



# ANATOMY TEAM

**22- Popliteal fossa,  
Posterior compartment of leg  
& Sole of foot**

## Objectives:

**At the end of this lecture the students should be**

**able to know:**

- The location, boundaries & contents of the popliteal fossa
- The contents of posterior fascial compartment of Leg.
- The structures hold by retinacula at ankle.
- Layers forming in the sole of foot & bone those form the arches of the foot.

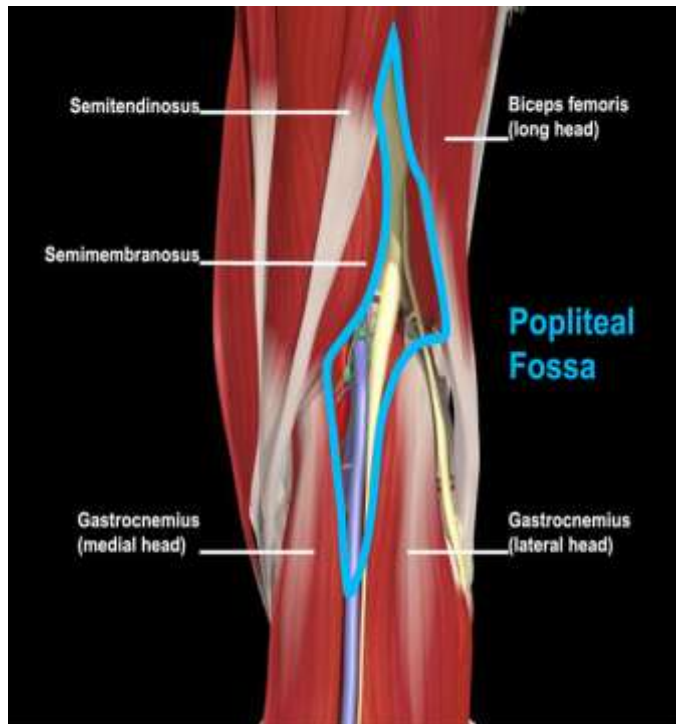
تنويه: هذا الملف لا يعتبر المرجع الاساسي للمذاكره انما هو للمراجعه فقط! المرجع الاساسي هو السلايدات وتم التأكد بأنه لا يوجد أي اختلاف بين الاولاد والبنات ما عدا هذه المعلومة "بالأحمر" عند البنات.

## Fourth Layer

1. Interossei, (3 plantar + 4 dorsal).
2. Peroneus longus tendon,
3. Tibialis posterior tendon

# Popliteal fossa:

## Boundaries:



## Laterally

**above** Biceps femoris

**below** lateral head of gastrocnemius & plantaris

## Medially

**Above** Semimembranosus & semitendinosus

**(semitendinosus is above Semimembranosus)**

**Below** Medial head of gastrocnemius

## Roof

-Skin

-superficial fascia

-deep fascia of the leg.

## Floor

-Popliteal surface of femur

-posterior ligament of knee joint

-popliteus muscle **(the deepest)**

## Contents:

-Popliteal vessels (Artery and veins)

**“Popliteal artery is the deepest”**

-Small saphenous vein

-Tibial nerve **(most superficial one)**

-Common peroneal nerve

-Posterior cutaneous nerve of thigh

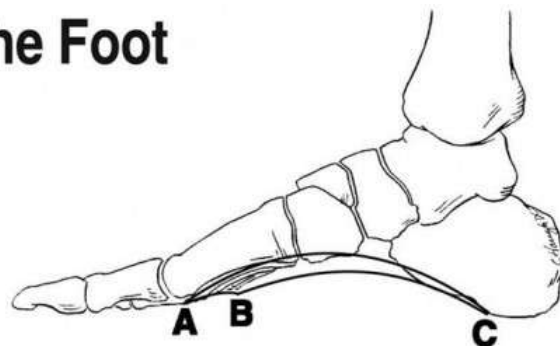
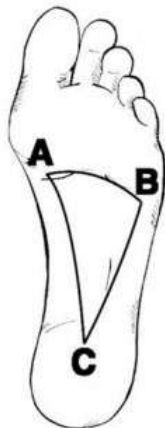
-Connective tissue

