

## Lower Extremity Anatomy Quiz Questions and Answers PDF

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#### Which ligament stabilizes the lateral side of the knee?

- Anterior cruciate ligament
- Medial collateral ligament
- Lateral collateral ligament ✓**
- Posterior cruciate ligament

The ligament that stabilizes the lateral side of the knee is the lateral collateral ligament (LCL). It plays a crucial role in maintaining the stability of the knee joint during movement and preventing excessive lateral movement.

#### The Achilles tendon connects which muscle group to the heel bone?

- Quadriceps
- Hamstrings
- Calf muscles ✓**
- Gluteal muscles

The Achilles tendon connects the calf muscles, specifically the gastrocnemius and soleus muscles, to the heel bone (calcaneus). This tendon is crucial for walking, running, and jumping as it allows for the extension of the foot.

#### Discuss the clinical significance of the sciatic nerve and potential complications associated with its injury.

The clinical significance of the sciatic nerve lies in its role in innervating the posterior thigh, lower leg, and foot, making it essential for movement and sensation. Injury to the sciatic nerve can result in sciatica, characterized by pain radiating down the leg, as well as potential complications like muscle weakness, loss of reflexes, and impaired ability to walk.

Which nerves supply the lower leg and foot? (Select all that apply)

- Sciatic nerve
- Femoral nerve
- Tibia nerve ✓
- Peroneal nerve ✓

The lower leg and foot are primarily supplied by the tibialis anterior, peroneal (fibular), and sural nerves, along with branches from the sciatic nerve. These nerves are responsible for motor and sensory functions in the lower extremities.

What are the common symptoms and causes of osteoarthritis in the knee joint?

Common symptoms of osteoarthritis in the knee joint include pain, stiffness, swelling, and decreased range of motion. The causes are primarily age, obesity, previous joint injuries, and repetitive stress.

Which of the following are part of the tarsal bones? (Select all that apply)

- Talus ✓
- Navicular ✓
- Cuboid ✓
- Metatarsals

The tarsal bones consist of seven bones in the foot, including the talus, calcaneus, navicular, cuboid, and three cuneiform bones (medialis, intermedius, and lateralis). These bones play a crucial role in supporting the weight of the body and facilitating movement.

**What is the primary movement of the knee joint?**

- Rotation
- Flexión and extension ✓
- Abduction and adduction
- Circumduction

The primary movement of the knee joint is flexión and extension, allowing the leg to bend and straighten. This movement is crucial for activities such as walking, running, and jumping.

**Explain the gait cycle and its phases in the context of lower extremity movement.**

The gait cycle is divided into two main phases: the stance phase, where the foot is in contact with the ground (approximately 60% of the cycle), and the swing phase, where the foot is off the ground and moving forward (approximately 40% of the cycle). The stance phase includes initial contact, loading response, mid-stance, terminal stance, and pre-swing, while the swing phase includes initial swing, mid-swing, and terminal swing.

**Describe the role of the anterior cruciate ligament (ACL) in knee stability.**

The ACL stabilizes the knee joint by connecting the femur to the tibia and preventing the tibia from sliding forward, thus ensuring proper knee function during dynamic movements.

**Which bone is the longest in the human body?**

- tibia
- Femur** ✓
- Fibula
- Humerus

The longest bone in the human body is the femur, which is located in the thigh. It plays a crucial role in supporting the weight of the body and facilitating movement.

#### Which artery is the main blood supply to the thigh?

- Popliteal artery
- Femoral artery** ✓
- Tibia artery
- Peroneal artery

The main blood supply to the thigh is provided by the femoral artery, which is a continuation of the external iliac artery. It supplies oxygenated blood to the muscles and tissues of the thigh region.

#### What type of joint is the hip joint?

- Hinge
- Ball and socket** ✓
- Pivot
- Saddle

The hip joint is classified as a ball-and-socket joint, which allows for a wide range of motion in multiple directions. This type of joint is characterized by a spherical head fitting into a cup-like socket, providing stability and flexibility.

#### Which nerve is the largest in the human body?

- Femoral nerve
- Obturator nerve
- Sciatic nerve** ✓
- Tibia nerve

The largest nerve in the human body is the sciatic nerve, which runs from the lower back down to the legs. It is responsible for providing sensation and movement to the lower limbs.

#### Which movements are possible at the hip joint? (Select all that apply)

- Flexión ✓
- Extension ✓
- Abduction ✓
- Inversion

The hip joint allows for a variety of movements including flexión, extension, abduction, adduction, internal rotation, and external rotation. These movements enable a wide range of activities such as walking, running, and sitting.

#### Which condition is characterized by inflammation of the plantar fascia?

- Achilles tendinitis
- Plantar fasciitis ✓
- Bursitis
- Osteoarthritis

The condition characterized by inflammation of the plantar fascia is known as plantar fasciitis. This condition often results in heel pain and discomfort, particularly with the first steps in the morning or after prolonged periods of rest.

#### Which bones form the ankle joint? (Select all that apply)

- Talus ✓
- Calcaneus
- Tibia ✓
- Fibula ✓

The ankle joint is primarily formed by the tibia, fibula, and talus bones. These three bones work together to allow for movement and stability in the ankle region.

#### Outline the steps involved in performing a Lachman test and its purpose in clinical examination.

**To perform a Lachman test, the patient lies supine with the knee flex at 20-30 degrees. The examiner stabilizes the femur with one hand while using the other hand to pull the tibia forward. A**

positive test indicates increased anterior translation of the tibia, suggesting ACL injury.

How does the structure of the femur contribute to its function in the lower extremity?

The structure of the femur, characterized by its length, strength, and ball-and-socket joint at the hip, provides stability and mobility, enabling efficient weight-bearing and locomotion in the lower extremity.

Which of the following are ligaments of the knee? (Select all that apply)

- Anterior cruciate ligament ✓
- Deltoid ligament
- Posterior cruciate ligament ✓
- Iliofemoral ligament

The ligaments of the knee include the anterior cruciate ligament (ACL), posterior cruciate ligament (PCL), medial collateral ligament (MCL), and lateral collateral ligament (LCL). These ligaments provide stability and support to the knee joint during movement.

Which muscles are involved in knee extension? (Select all that apply)

- Quadriceps ✓
- Hamstrings
- Gastrocnemius
- Sartorius

The primary muscles involved in knee extension are the quadriceps group, which includes the rectus femoris, vastus lateralis, vastus medialis, and vastus intermedius. These muscles work together to straighten the knee joint during activities such as walking, running, and jumping.