

Lower Limb Anatomy Quiz Questions and Answers PDF

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Which nerve is the largest in the human body?

- Femoral nerve
- Sciatic nerve ✓**
- Obturator nerve
- tibial 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 muscle is primarily responsible for hip extension?

- Gluteus maximus ✓**
- Quadriceps
- Hamstrings
- Gastrocnemius

The gluteus maximus is the primary muscle responsible for hip extension, playing a crucial role in movements such as standing up from a seated position and climbing stairs.

What is the primary function of the anterior tibialis muscle?

- Plantarflexión
- Dorsiflexión ✓**
- Inversion
- Eversion

The anterior tibialis muscle primarily functions to dorsiflex the foot at the ankle joint and assists in inverting the foot. It plays a crucial role in walking, running, and maintaining balance.

What type of joint is the knee?

- Ball and socket
- Hinge ✓
- Pivot
- Saddle

The knee is classified as a hinge joint, which allows for flexional and extensional movements. It is primarily designed for movement in one plane, similar to the motion of a door hinge.

Describe the phases of the gait cycle and their significance in walking.

The gait cycle is divided into two primary phases: the stance phase, which accounts for about 60% of the cycle where the foot is in contact with the ground, and the swing phase, which makes up the remaining 40% where the foot is in the air. The stance phase includes sub-phases such as initial contact, loading response, mid-stance, terminal stance, and pre-swing, while the swing phase includes initial swing, mid-swing, and terminal swing. Each phase plays a significant role in maintaining balance, stability, and forward propulsion during walking.

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

- ACL tear ✓
- Meniscus tear ✓
- Rotator cuff tear
- MCL sprain ✓

Common injuries of the knee include ligament tears, meniscus tears, and patellar tendinitis. These injuries often result from sports activities or accidents that put stress on the knee joint.

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

- Ilium ✓
- Ischium ✓
- Pubis ✓
- Femur

The pelvic girdles consist of the hip bones, which include the ilium, ischium, and pubis. These bones form the structure that connects the spine to the lower limbs and supports the weight of the upper body.

Which muscles are part of the hamstring group? (Select all that apply)

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

The hamstring group consists of three main muscles located at the back of the thigh: the biceps femoris, semitendinosus, and semimembranosus. These muscles are primarily responsible for knee flexation and hip extension.

What is the primary movement of the quadriceps muscle group?

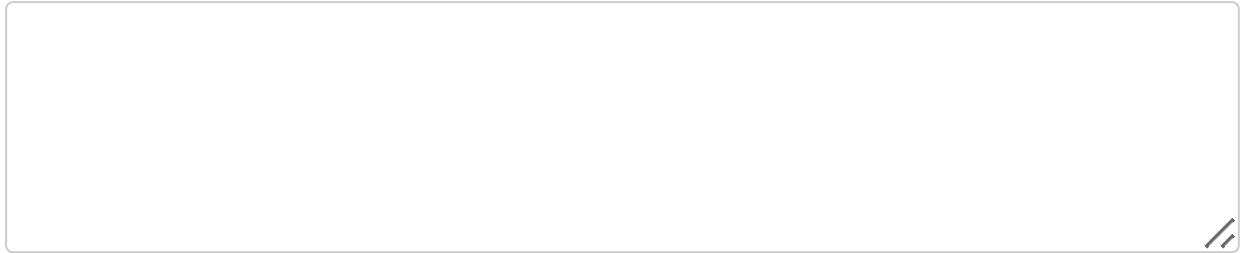
- Knee flexión
- Knee extension ✓**
- Hip abduction
- Hip adduction

The quadriceps muscle group primarily functions to extend the knee joint. This action is crucial for activities such as walking, running, and jumping.

Discuss the anatomical differences between the tibia and fibula and their respective roles in the leg.

The tibia is the larger, stronger bone located medially in the leg, responsible for bearing weight, while the fibula is a slender bone located laterally, providing stability and serving as an attachment for muscles.

Explain the role of the sciatic nerve in lower limb function and what happens when it is damaged.



The sciatic nerve plays a vital role in lower limb function by innervating the muscles of the posterior thigh, leg, and foot, as well as providing sensory information from these areas. When damaged, it can cause sciatica, characterized by pain, numbness, and weakness in the lower limb, affecting mobility and quality of life.

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 supplier of blood to the thigh?

- Popliteal artery
- Femoral artery ✓
- Anterior tibia artery
- Posterior tibia artery

The main supplier of blood to the thigh is the femoral artery, which branches from the external iliac artery and supplies oxygenated blood to the muscles and tissues of the thigh.

What are the potential complications of a femoral fracture, and how might they be addressed clinically?

Potential complications of a femoral fracture include nonunion, malunion, infection, deep vein thrombosis, and damage to surrounding nerves or blood vessels. Clinically, these can be addressed through surgical fixation, monitoring for signs of infection, anticoagulation therapy to prevent thrombosis, and physical therapy for rehabilitation.

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

- Anterior tibialis artery ✓
- Posterior tibialis artery ✓
- Popliteal artery ✓
- Radical artery

The lower leg and foot receive blood supply primarily from the anterior tibialis artery, posterior tibialis artery, and peroneal artery. These arteries branch from the popliteal artery and are essential for delivering oxygenated blood to the lower extremities.

Which of the following is not a bone in the foot?

- Talus
- Calcaneus
- Scapula ✓
- Navicular

The bones in the foot include the tarsals, metatarsals, and phalanges, while structures like ligaments and tendons are not classified as bones. Therefore, any option that refers to a ligament or tendon would be the correct answer to the question.

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

- Flexión ✓
- Extension ✓
- Abduction ✓
- Rotation ✓

The hip joint allows for a variety of movements including flexión, extension, abduction, adduction, internal rotation, and external rotation.

Which nerves innervate the thigh? (Select all that apply)

- Sciatic nerve ✓**
- Femoral nerve ✓**
- Obturator nerve ✓**
- Median nerve

The thigh is primarily innervated by the femoral nerve, obturator nerve, and sciatic nerve. These nerves are responsible for the motor and sensory functions of the thigh muscles and skin.

How do the muscles of the lower limb contribute to maintaining balance and posture?

The muscles of the lower limb, including the quadriceps, hamstrings, calves, and hip muscles, work together to stabilize the body, control movements, and maintain an upright posture, thereby contributing significantly to balance.

Outline the process of blood circulation in the lower limb, starting from the heart.

The process of blood circulation in the lower limb starts with oxygenated blood being pumped from the heart into the aorta, which branches into the common femoral artery, and continues through the popliteal artery, tibialis anterior, and other arteries, reaching the capillaries.

Deoxygenated blood is collected by venules, then veins such as the great saphenous vein, and returns to the heart via the inferior vena cava.