.

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### 36. What is the function of articularis genu?

- Pulls the synovial membrane of the knee upward during extension to prevent pinching.

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### 37. What is the direction of fibers of sartorius muscle?

- Oblique — from **ASIS** to **medial tibia**; forms lateral boundary of femoral triangle.

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### 38. What are the branches of the lateral circumflex femoral artery?

- Ascending branch ? to gluteal region.
- Transverse branch ? around upper femur.

- Descending branch ? to vastus lateralis and knee.

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### 39. What is the main venous drainage of the front of the thigh?

- **Great saphenous vein** (superficial) and **femoral vein** (deep).

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### 40. What are the effects of femoral nerve injury?

- Paralysis of quadriceps ? inability to extend knee.
- Loss of patellar reflex.
- Sensory loss over anterior and medial thigh, and medial leg.

### Multiple Choice Questions — Front of Thigh

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#### 1. The femoral artery is a continuation of which vessel?

- A. Internal iliac artery
- B. External iliac artery
- C. Inferior epigastric artery
- D. Deep femoral artery

**Answer:** B. External iliac artery

**Explanation:** The femoral artery begins at the midinguinal point as the continuation of the external iliac artery.

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#### 2. The chief extensor of the knee joint is:

- A. Sartorius
- B. Iliopsoas
- C. Quadriceps femoris
- D. Tensor fasciae latae

**Answer:** C. Quadriceps femoris

**Explanation:** Quadriceps femoris is the main extensor of the knee, composed of four heads.

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**3. The femoral nerve is derived from which spinal segments?**

- A. L1–L2
- B. L2–L4
- C. L4–S1
- D. L5–S3

**Answer:** B. L2–L4

**Explanation:** The femoral nerve arises from the posterior divisions of L2, L3, and L4 of the lumbar plexus.

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**4. Which muscle forms the lateral boundary of the femoral triangle?**

- A. Adductor longus
- B. Sartorius
- C. Tensor fasciae latae
- D. Rectus femoris

**Answer:** B. Sartorius

**Explanation:** Sartorius crosses the thigh obliquely and forms the lateral boundary of the triangle.

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**5. The floor of the femoral triangle is formed by which muscles (from lateral to medial)?**

- A. Sartorius, Pectineus, Adductor longus
- B. Psoas, Iliacus, Pectineus, Adductor longus
- C. Pectineus, Sartorius, Gracilis
- D. Iliacus, Sartorius, Adductor longus

**Answer:** B. Psoas, Iliacus, Pectineus, Adductor longus

**Explanation:** These muscles form the muscular floor of the femoral triangle.

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**6. The femoral sheath encloses all of the following EXCEPT:**

- A. Femoral artery
- B. Femoral vein
- C. Femoral canal
- D. Femoral nerve

**Answer:** D. Femoral nerve

**Explanation:** The femoral nerve lies outside the femoral sheath, lateral to the artery.

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**7. The medial compartment of the femoral sheath contains:**

- A. Femoral artery
- B. Femoral vein
- C. Femoral canal
- D. Femoral nerve

**Answer:** C. Femoral canal

**Explanation:** The medial compartment is the femoral canal, containing lymph node of Cloquet and fatty tissue.

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**8. The saphenous nerve is a branch of which nerve?**

- A. Obturator nerve
- B. Sciatic nerve
- C. Femoral nerve
- D. Lateral cutaneous nerve of thigh

**Answer:** C. Femoral nerve

**Explanation:** Saphenous nerve is the terminal branch of the femoral nerve, supplying medial side of leg and foot.

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**9. The largest branch of the femoral artery is:**

- A. Profunda femoris artery
- B. Medial circumflex femoral artery
- C. Lateral circumflex femoral artery
- D. Deep external pudendal artery

**Answer:** A. Profunda femoris artery

**Explanation:** Profunda femoris is the main artery of the thigh, supplying most of its muscles.

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**10. The great saphenous vein drains into the femoral vein through:**

- A. Obturator canal
- B. Adductor hiatus
- C. Saphenous opening
- D. Femoral ring

**Answer:** C. Saphenous opening

**Explanation:** The great saphenous vein passes through the cribriform fascia of saphenous opening to join the femoral vein.

