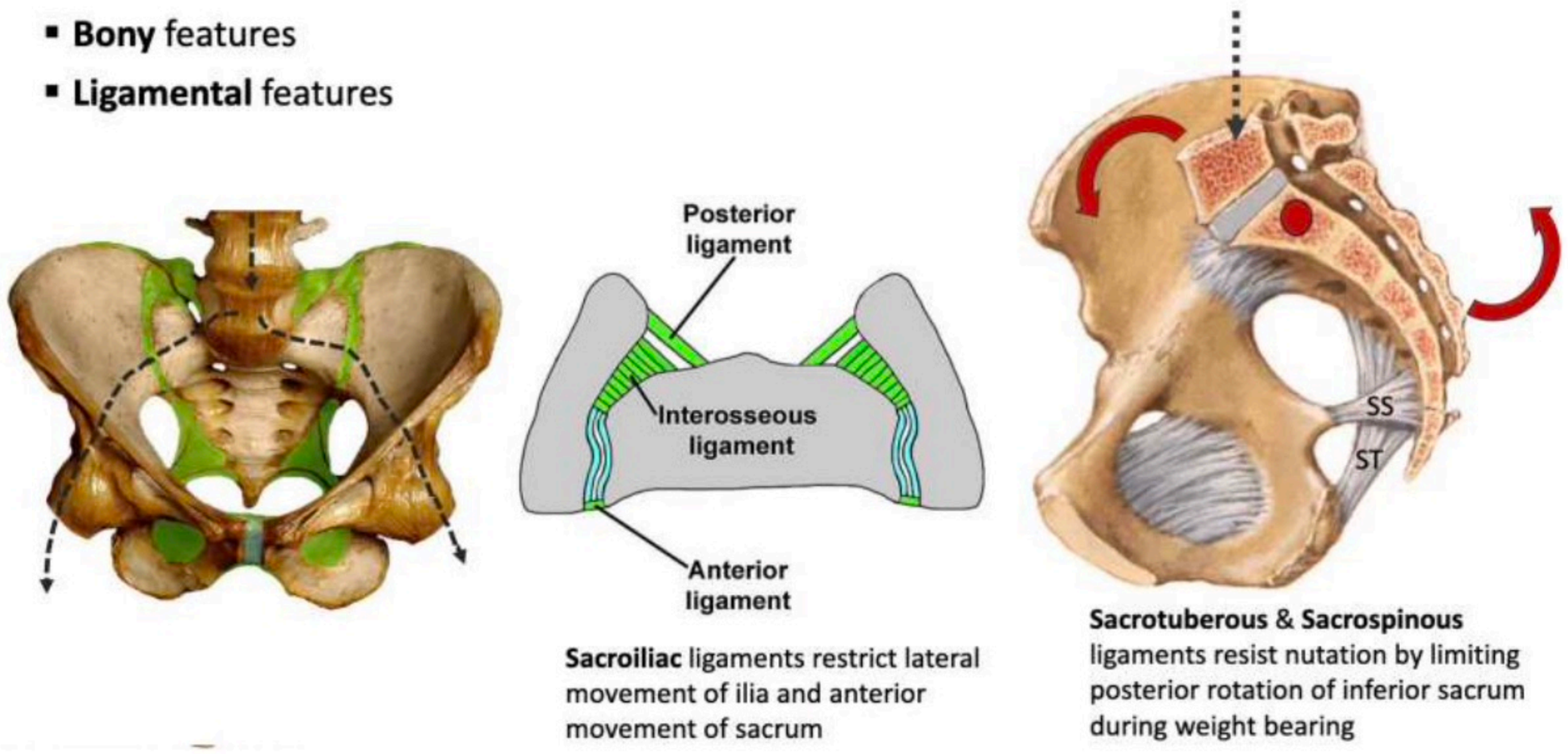
Pelvic Bone Structure

The pelvic bones are shaped to create a stable joint with the sacrum. The sacrum resembles an upside-down triangle, wedging into the pelvic bones. This design helps to lock the sacrum in place, but without ligaments, the weight of the upper body would push the pelvic bones apart, leading to instability.

Types of Ligaments

- **Posterior Sacroiliac Ligaments:** Located at the back, connecting the sacrum to the ilium.
- **Anterior Sacroiliac Ligaments:** Located at the front, also connecting the sacrum to the ilium.
- **Interosseous Ligaments:** Found between the sacrum and ilium, providing additional stability.



Additional Ligaments for Movement

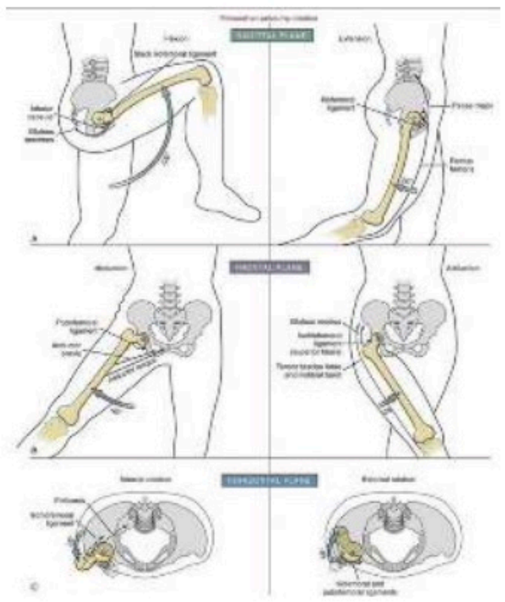
To facilitate mutation and counter mutation, the sacrospinous and sacrotuberous ligaments allow for limited forward movement of the sacrum while preventing excessive tilting. These ligaments become taut as the sacrum tilts, helping to resist further nutation.

Overview of Hip Joint

The hip joint is a ball and socket joint that allows for a variety of movements. It primarily facilitates flexion and extension, enabling the leg to move forwards and backwards. The range of movement is greater in the forward direction compared to the backward direction.

Types of Movements

- **Flexion and Extension:** Movement of the leg forwards (120 degrees) and backwards (20 degrees).
- **Abduction and Adduction:** The leg can swing outwards (45 degrees) and inwards (45 degrees).
- **Rotation:** The hip can rotate laterally (60 degrees) and internally (30 degrees). Testing for rotation involves bending the knee and applying pressure to the thigh.
- **Circumduction:** Skilled individuals can perform circumduction, which involves swinging the leg in circular motions.



Testing Hip Rotation

To assess lateral rotation, place a hand on the outside of the patient's thigh and ask them to push against it (knee flexed). A strong resistance indicates healthy lateral rotators, while weak resistance suggests potential issues. For internal rotation, place a hand on the inner thigh and have the patient push against it to test strength.

Hip Joint Structure

The femur consists of a spherical head covered in hyaline cartilage, except for a small pit called the fovea, which is where a blood vessel used to enter. In adults, this blood vessel is replaced by a ligament. The femur's head is surrounded by hyaline cartilage, except where the ligament attaches.