- popliteal lymph nodes **(deep but the artery is deepest)**

## Arches of Foot:

Medial longitudinal arch	Lateral longitudinal arch	Transverse arch
Is formed of <u>calcaneum</u> , <u>talus</u> , <u>navicular</u> , <u>3 cuneiform bones</u> , and first <u>medial 3 metatarsal bones</u> .	Is formed of <u>calcaneum</u> , <u>cuboid</u> & <u>lateral 4<sup>th</sup> &amp; 5<sup>th</sup> metatarsal bones</u>	Lies at the level of tarso-metatarsal joints, formed of <u>bases of metatarsal bones</u> , <u>cuboid</u> & <u>3 cuneiform bones</u> .

## Arches of the Foot



A-B Anterior Transverse Arch  
 B-C Lateral Longitudinal Arch  
 A-C Medial Longitudinal Arch

Babies have flat foot ( no arch), *because of presence of a large amount of subcutaneous fat on the sole of foot*

## Important Notes:

1-popliteal artery **divides** into : anterior tibial artery and posterior tibial artery

2-soleus muscle **have no flex of knee action** because its origin is not in the condyle.

3- lateral head of Gastrocnemius muscle is EXTRACAPSULAR

4-Popliteal muscle is INTRACAPSULAR

5-the insertion of Plantaris muscle is not via tendo calcaneus

6-INSERSTION OF Flexor digitorum longus is in the base of distal phalanges of the lateral 4 toes

7-**flexors** are in the posterior surface of the leg.

8- Tibialis posterior insertion in the Tuberosity of navicular bone and other neighboring bones.

(neighboring bones means: base of metatarsal & other tarsal bones.)

9-Unlock leg: ligaments are relaxed & lateral rotation of femur on tibia.

10-ankle joint CANNOT do eversion and inversion

11-muscles responsible for inversion and eversion:

Inversion	Eversion
t <b>l</b> ibialis anterior	p <b>E</b> roneus longus
t <b>l</b> ibialis posterior	p <b>E</b> roneus brevis
Extensor hallucis longus	p <b>E</b> roneus terius

12-Sole of the foot have 4 layers.



1-Abductor hallucis, 2-Flexor digitorum brevis, 3-Abductor digiti minimi	1-Quadratus plantae, 2-Lumbricals, 3-Flexor digitorum longus <b>tendon</b> 4-Flexor hallucis longus <b>tendon</b>	1-Flexor hallucis brevis 2-Adductor hallucis 3-Flexor digiti minimi brevis	1-Interossei 2-Peroneus longus <b>tendon</b> 3-Tibialis posterior <b>tendon</b>
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\*check the slides for the pictures to understand it well\*

13-adductor hallucis has an **oblique** and **transverse** heads

14-ALL the muscles responsible for **ABduction** are in the **dorsal**.

15-ALL the muscles responsible for **ADduction** are in the **planter**.

16-Fibrous Flexor Sheaths forms a **tunnel** at the sides of phalanges “زي النفق وبس تغطي الجوانب ماتغطي بشكل كامل”

17-Synovial Flexor Sheaths “تغطيه بشكل كامل”

## Mnemonics:

**Popliteal fossa: medial to lateral arrangement**

"Serve **A**nd **V**olley **N**ext **B**all":

Semimembranosus/ **S**emitendonosus

**A**rtery

**V**ein

**N**erve

**B**iceps femoris

· Lateral and medial heads of Gastrocnemius are inferior borders.

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**Soleus vs. gastrocnemius muscle function**

"**S**tand on your **S**oles. **E**xplosive **g**as":

You **stand** on soles of your shoes, so **Soleus** is for posture.

Gasoline is explosive, so **Gastrocnemius** is for **explosive** movement.