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**11. Which muscle is the chief flexor of the thigh?**

- A. Rectus femoris
- B. Sartorius
- C. Iliopsoas
- D. Pectineus

**Answer:** C. Iliopsoas

**Explanation:** Iliopsoas (iliacus + psoas major) is the most powerful flexor of the hip joint.

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**12. The adductor canal extends from:**

- A. Base of femoral triangle to adductor longus
- B. Apex of femoral triangle to adductor hiatus
- C. Femoral ring to saphenous opening
- D. Lesser trochanter to tibial tuberosity

**Answer:** B. Apex of femoral triangle to adductor hiatus

**Explanation:** Adductor canal transmits femoral vessels to the popliteal fossa through the adductor hiatus.

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**13. The nerve to vastus medialis lies:**

- A. Lateral to femoral artery
- B. Medial to femoral vein
- C. Posterior to femoral artery
- D. Between femoral artery and vein

**Answer:** A. Lateral to femoral artery

**Explanation:** It accompanies the femoral artery in adductor canal, laterally placed.

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**14. The patellar reflex tests which spinal segments?**

- A. L1–L2
- B. L2–L3
- C. L3–L4
- D. L4–L5

**Answer:** C. L3–L4

**Explanation:** Reflex arc involves femoral nerve fibers from L3–L4.

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**15. Which muscle helps in crossing the legs as in a tailor's position?**

- A. Pectineus
- B. Sartorius
- C. Adductor longus
- D. Gracilis

**Answer:** B. Sartorius

**Explanation:** Sartorius flexes, abducts, and laterally rotates the thigh, and flexes the knee.

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**16. The structure passing through adductor hiatus is:**

- A. Saphenous nerve
- B. Femoral artery and vein
- C. Obturator nerve
- D. Great saphenous vein

**Answer:** B. Femoral artery and vein

**Explanation:** Both vessels pass through the adductor hiatus to become popliteal vessels.

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**17. The vastus medialis prevents which movement of patella?**

- A. Medial displacement
- B. Lateral displacement
- C. Upward displacement
- D. Rotation

**Answer:** B. Lateral displacement

**Explanation:** Vastus medialis pulls the patella medially during extension, balancing lateral pull of vastus lateralis.

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**18. The prepatellar bursa is located between:**

- A. Skin and patella
- B. Quadriceps tendon and patella
- C. Patella and femur
- D. Ligamentum patellae and tibia

**Answer:** A. Skin and patella

**Explanation:** The prepatellar bursa lies superficial to patella; inflammation causes *housemaid's knee*.

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**19. The femoral nerve supplies all of the following muscles EXCEPT:**

- A. Pectineus
- B. Sartorius
- C. Gracilis
- D. Vastus lateralis

**Answer:** C. Gracilis

**Explanation:** Gracilis belongs to the medial compartment and is supplied by the obturator nerve.

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**20. The femoral artery can be palpated at:**

- A. Midinguinal point
- B. Midpoint of inguinal ligament
- C. Midpoint between pubic symphysis and ASIS
- D. Midpoint between ASIS and femoral head

**Answer:** A. Midinguinal point

**Explanation:** Pulse of femoral artery is felt midway between ASIS and pubic symphysis.

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**21. Which muscle pulls the synovial membrane upward during knee extension?**

- A. Articularis genu
- B. Vastus lateralis
- C. Vastus medialis
- D. Rectus femoris

**Answer:** A. Articularis genu

**Explanation:** Prevents pinching of synovial membrane during knee extension.

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**22. Femoral hernia occurs through which structure?**

- A. Inguinal canal
- B. Femoral ring
- C. Adductor hiatus
- D. Obturator canal

**Answer:** B. Femoral ring

**Explanation:** The femoral ring is the upper opening of femoral canal; hernia passes through it.

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**23. Which structure lies immediately lateral to the femoral canal?**

- A. Femoral artery
- B. Femoral vein
- C. Femoral nerve
- D. Great saphenous vein

**Answer:** B. Femoral vein

**Explanation:** The femoral vein forms the lateral boundary of the femoral ring.

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**24. Which nerve is affected in meralgia paraesthetica?**

- A. Saphenous nerve
- B. Lateral cutaneous nerve of thigh
- C. Femoral nerve
- D. Obturator nerve

**Answer:** B. Lateral cutaneous nerve of thigh

**Explanation:** Entrapment under the inguinal ligament near ASIS causes tingling and pain over lateral thigh.

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**25. The fascia lata is thickened laterally to form:**

- A. Cribiform fascia
- B. Iliotibial tract
- C. Femoral sheath
- D. Adductor canal

