

Lower Extremity Muscle Quiz Questions and Answers PDF

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The gluteus medius is primarily involved in which movement?

- Hip flexation
- Hip abduction ✓
- Hip adduction
- Hip extension

The gluteus medius is primarily involved in hip abduction, which is the movement of the leg away from the midline of the body. It also plays a role in stabilizing the pelvis during walking and running.

What is the primary action of the tibialis anterior muscle?

- Plantarflexation
- Hip extension
- Knee flexation
- Dorsiflexation ✓

The tibialis anterior muscle primarily functions to dorsiflex the foot at the ankle joint, which means it helps lift the foot upwards. Additionally, it assists in inverting the foot.

What nerve innervates the quadriceps muscle group?

- Sciatic nerve
- Femoral nerve ✓
- Tibial nerve
- Obturator nerve

The quadriceps muscle group is primarily innervated by the femoral nerve, which is responsible for the motor function of these muscles in the anterior thigh.

Which muscle is part of the hamstring group?

- Vastus lateralis
- Rectus femoris
- Gluteus minimus
- Semitendinosus ✓**

The hamstring group consists of three main muscles located at the back of the thigh, which are responsible for knee flexation and hip extension. One of the primary muscles in this group is the biceps femoris.

Which muscle is located in the calf and assists in plantarflexation?

- Soleus ✓**
- Gracilis
- Pectineus
- Sartorius

The gastrocnemius muscle is located in the calf and plays a crucial role in plantarflexation, which is the movement of pointing the toes downward. It works in conjunction with the soleus muscle to facilitate this action during activities like walking and running.

How do plantarflexors and dorsiflexors contribute to walking and running mechanics?

Plantarflexors, such as the gastrocnemius and soleus, help propel the body forward during the push-off phase, while dorsiflexors, like the tibialis anterior, control foot placement and prevent dragging during the swing phase.

What are the primary differences in function between the gluteus maximus and gluteus medius?

The gluteus maximus is primarily responsible for hip extension and external rotation, whereas the gluteus medius primarily facilitates hip abduction and stabilizes the pelvis.

Which muscles are involved in knee flexation?

- Biceps femoris ✓**
- Rectus femoris
- Semimembranosus ✓**
- Semitendinosus ✓**

The primary muscles involved in knee flexation include the hamstrings, which consist of the biceps femoris, semitendinosus, and semimembranosus. Additionally, the gastrocnemius muscle also plays a role in this movement.

Explain the significance of the femoral artery in the vascular supply of the lower extremity.

The femoral artery is the main arterial supply to the lower extremity, providing blood to the thigh and branching into the popliteal artery, which further supplies the knee and lower leg.

Outline the rehabilitation process for a hamstring strain.

1. Rest and protect the injured area. 2. Apply RICE (Rest, Ice, Compression, Elevation) for the first 48-72 hours. 3. Gradually introduce gentle stretching and range of motion exercises. 4. Progress to strengthening exercises focusing on the hamstrings and surrounding muscles. 5. Incorporate sport-specific drills and functional training. 6. Return to full activity only when pain-free and strength is restored.

Which muscles are primarily responsible for hip extension?

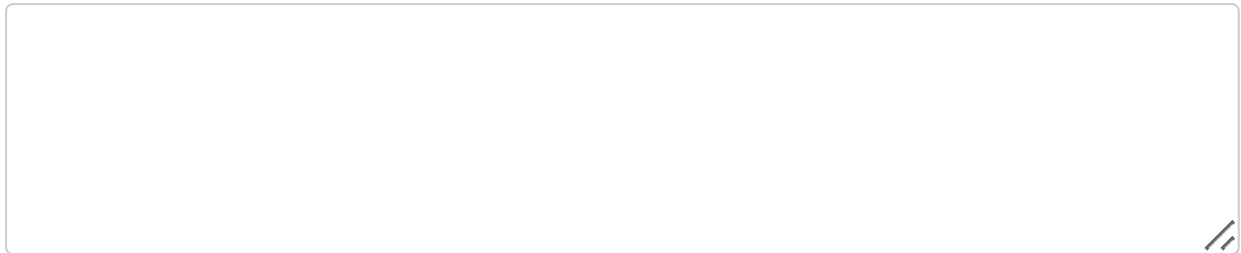
- Gluteus maximus ✓
- Rectus femoris
- Vastus lateralis
- Semitendinosus ✓

The primary muscles responsible for hip extension are the gluteus maximus and the hamstrings. These muscles work together to extend the hip joint during activities such as walking, running, and climbing.

Discuss the impact of a sciatic nerve injury on lower extremity function.

The impact of a sciatic nerve injury on lower extremity function includes reduced strength and coordination in the leg muscles, altered gait patterns, and potential loss of sensation, leading to difficulties in walking, standing, and performing everyday tasks.

Describe the role of the quadriceps muscle group in daily activities.



The quadriceps muscle group plays a crucial role in daily activities by enabling knee extension, which is necessary for movements such as walking, running, squatting, and climbing stairs.

Which artery supplies blood to the thigh region?

- Popliteal artery
- Anterior tibial artery
- Posterior tibial artery
- Femoral artery ✓**

The femoral artery is the primary artery that supplies blood to the thigh region. It branches from the external iliac artery and runs down the thigh, providing oxygenated blood to the muscles and tissues.

Which muscles contribute to hip stabilization?

- Gluteus maximus ✓**
- Tibialis anterior
- Vastus intermedius
- Gluteus medius ✓**

The primary muscles that contribute to hip stabilization include the gluteus medius, gluteus minimus, and the hip adductors. These muscles work together to maintain pelvic alignment and support the hip joint during movement.

Which muscle is commonly associated with shin splints?

- Gastrocnemius
- Soleus
- Plantaris
- Tibialis anterior ✓**

Shin splints are commonly associated with the tibialis anterior muscle, which is located in the front of the lower leg. This condition often arises from overuse or strain on the muscles and tendons around the shin area.

Which muscles are innervated by the sciatic nerve?

- Biceps femoris ✓
- Semimembranosus ✓
- Rectus femoris
- Vastus medialis

The sciatic nerve innervates the muscles of the posterior thigh, including the hamstrings, as well as the muscles of the lower leg and foot through its branches.

What are common injuries associated with the lower extremity muscles?

- Patellar tendinitis ✓
- Rotator cuff tear
- Shin splints ✓
- Hamstring strain ✓

Common injuries associated with the lower extremity muscles include strains, sprains, tendonitis, and muscle tears. These injuries often result from overuse, improper technique, or sudden increases in activity levels.

Which of the following muscles are part of the adductor group?

- Adductor magnus ✓
- Gracilis ✓
- Gluteus maximus
- Sartorius

The adductor group consists of muscles that are primarily responsible for adductively moving the thigh towards the midline of the body. Key muscles in this group include the adductor longus, adductor brevis, and adductor magnus.

Which muscle is primarily responsible for knee extension?

- Biceps femoris
- Gluteus maximus
- Tibialis anterior

Rectus femoris ✓

The quadriceps femoris muscle group is primarily responsible for knee extension, as it contracts to straighten the leg at the knee joint.