Pelvic Girdle

- The pelvis is the connecting link between the trunk and the lower extremities
- There are halves to the pelvis
Pelvic Girdle

There are three separate bones that make up the pelvis: the Ilium, Ischium, and Pubis – they become fused into a single bone during puberty.
Pelvic Girdle

- The pelvis is attached to the sacrum at the sacroiliac articulation
  - No movement can be voluntarily effected at this joint
  - Held in place by the anterior, posterior, and interosseous sacroiliac ligaments.
  - Reinforced by the iliolumbar, sacrotuberous, and sacrospinous ligaments.
- The sacrum might as well be part of the pelvic girdle – but is NOT
Movements of the Pelvis

Changes in position of the pelvis are brought about by the motions of the lumbar spine and the hip joints.

- **Forward Tilt** (increased inclination)
- **Backward Tilt** (decreased inclination)
- **Lateral Tilt**
- **Rotation** (lateral twist)
Pelvis: Trunk and Lower Extremities

- When the body is in its erect standing position, the pelvis receives the weight of the head, trunk, and upper extremities, divides it equally, and transmits it to the two lower extremities.
Movements of the Pelvis:
Secondary to those of the lower extremities

1. Movements of both limbs acting in unison – swinging forward or backward in suspension (Pelvis tilts forward or backward)
Movements of the Pelvis:
Secondary to those of the lower extremities

2. Movements of both limbs acting in opposition – walking, running, or flutter kick (swimming) – (Pelvis rotates in horizontal plane)
Movements of the Pelvis:
Secondary to those of the lower extremities

3. Movements of one limb, as when kicking or when raising one leg to the side (pelvis tilts laterally)
The Hip: Ball and Socket

- Structure – the spherical head of the femur with the deep cup-shaped acetabulum
  - The acetabular labrum is thicker above and behind, it serves to cushion the top and back of the acetabulum against the impact of the femoral head in forceful movements
  - The femoral head is covered with cartilage, except for a small pit near the center called the fovea capitis
Ligaments of the Hip Joint

**Inner Ligaments**

1. Transverse acetabular ligament – strong flat band of fibers

2. Teres femoris – ties the head of the femur to the lower part of the acetabulum (reinforcement from within)
Ligaments of the Hip Joint

Hip dislocated to show ligamentum teres

Ligamentum Teres
Ligaments of the Hip Joint

Outer Ligament

1. Iliofemoral ligament
2. Pubofemoral ligament
3. Ishiofemoral ligament
Ligaments of the Hip Joint
Muscles of the Hip

1. Anterior – Iliopsoas, Pectineus, Rectus femoris, Sartorius, Tensor fascia latae

2. Posterior – Biceps femoris, Semimembranosus, Semitendinosus, Gluteus maximus, and six deep outward rotators

3. Medial – Adductor brevis, Adductor longus, Adductor magnus, and Gracilis

4. Lateral – Gluteus medius and Gluteus minimus
Injuries of the Thigh, Hip Joint, and Pelvis

- Contusions – often result from a direct blow to an unprotected or inadequately protected body part.
  - Contusion to the iliac crest – called a hip pointer.
  - A contusion to a muscle that is not treated properly, or if the injury occurs repeatedly, may result in myositis ossificans.
Injuries of the Thigh, Hip Joint, and Pelvis

- Myositis Ossificans – A condition which calcification develops following repeated traumas or serious contusions to the muscle. Likely to occur when the symptoms of muscle injury are so mild that the players insists on continuing to play.
Injuries of the Thigh, Hip Joint, and Pelvis

- Strains of the Hamstring Muscle Group
  - Tend to happen while running more than any other activity, especially when a muscular imbalance occurs through fatigue or another condition when there is a sudden change in direction or speed. Frequently the distal attachment of the biceps femoris and the proximal attachments of the semitendinosus and the biceps femoris.
Injuries of the Thigh, Hip Joint, and Pelvis

- Hip conditions
  - Old age brings on osteoporosis – leads to hip fractures