**Answer:** B. Iliotibial tract

**Explanation:** Thickened lateral part of deep fascia receiving gluteus maximus and tensor fasciae latae insertions.

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**26. The commonest site of femoral hernia is:**

- A. Above the inguinal ligament
- B. Below and lateral to pubic tubercle
- C. Medial to pubic symphysis
- D. Over the femoral vein

**Answer:** B. Below and lateral to pubic tubercle

**Explanation:** Distinguishes femoral hernia from inguinal hernia, which lies above and medial.

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**27. The muscle used for intramuscular injection in thigh is:**

- A. Rectus femoris
- B. Vastus lateralis
- C. Sartorius
- D. Gracilis

**Answer:** B. Vastus lateralis

**Explanation:** Safe site in both infants and adults due to absence of major vessels or nerves.

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**28. Which of the following is NOT supplied by the femoral nerve?**

- A. Vastus medialis
- B. Sartorius
- C. Pectineus (partial)
- D. Adductor magnus

**Answer:** D. Adductor magnus

**Explanation:** Supplied mainly by obturator and sciatic nerves, not femoral.

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**29. The femoral vein lies \_\_\_\_\_ to the femoral artery at the inguinal ligament.**

- A. Lateral
- B. Medial
- C. Posterior
- D. Anterior

**Answer:** B. Medial

**Explanation:** The vein is medial to artery at upper thigh, then passes posteriorly at apex of triangle.

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**30. The superficial inguinal lymph nodes drain all of the following EXCEPT:**

- A. Lower limb
- B. Perineum
- C. Anterior abdominal wall below umbilicus
- D. Testis

**Answer:** D. Testis

**Explanation:** Testis drains into **para-aortic lymph nodes**, not superficial inguinal nodes.

### **Viva Voce — Front of the Thigh**

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#### **1. What are the compartments of the thigh?**

**Answer:**

- **Anterior compartment** – extensors of the knee (femoral nerve).
- **Medial compartment** – adductors of the thigh (obturator nerve).
- **Posterior compartment** – flexors of the knee (tibial part of sciatic nerve).

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#### **2. Name the chief flexor of the thigh.**

**Answer:** Iliopsoas muscle (psoas major + iliacus).

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#### **3. Which is the longest muscle in the body?**

**Answer:** Sartorius.

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#### **4. What is the nerve supply of sartorius?**

**Answer:** Femoral nerve (L2–L3).

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## **5. What is the main action of sartorius?**

**Answer:** Flexes the hip and knee, abducts and laterally rotates the thigh — helps in the “tailor’s” cross-leg position.

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## **6. What are the parts of the quadriceps femoris?**

**Answer:** Rectus femoris, vastus lateralis, vastus medialis, and vastus intermedius.

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## **7. Which part of quadriceps also flexes the thigh?**

**Answer:** Rectus femoris.

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## **8. What is the insertion of quadriceps femoris?**

**Answer:** Into the base of patella through the quadriceps tendon and via ligamentum patellae to tibial tuberosity.

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## **9. Which muscle pulls the synovial membrane of the knee upward?**

**Answer:** Articularis genu.

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## **10. What prevents lateral displacement of the patella during knee extension?**

**Answer:** Vastus medialis.

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## **11. What is the root value of the femoral nerve?**

**Answer:** L2, L3, and L4 (posterior divisions).

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## **12. Which muscles are supplied by the femoral nerve in the thigh?**

**Answer:** Iliacus, pectineus (partly), sartorius, quadriceps femoris, and articularis genu.

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## **13. What is the chief action of quadriceps femoris?**

**Answer:** Extension of the knee joint.

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**14. What is the chief extensor of the knee joint?**

**Answer:** Quadriceps femoris.

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**15. What is the sensory branch of the femoral nerve that continues below the knee?**

**Answer:** Saphenous nerve.

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**16. Where can the femoral artery be palpated?**

**Answer:** At the midinguinal point — midway between the anterior superior iliac spine and pubic symphysis.

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**17. What is the largest branch of the femoral artery?**

**Answer:** Profunda femoris artery.

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**18. Name the branches of the femoral artery in the femoral triangle.**

**Answer:**

- Superficial epigastric artery
- Superficial circumflex iliac artery
- Superficial and deep external pudendal arteries
- Profunda femoris artery
- Muscular branches

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**19. What is the adductor (Hunter's) canal?**

**Answer:** A musculo-fascial tunnel in the middle third of the thigh transmitting the femoral artery, femoral vein, saphenous nerve, and nerve to vastus medialis.

