

## Basic Anatomy of the Hip Joint

The hip is a socket joint, giving the hip a large ROM for its many actions: think tree climbing! These actions require a dynamic balance of stability and mobility. The tissues of the hip are: Bones (femur & pelvis) and joints, ligaments and tendons, muscles, nerves blood vessels and bursae.

The joint itself is the meeting of two bones at the femoral head and the pelvic hip socket = acetabulum. The femur has these parts: Head, femoral neck, and large bump = greater trochanter, felt at side of hip. Large muscles attach there. The smaller bump on the inside = lesser trochanter.

In joints, articular cartilage covers the ends of bones. (when bones move together in a joint they "articulate"). In the hip, it covers the femur head and the acetabulum. In the hip, it is @  $\frac{1}{4}$ " thick, it is: shiny, rubbery, & slippery to allow joint surfaces to slide against one other. It functions to absorb shock and provides smooth surface to make movement easy. Cartilage here is thicker on top & back- where most force is.

Ligaments = connect bones to bones. Several at hip = they hold the femoral head in place in the socket.

Tendons = soft tissue structures that connect muscles to bones. A long tendon band runs from femur to the knee on the outside of the femur. This iliotibial band provides a connection point for several of the large hip muscles. A tight IT band can cause hip and knee problems.

Labrum = a special ligament inside the hip joint that attached almost completely around the edge of the acetabulum. The shape and the way it is attached creates a deeper cup for the socket. This rim of cartilage can be injured can cause pain and clicking in hip joint.

Muscles: The hip is surrounded by large thick muscles.

Buttock on back of hip. Glutes! Gluteus Minimus, Medius, Maximus. They extend thigh, abduct leg, and keep pelvis level during weight shift during walking, etc.

Inner Thigh Muscles = Adductors, pull the thigh inward.

Hip flexors in front of the hip joint= iliopsoas and rectus femoris (one of quadriceps group), others too. Iliopsoas = deep and goes from low back to inner lesser trochanter of femur.

Rectus femoris is a quadriceps muscle.

Also, the Sartorius muscle. This is a thin strap-like muscle going from outside pelvis to the inside of tibia below the knee joint.

External Rotators of the Hip = Several small muscles travel from inside the pelvis across the back of the hip joints and attach to the back of the upper femur. They stabilize the hip joint and extend the hip and rotate the leg outward.

Hamstrings = run down the back of the thigh from bottom of pelvis. They extend the hip.

Main nerves are the femoral nerve in front and sciatic nerve is the back of the hip. (also, a small nerve: obturator nerve to inside of hip.) Along with nerves are blood vessels.

Bursae = where friction occurs between muscles, tendons and bones. = Thin sac of tissue to lubricate an area and reduce friction. 3 at Hip: Greater Trochanteric Bursa, Iliopsoas Bursa, Ischial Bursa. If irritated/inflamed = bursitis.