Joint Anatomy and Actions

A Short Lesson in the Kinesiology of Exercise

KinX Learning
Digital Products in the Kinesiology of Exercise

The Hip Joint and Pelvic Girdle

Each half (side) of the pelvic girdle consists of three bones: the ilium, which is located at the top and sides of the hip; the pubis, which is below and in front; and the ischium, which is below and to the rear.

The pelvic basin is closed on the back side by the sacrum (the lower end of the spine), which is wedged between the two ilium (hip) bones and held together by the strongest ligaments in the body. This is commonly known as the sacroiliac joint, which is often involved in back pain.

The hip joint is formed by the head of the femur (thigh bone) articulating in the acetabulum, a deep socket formed on the outer surface of the pelvis where the ilium, pubis, and ischium bones join together. The hip joint is a ball-and-socket joint, which means that the leg can rotate in all directions inside the socket. Strong ligaments surround and hold the joint together and limit the amount of movement that is possible in the joint, usually to 30-45 degrees from the anatomical position (when the legs and body form a straight line).

In this arrangement the thigh can move in only a limited range of motion when the pelvic girdle is held stationary. When the pelvis also rotates, the leg can be raised through a greater range of motion. In most movements of the leg there is a combination of both thigh and pelvic movement. When the leg is stationary, movement of the pelvis increases the range of motion of the trunk in all directions. Thus, the pelvis plays an important role in many movements.

Basic Movements in the Hip Joint and Pelvic Girdle

Extension Moving the leg down and back to the anatomical straight-line position from a hip-flexed position.

Flexion Moving the thigh forward at the hip.

Abduction Moving one leg from the mid-line of the body out towards the side of the body.

Adduction Moving one leg toward the other leg (toward the mid-line of the body) from an out-to-the-sides position.

Lateral Rotation Rotation of the femur outward (away from the other leg).

Medial Rotation Rotation of the femur inward (toward the other leg).