

## ***Hip Anatomy***

***anterior superior iliac spine (ASIS)*** = is an important landmark of surface anatomy. It refers to the anterior extremity of the iliac crest of the pelvis, which provides attachment for the inguinal ligament, the sartorius muscle, and the tensor fasciae latae.

***ilium*** = is the uppermost and largest bone of the pelvis, and appears in most vertebrates.

***ischium*** = situated below the ilium and behind the pubis, it is one of these three bones whose fusion creates the coxa. It is divisible into three portions: Body of ischium, Superior ramus of the ischium & Inferior ramus of the ischium.

***Acetabulum*** = is a concave surface of the pelvis. The head of the femur meets with the pelvis at the acetabulum, forming the hip joint.

***femur head*** = is the highest part of femur. The head is globular and forms rather more than a hemisphere. Its surface is smooth, coated with cartilage.

***greater trochanter*** = of the femur is a large, irregular, quadrilateral eminence and a part of the skeletal system. It is directed a little lateralward and backward, and, in the adult, is about 1 cm lower than the head.

***lesser trochanter*** = of the femur is a conical eminence, which varies in size in different subjects.

***piriformis*** = "pear shaped" The piriformis is a flat muscle, pyramidal in shape, lying almost parallel with the posterior margin of the gluteus medius.

***gluteus maximus*** = is the largest and most superficial of the three gluteal muscles. It makes up a large portion of the shape and appearance of the buttocks.

***gluteus medius*** = is a broad, thick, radiating muscle, situated on the outer surface of the pelvis. Its posterior third is covered by the gluteus maximus.

***gluteus minimus*** = the smallest of the three gluteal muscles, is situated immediately beneath the gluteus medius. The gluteus medius and gluteus minimus abduct the thigh, when the limb is extended.

***superior gemellus*** = the smaller of the two, arises from the outer surface of the spine of the ischium, blends with the upper part of the tendon of the Obturator internus.

***obturator internus*** = muscle originates on the medial surface of the obturator membrane, the ischium near the membrane, and the rim of the pubis. and help laterally rotate extended thigh and abduct flexed thigh, as well as to steady the femoral head in the acetabulum.

***obturator externus muscle*** = is a flat, triangular muscle, which covers the outer surface of the anterior wall of the pelvis. It is sometimes considered part of the medial compartment of thigh.

***rectus femoris muscle*** = is one of the four quadriceps muscles, it is the only muscle in the quadriceps group that is involved in hip flexion, since it is the only one that originates in the pelvis and not the femur.

***quadratus femoris*** = Located on the posterior side of the hip joint, it is a strong lateral rotator and adductor of the thigh, but also acts to stabilize the femoral head in the Acetabulum.

***inferior gemellus muscle*** = arises from the upper part of the tuberosity of the ischium, immediately below the groove for the Obturator internus tendon.

***pubofemoral ligament*** = is a ligament on the inferior side of the hip joint. This ligament is attached, above, to the obturator crest and the superior ramus of the pubis; below, it blends with the capsule and with the deep surface of the vertical band of the iliofemoral ligament.

***ischiocapsular ligament*** = consists of a triangular band of strong fibers on the posterior side of the hip joint. Its fibers span from the ischium at a point below and behind the acetabulum to blend with the circular fibers of the joint capsule and attach at the intertrochanteric line of the femur.

***iliofemoral ligament*** = is a ligament of the hip joint which extends from the ilium to the femur in front of the joint. It is also referred to as the Y-ligament. It is also the strongest ligament in the human body and as such is an important constraint to the hip joint.<sup>1</sup>

***vastus lateralis*** = is the largest part of the Quadriceps femoris. It arises by a broad aponeurosis, which is attached to the upper part of the intertrochanteric line, to the anterior and inferior borders of the greater trochanter.

***acetabular labrum*** = is a ring of cartilage that surrounds the acetabulum. Its function is to deepen the acetabulum, making it more difficult for the head of the femur to slip out of place (sublux).

***transverse acetabular ligament*** = is in reality a portion of the acetabular labrum, though differing from it in having no cartilage cells among its fibers, and convert it into a foramen through which the nutrient vessels enter the joint.

***ligament of the head of the femur or ligamentum teres femoris*** = implanted by its apex into the antero-superior part of the fovea capitis femoris; its base is attached by two bands, one into either side of the acetabular notch, and between these bony attachments it blends with the transverse ligament.

***fovea of head of femur*** = which is situated a little below and behind the center of the head, and gives attachment to the ligamentum teres.

***iliotibial tract or iliotibial band*** = (a.k.a. Maissiat's band, IT Band) is a longitudinal fibrous reinforcement of the fascia lata. It is attached to the midpoint of the external lip of the iliac crest and to the lateral condyle of the tibia.

***biceps femoris*** = is a muscle of the posterior thigh. As its name implies, it has two parts, one of which (the long head) forms part of the hamstrings muscle group. The other short head, arises from the lateral lip of the linea aspera, between the adductor magnus and vastus lateralis, extending up almost as high as the insertion of the gluteus maximus.

***Sartorius muscle*** = is a long thin muscle that runs down the length of the thigh. It is the longest muscle in the human body. Its upper portion forms the lateral border of the femoral triangle.

***psoas major*** = is a long fusiform muscle placed on the side of the lumbar region of the vertebral column and brim of the lesser pelvis. As part of the iliopsoas, psoas major contributes to flexion and external rotation in the hip joint. It forms part of a group of muscles called the hip flexors.

***psoas minor*** = is a long, slender skeletal muscle that, when present, is placed in front of the psoas major muscle. It is absent in 40% of individuals. It originates from the vertical fascicles inserted on the last thoracic and first lumbar vertebrae.

***iliacus*** = arises from the iliac fossa on the interior side of the hip bone, and also from the region of the anterior inferior iliac spine (AIIS). It is important for lifting (flexing) the leg forward

***iliopsoas*** = refers to the combination of three muscles psoas major, psoas minor & iliacus.

***greater sciatic notch*** = converted into a foramen by the sacrospinous ligament. It transmits the Piriformis, the superior and inferior gluteal vessels and nerves, the sciatic and posterior femoral cutaneous nerves, the internal pudendal vessels, and nerve.

***lesser sciatic notch*** = it is smooth, coated in the recent state with cartilage, the surface of which presents two or three ridges corresponding to the subdivisions of the tendon of the Obturator internus.

***superior gluteal nerve*** = is a nerve that originates in the pelvis and supplies the gluteus medius, the gluteus minimus, and the tensor fasciae latae muscles.

***lateral cutaneous*** = is a cutaneous nerve that innervates the skin on the lateral part of the thigh. It arises from the dorsal divisions of the second and third lumbar nerves.

***femoral nerve*** = the largest branch of the lumbar plexus, arises from the ventral divisions of the second, third, and fourth lumbar nerves. It descends through the fibers of the Psoas major. It is the longest and widest single nerve in the human body.

***sciatic nerve*** = supplies nearly the whole of the skin of the leg, the muscles of the back of the thigh, and those of the leg and foot. It is derived from spinal nerves L4 through S3.

***lateral femoral circumflex artery*** = arises from the lateral side of the profunda femoris artery, passes horizontally between the divisions of the femoral nerve, and behind the sartorius and rectus femoris, and divides into ascending, transverse, and descending branches.

***femoral artery*** = is a large artery in the muscles of the thigh. It is a continuation of external iliac artery where it enters the femoral triangle at the mid inguinal point behind the inguinal ligament. It leaves femoral triangle through apex beneath the sartorius muscle.