The **gluteus medius** (or**glutæus medius**), one of the three [gluteal muscles](http://en.wikipedia.org/wiki/Gluteal_muscles" \o "Gluteal muscles), is a broad, thick, radiating muscle, situated on the outer surface of the [pelvis](http://en.wikipedia.org/wiki/Pelvis).

The **gluteus maximus** muscle is located in the buttocks and is the strongest muscle in the human body. It is connected to the coccyx, as well as other surrounding bones. The **gluteus maximus** muscle is responsible for movement of the hip and thigh.

**Adductor Magnus** – On the medial side of the thigh, the adductor magnus muscle takes the form of a large triangle. As an adductor, it contracts and pulls the hip towards the body's midline. This action is a fundamental part of walking, sprinting and a host of other bipedal motions. The muscle also extends the hip. Also, the muscle is often considered part of the two muscular groups. While an adductor, the muscle is often considered part of the hamstring as well. The muscle originates in the pelvic region; specifically, it arises from the pubis and the tuberosity of the ischium. Then, the muscle inserts into several parts of the femur bone. Oxygenated blood arrives at the adductor magnus muscle via the obturator artery, which branches from the internal iliac artery. Once blood is deoxygenated, the obturator veins drain into the venal system. For adductive motion, innervations come by way of the inferior branch of the obturator nerve. For hamstring functions, the muscle is served by the sciatic nerve.

The **hamstrings** Three muscles make up the hamstring muscle group--the bicep femoris, semitendinosus and semimembranosus. The hamstrings are at the back of the thigh and cross the hip and knee joints. Since the hamstrings cross two joints, they have two actions, which include knee flexion and hip extension and hyper-extension. According to Ame Ridderikhoff in "Medicine and Science in Sports and Exercise," the hamstrings also have major roles in forward propulsion and transferring power between hip and knee joints

The **gastrocnemius** is involved in standing, walking, running and jumping. Along with the soleus muscle it forms the calf muscle. Its **function** is plantar flexing the foot at the ankle joint and flexing the leg at the knee joint.

**Achilles tendon** vibration in the absence of vision has a major impact on [postural](http://en.wikipedia.org/wiki/Human_position) orientation

The **Achilles tendon** connects the calf muscle to the heel bone. The calf muscle comprises two sides, a lateral gastrocnemius and a medial gastrocnemius. The top of the tendon connects to the bottom of both sides of the calf muscle, running down the back of the lower leg and connecting at the heel bone. At the point of the heel bone, the Achilles tendon inserts on both sides and the rear of the bone.

The tensor fasciae latae is a tensor of the [fascia lata](http://en.wikipedia.org/wiki/Fascia_lata); continuing its action, the oblique direction of its fibers enables it to stabilize the hip in extension (assists [gluteus maximus](http://en.wikipedia.org/wiki/Gluteus_maximus) during hip extension).

is a tiny muscle, inferior to the iliotibial band, which is an elongated strip of fascia. The muscle originates in the ilium and the anterior iliac crest, and goes into the lateral tibia condyle through the iliotibial band. It is innervated by the superior gluteal nerve and performs the functions of hip flexion and abduction. This function helps to maintain one foot ahead of the other to facilitate walking. It also provides lateral stability to the knee. The muscle performs the role of a supplement ligament laterally across the joint, and synergizes with the minimus, medius, and upper maximum fibers. The arterial supply to this muscle is through a branch arising from the profunda femoris, which is known as the femoral circumflex artery. The tensor fasciae latae also helps to stabilize the pelvis on the top of the femur bone in the erect posture. This muscle is used considerably during physical activities such as skiing or horse riding. An imbalance of the pelvic area may occur if this muscle is shortened or strained.

Long and thin, the **Sartorius** muscle stretches the distance of the thigh. It originates at anterior superior iliac spine and travels up to the upper tibia's anteromedial surface. As such, the **Sartorius** is the longest muscle in the human body. The muscle helps flex, adduct, and rotate the hip.

**iliotibial band** (also known as Maissiat's band or IT Band) is a longitudinal fibrous reinforcement of the[fascia lata](http://en.wikipedia.org/wiki/Fascia_lata).

* is classified as a deep fascia of the body, surrounding and connecting the muscles of the body to surrounding tissues. Like all other deep fascia, it is made almost exclusively of dense regular connective tissue. Dense regular connective tissue is a form of fibrous connective tissue that is extremely strong, tough, and avascular. It is made almost exclusively of collagen fibers and fibroblast cells, which produce collagen. Collagen is the strongest protein found in nature and is one of the strongest structures in the entire human body. The collagen fibers are arranged in a regular pattern of straight lines, giving the iliotibial tract incredible strength in the direction in which muscle force is applied to it and considerably less strength in other directions. A small number of elastin protein fibers are also found intermingled with the collagen fibers to permit a degree of elasticity in the tissue.
* Functionally, the iliotibial tract extends the tensor fascia latae muscle into the lower thigh and leg, allowing it to function as an abductor, medial rotator and flexor of the thigh. It also allows the tensor fascia latae and gluteus maximus muscles to support the extension of the knee while standing, walking, running and biking. A common injury to the iliotibial tract is iliotibial band syndrome (ITBS), a condition caused by the friction of the tract moving across the tissues on the lateral side of the thigh. When the knee flexes, the iliotibial band moves posteriorly over the bony ridge of the lateral condyle of the femur. It then passes over the lateral condyle again when it moves anteriorly during knee extension. The repeated flexion and extension involved in long distance running results in the iliotibial band becoming inflamed, irritated and painful. Fortunately, this condition is easily treated with rest, ice, compression and elevation (RICE).