## Flashcards:

<http://quizlet.com/13441741/muscles-of-posterior-compartment-of-leg-flash-cards/>

<http://quizlet.com/15383606/posterior-compartment-of-the-leg-superficial-flash-cards/>

<http://quizlet.com/1956090/arches-of-the-foot-flash-cards/>

## **Quick Review:**

**Q1: what is Popliteal Fossa?**

**Is a diamond-shaped intermuscular space at the back of knee**

**Q2: what does the roof of popliteal fossa contain?**

**Skin, superficial fascia and deep fascia of the leg.**

**Q3: what is the superficial group of the posterior compartment of the leg?**

- 1. Plantaris**
- 2. Gastrocnemius**
- 3. Soleus**

**Q4: what is the deep group of the posterior compartment of the leg?**

- 1. Popliteus**
- 2. Flexor digitorum longus**
- 3. Flexor hallucis longus**
- 4. Tibialis posterior**

**Q5: deep and superficial group of muscles are innervated by which nerve?**

**Tibial nerve**



**Q6:where does the Soleus muscle origin from?**

**Shafts of tibia and fibula**

**Q7:what is the action of Flexor digitorum longus?**

**1-Flexes distal phalanges of lateral four toes**

**2-plantar Flexes foot at ankle joint**

**3-Supports medial and lateral longitudinal arches**

**Q8: what are the Structures passing posterior to medial malleolus, deep to flexor retinaculum ? *Medial to lateral***

**1-Tibialis posterior tendon**

**2-Flexor digitorum longus tendon**

**3-Posterior tibial artery with venae comitantes**

**4-Tibial nerve**

**5-Flexor hallucis longus tendon**

**Q9:what is plantar aponeurosis?**

**triangular thickening of the deep fascia that protects the underlying nerves, blood vessels, and muscles.**

**Q10:what is the Function of Arches of the Foot?**

**1-Weight bearing**

**2-Support walking & running**

**3-Provide potential space neurovascular bundle of the sole**

**4-Act as shock absorber**

## Quiz:

1-The popliteal fossa is a space or shallow depression located at the back of the \_\_\_\_\_.

a-Lower limb

b-hip

c-knee

2-which of the following is found in the FLOOR of popliteal fossa?

a-deep fascia of the leg

b-Biceps femoris

c-popliteus muscle

3- the transverse intermuscular septum in the leg divides the muscles of the posterior compartment into?

a-Inferior and superior

b-Right and left

c-Deep and superficial

4- which of the following muscles provides main propulsive force in walking an running?

a- Soleus

b- Flexor hallucis longus

c- Popliteus

5-which muscle in the posterior compartment of the leg can invert the foot?

a- Flexor hallucis longus

b- Tibialis posterior

c-Flexor digitorum longus

6-which of the following is the most superficial in the popliteal fossa content?

a-tibial nerve

b- Small saphenous vein

c-popliteal lymph nodes

7-which of the following is the deepest in the popliteal fossa content?

a- Tibial nerve

b- popliteus muscle

c- Popliteal artery

8- Which of the following describes an action of the gastrocnemius muscle?

a- flexes knee joint

b- extent knee joint

c-dorsiflexes the foot

9-which of the following is a terminal branch of the popliteal artery?

a-femoral artery

b-posterior tibial artery

c-fibular artery

10-what is the most medial structure that pass deep to the flexor retinaculum?

a-Tibialis posterior tendon

b-Flexor digitorum longus tendon

c-Posterior tibial artery

11.Which structure passes deep to flexor retinaculum ?

a-Tendocalcaneus.

b-Tibialis posterior tendon.

c- Common peroneal nerve.

12.The upper lateral boundary of popliteal fossa is formed by

a- Semimembranosus .

b- Semitendinosus.

c- Biceps femoris.

1	c
2	c
3	c
4	a
5	b
6	a
7	c
8	a
9	b
10	a
11	b
12	c

STUDY HARD &  
GOOD LUCK =)