Muscles & Joint Actions: Hip
Video Transcript

Welcome to the AFLCA Exercise Theory video series supplementing Chapter 7, Basics of Anatomy. In this video, we're going to cover the muscles of the hip and their joint actions. Every muscle and joint action that we discuss is in relation to the concentric phase, the up phase of an exercise against gravity.

Let's start with the joint action **hip flexion.**

From anatomical position, the leg raises in front of the body along a sagittal plane. The agonist (or prime mover) of hip flexion is the iliopsoas. The iliopsoas is a composite muscle of the psoas major and iliacus muscles. It attaches to the lower vertebrae, pelvis, and femur, crossing the front of the hip joint. The muscle generates force and pulls on the bones. Synergists, or assisting muscles, are the rectus femoris and sartorius.

Now, here's **hip extension**.

The leg moves back into anatomical position along a sagittal plane. Technically, if the leg continues to extend past anatomical, this is hyperextension. However, it's not common practice to actually call this hip hyperextension. Hip extension is fine. The agonist or prime mover of hip extension is the gluteus maximus. The gluteus maximus attaches to the pelvis and femur, crossing over the back of the hip joint. The muscle generates force and pulls on the bones. Synergists, or assisting muscles, are the hamstrings. The three hamstring muscles are biceps femoris, semitendinosus, and semimembranosus.

That's hip flexion and extension. Let's move on.

Let's look at **hip abduction**.

Remember the midline, the imaginary line that divides the body into right and left sides? From anatomical position, the leg moves away from the midline to the side, along a frontal plane. The agonist (or prime mover) of hip abduction is the gluteus medius. The gluteus medius attaches to the pelvis and femur, crossing over the outside of the hip joint. The muscle generates force and pulls on the bones. The synergists (or assisting muscles) are the gluteus minimus (which is deep to the gluteus medius) and tensor fascia latae.

Now, **hip adduction** is the opposite.

From the side, the leg moves in toward the midline along a frontal plane. The agonist or prime mover of hip adduction is the adductor group. The five adductor muscles are pectineus, gracilis, adductor longus, adductor magnus, and adductor brevis. The adductor muscles attach to the

pelvis and femur, crossing over the inside of the hip joint. The muscle generates force and pulls on the bones.

That's hip abduction and adduction. Let's move on. We've got one more joint action pair to cover. Lateral rotation and medial rotation.

Hip lateral rotation.

The leg rotates away from the midline along a transverse plane. Agonist is the gluteus maximus.

Finally, **hip medial rotation.**

The leg rotates in toward the midline along a transverse plane. Agonist is the gluteus medius.

Those are the muscles and joint actions of the hip joint. Because it's a ball-and-socket joint, it does a lot of different things. Think about them in the context of muscles crossing the joint and pulling on the bones. Then, think about them in the context of different exercises.

Thanks for watching.