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**20. What are the boundaries of the adductor canal?**

**Answer:**

- **Anterolateral wall:** Vastus medialis
- **Posteromedial wall:** Adductor longus and magnus
- **Roof:** Fibrous membrane covered by sartorius.

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**21. What is the content of the femoral canal?**

**Answer:** Fat, lymph vessels, and a deep inguinal lymph node (of Cloquet).

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**22. What is the clinical importance of the femoral canal?**

**Answer:** Site of femoral hernia, especially in females.

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**23. What is the femoral sheath?**

**Answer:** A fascial covering enclosing femoral artery, femoral vein, and femoral canal but not the femoral nerve.

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**24. What forms the femoral sheath?**

**Answer:** Anterior wall from fascia transversalis; posterior wall from fascia iliaca.

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**25. What are the compartments of the femoral sheath?**

**Answer:**

- Lateral: Femoral artery
- Intermediate: Femoral vein

- Medial: Femoral canal.

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## 26. What is the saphenous opening?

**Answer:** An oval gap in the fascia lata about 4 cm below and lateral to pubic tubercle for passage of the great saphenous vein.

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## 27. What passes through the saphenous opening?

**Answer:** Great saphenous vein and superficial branches of femoral artery.

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## 28. What is the cribriform fascia?

**Answer:** Fascia covering the saphenous opening, perforated by veins and lymphatics.

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## 29. What is the extent of the femoral triangle?

**Answer:**

- **Base:** Inguinal ligament
- **Apex:** Where sartorius crosses adductor longus
- **Medial boundary:** Adductor longus
- **Lateral boundary:** Sartorius.

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## 30. What are the contents of the femoral triangle?

**Answer:** From lateral to medial — femoral nerve, femoral artery, femoral vein, and femoral canal (N-A-V-C).

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## 31. Which structure forms the roof of the femoral triangle?

**Answer:** Skin, superficial fascia, deep fascia (fascia lata).

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**32. What forms the floor of the femoral triangle?**

**Answer:** Iliacus, psoas major, pectineus, and adductor longus.

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**33. What is the nerve supply of iliacus?**

**Answer:** Femoral nerve.

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**34. What is the nerve supply of psoas major?**

**Answer:** Ventral rami of L1–L3 spinal nerves.

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**35. What is the insertion of iliopsoas?**

**Answer:** Lesser trochanter of the femur.

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**36. What is the action of iliopsoas?**

**Answer:** Chief flexor of the thigh at the hip joint.

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**37. What is the site of femoral artery catheterization?**

**Answer:** Just below the inguinal ligament at the midinguinal point.

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**38. What is the patellar reflex?**

**Answer:** Reflex extension of the knee on tapping the ligamentum patellae — tests L3–L4 segments.

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**39. What are the superficial inguinal lymph nodes related to?**

**Answer:** Drain skin of lower limb, perineum, and lower anterior abdominal wall below umbilicus.

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#### **40. What causes meralgia paraesthetica?**

**Answer:** Compression of lateral cutaneous nerve of thigh under the inguinal ligament near ASIS.

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#### **41. What is the clinical importance of vastus medialis?**

**Answer:** Stabilizes the patella and prevents its lateral displacement during extension.

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#### **42. What muscle is used for intramuscular injection in the thigh?**

**Answer:** Vastus lateralis.

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#### **43. What is the femoral ring?**

**Answer:** The upper opening of the femoral canal through which femoral hernia may occur.

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#### **44. What is the relationship of femoral vein to femoral artery at the inguinal ligament?**

**Answer:** The femoral vein lies **medial** to the artery.

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#### **45. What is the relationship of femoral nerve to femoral artery?**

**Answer:** Femoral nerve lies **lateral** to femoral artery and outside the femoral sheath.

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#### **46. What is the main superficial vein of the front of the thigh?**

**Answer:** Great saphenous vein.

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#### **47. What is the function of the iliotibial tract?**

**Answer:** Stabilizes the knee during extension and receives insertions of tensor fasciae latae and gluteus maximus.

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#### **48. What is the clinical importance of fascia lata?**

**Answer:** Used as graft material and maintains venous return by preventing vein dilation.

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**49. What is the site of femoral hernia in relation to pubic tubercle?**

**Answer:** Below and lateral to pubic tubercle.

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**50. Which spinal segments form the patellar tendon reflex arc?**

**Answer:** L3 and L4.