**quadriceps**, **quadriceps extensor**, or **quads**, is a large muscle group that includes the four prevailing muscles on the front of the [thigh](http://en.wikipedia.org/wiki/Thigh). It is the great [extensor](http://en.wikipedia.org/wiki/Extension_(kinesiology)) muscle of the knee, forming a large fleshy mass which covers the front and sides of the [femur](http://en.wikipedia.org/wiki/Femur).

**rectus femoris**

he others are the vastus medialis, the vastus intermedius (deep to the**rectus femoris**), and the vastus lateralis. All four parts of the quadriceps muscle attach to the patella (knee cap) via the quadriceps tendon.

* A muscle in the quadriceps, the rectus femoris muscle is connected to the hip, and helps extend or raise the knee. This muscle also used to contract the thigh. The rectus femoris is the only muscle that can flex the hip. Injury to the rectus femoris muscle may be attributed to muscle overuse in kicking or sprinting. Inflammation of the muscle causes pain in the groin during physical exercises that use this muscle. The patient may experience pain during knee raises when the muscle is ruptured or inflamed. An operation may be necessary if the muscle is torn. Some patients with cerebral palsy may have an irregular stride due to problems related with the rectus femoris. In this case, surgery may be performed to transfer the rectus femoris onto a knee flexor. This surgery improves the patient's knee flexion. Although research has shown that this surgery can improve the knee flexion, other studies have shown that rectus femoris muscle transfer surgery is best performed in combination with other surgeries.

The primary **functional** role of the **patella** is knee extension. The **patella** increases the leverage that the tendon can exert on the femur by increasing the angle at which it acts

* The patella is commonly referred to as the kneecap. It is a small, independent bone that rests between the femur and tibia. The femur, also known as the thigh bone, has a dedicated groove that the kneecap slides along. As a form of protection, both bones also feature cartilage that interacts with the patella. The kneecap plays a vital role in how the knee bends, and as a result, most motions that require moving the leg. If it or the tendon associated with it becomes injured, a person will experience difficulty walking, running, standing, or engaging in athletic activity. If dislocated, the kneecap can no longer slide along the thigh bone's grooves, and this can aggravate and damage cartilage on both the femur and the tibia. Dislocation and other troubles are common among athletes and other people who are extremely physically active. Trouble may be even more pronounced in high impact sports. For example, patella-related injuries are common in sports like football, mixed martial arts, and wrestling.

**Patellar tendon:** A tendon that extends down from the quadriceps muscle in the thigh to incorporate the patella (the [kneecap](http://www.medicinenet.com/script/main/art.asp?articlekey=8868)) and attach it to the tibia (the[shinbone](http://www.medicinenet.com/script/main/art.asp?articlekey=8460)), providing extension at the [knee joint](http://www.medicinenet.com/script/main/art.asp?articlekey=8845). The patellar tendon is also called the [patellar ligament](http://www.medicinenet.com/script/main/art.asp?articlekey=34204) because it connects the patella to the tibia.

The **tibialis** **anterior** muscle is the most medial muscle of the [anterior compartment of the leg](http://en.wikipedia.org/wiki/Anterior_compartment_of_leg). The tibialis anterior is responsible for [dorsiflexing](http://en.wikipedia.org/wiki/Dorsiflexion" \o "Dorsiflexion)and inverting the foot

* is the largest muscle located in the anterior compartment of the human leg. The blood supply to the tibialis anterior muscle comes largely from the anterior tibial artery and its branches. In general, muscles of this compartment dorsiflex the foot at the ankle and extend the toes. The tibialis anterior muscle emerges from the lateral condyle, superior half of the lateral surface of the tibia, and from the interosseous membrane. The muscle inserts into the base of the first metatarsal. It also inserts to the medial and inferior surfaces of the medial cuneiform tarsal. Anterior compartment syndrome occurs from excessive contraction of anterior compartment muscles. Those who suffer this syndrome experience pain that radiates down the ankle and dorsum of the foot, overlying the extensor tendons of these muscles. The tibialis anterior muscle is responsible for the movements of the human leg. It also inverts the foot at the subtalar and midtarsal joints. It holds up the medial longitudinal arch of the foot.

The **functions** of the **tibia** include supporting movement of the extremities, creating insertion points for muscles, producing blood cells in bone

* branches off the sciatic nerve. It provides instructions to the muscles in the lower leg and foot. In addition, the sural nerve branches off it, which provides sensation in the skin of the legs and feet. The tibial nerve generally follows the tibial artery through the body, which supplies blood to the same areas. Damage to the tibial nerve results in a condition known as tibial nerve dysfunction. This is characterized by a loss of feeling or movement in the lower leg. While this may be caused by a variety of conditions, including systemic diseases such as diabetes, it is more commonly experienced by those who have fractured their tibias. There are two major branches of the tibial nerve in the foot: the medial plantar nerve and the lateral plantar nerve. The former supplies instructions to the big toe and the two toes next to it, and the latter the other two toes. The split is seen just after the heel.