

Lower Leg Anatomy Quiz Answer Key PDF

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Discuss the potential impact of a fibula fracture on lower leg function and mobility.

A fibula fracture can lead to decreased mobility and function in the lower leg, as it may cause pain, swelling, and instability, making it challenging to walk or bear weight on the affected leg.

What is the primary function of the tibialis anterior muscle?

- A. Plantarflex ion
- B. Dorsiflex ion ✓**
- C. Eversion
- D. Knee extension

Which bone is located lateral to the tibia?

- A. Femur
- B. Patella
- C. Fibula ✓**
- D. Talus

Which arteries supply blood to the lower leg? (Select all that apply)

- A. Anterior tibial artery ✓**
- B. Popliteal artery ✓**
- C. Posterior tibial artery ✓**
- D. Radical artery

What are the main functions of the fibula? (Select all that apply)

- A. Weight-bearing
- B. Muscle attachment ✓**

C. Stabilizing the ankle ✓

D. Protect the knee joint

Which condition is characterized by increased pressure within a muscle compartment?

A. Tendinitis

B. Shin splints

C. Compartment syndrome ✓

D. Sprain

Which nerve supplies the posterior compartment of the lower leg?

A. Sciatic nerve

B. Common fibular nerve

C. Tibial nerve ✓

D. Femoral nerve

Which ligament is primarily responsible for stabilizing the medial side of the ankle?

A. Anterior talofibular ligament

B. Deltoid ligament ✓

C. Calcaneofibular ligament

D. Posterior cruciate ligament

Which of the following are part of the lateral ligaments of the ankle? (Select all that apply)

A. Anterior talofibular ligament ✓

B. Deltoid ligament

C. Calcaneofibular ligament ✓

D. Posterior talofibular ligament ✓

Discuss the differences in function between the anterior and posterior compartments of the lower leg.

The anterior compartment contains muscles like the tibialis anterior, which dorsiflexes the foot, and the extensor digitorum longus, which extends the toes. In contrast, the posterior compartment

includes muscles such as the gastrocnemius and soleus, which are responsible for plantarflexion of the foot and flexion of the toes.

Explain the role of the tibia in the lower leg and how it contributes to movement and stability.

The tibia supports the body's weight, provides attachment points for muscles, and helps maintain balance and stability during movement.

Describe the blood supply to the lower leg and its importance for muscle function.

The lower leg receives its blood supply mainly from the anterior tibial artery and the posterior tibial artery, which are branches of the popliteal artery. This vascularization is essential for muscle function, as it ensures adequate oxygen and nutrient delivery, facilitating muscle contraction and overall mobility.

Which bone is known as the shinbone?

- A. Fibula
- B. Tibia ✓**
- C. Patella
- D. Femur

Which muscle is part of the superficial posterior compartment of the lower leg?

- A. Tibialis anterior
- B. Peroneus longus
- C. Gastrocnemius ✓**
- D. Flexor digitorum longus

Which muscles are involved in plantarflexion of the foot? (Select all that apply)

- A. Gastrocnemius ✓**
- B. Soleus ✓**
- C. Tibialis anterior
- D. Flexor digitorum longus ✓**

Which muscles are located in the anterior compartment of the lower leg? (Select all that apply)

- A. Tibialis anterior ✓**
- B. Peroneus longus
- C. Extensor digitorum longus ✓**
- D. Soleus

Describe the process and implications of compartment syndrome in the lower leg.

Compartment syndrome in the lower leg is characterized by increased pressure within the muscle compartments, leading to reduced blood flow, tissue ischemia, and potential necrosis. It typically results from trauma, fractures, or excessive exercise, and requires urgent treatment, often surgical fasciotomy, to relieve pressure and restore circulation.

What is the continuation of the femoral artery in the lower leg?

- A. Anterior tibial artery
- B. Popliteal artery ✓**
- C. Posterior tibial artery
- D. Dorsalis pedis artery

Explain how the structure of the knee joint contributes to its stability and movement.

The knee joint is stabilized by ligaments such as the ACL and PCL, which prevent excessive movement, while the menisci and articular cartilage provide cushioning and support, allowing for smooth movement and weight distribution.

Which of the following are common injuries of the lower leg? (Select all that apply)

- A. Fractures ✓**
- B. Sprains ✓**
- C. Tendinitis ✓**
- D. Osteoporosis