



# motion palpation assessment of the sacroiliac joint

The sacroiliac joint (SIJ), one of the most controversial joints in the human body, is challenging to assess and treat because its motion is subtle. For this reason, a clear understanding of SIJ structure and function, and experience working with clients with SIJ conditions, are necessary for competent assessment and treatment to be performed.



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### THE SACROILIAC JOINT (SIJ)

The SIJs are paired left and right, located between the sacrum and the iliac portion of the pelvic bone on each side of the body (Figure 1). The SIJ is an unusual joint in that early in life, it is synovial, but as a person ages, because of the physical stresses placed upon it, it changes to become a fibrous joint. These physical stresses come from both directions, above and below, because the SIJ is the transitional joint that bridges the axial body above with the lower extremity appendicular body below. Whenever we are standing or sitting, weight bearing compression forces enter the joint from above; and every time our foot strikes the ground, shock waves travel up through the lower extremity and pass through the SIJ from below (Figure 2).

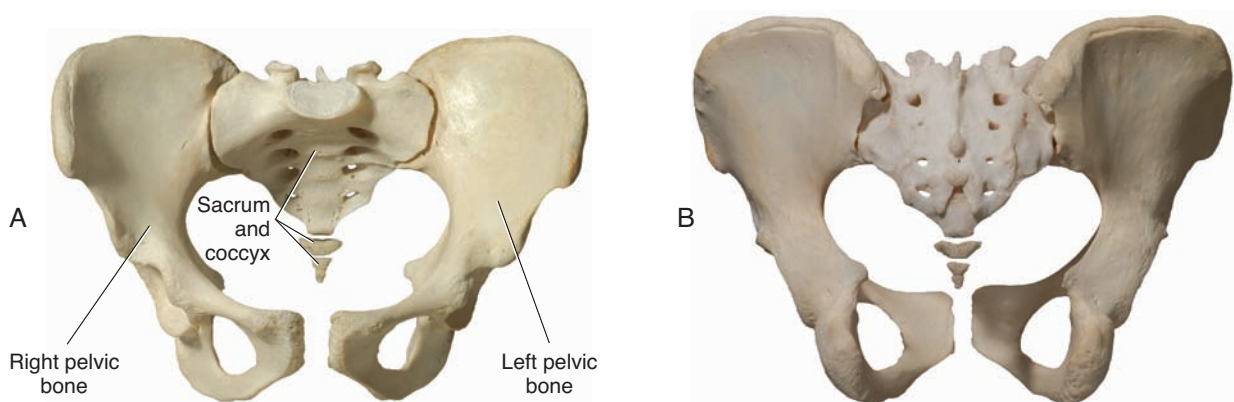
The SIJ is also unusual in that there are no muscles that attach directly from the sacrum to the ilium, crossing and providing stability (as well as motion) to only the SIJ. The piriformis does cross the joint, but it continues on to attach to the femur, also crossing the hip joint. Other muscles from the lumbar region such as the erector spinae and latissimus dorsi have fibrous attachments that span over the sacrum and iliac crest, but these fibers do not run from the sacrum to the ilium. As a result, there is little muscular stability provided to the SIJ.

To provide stability, the SIJ is heavily invested with fibrous fascial ligamentous tissue (Figure 3). Because the majority of its stability is provided by ligaments, the SIJ is described as a ligamentous joint. A consequence

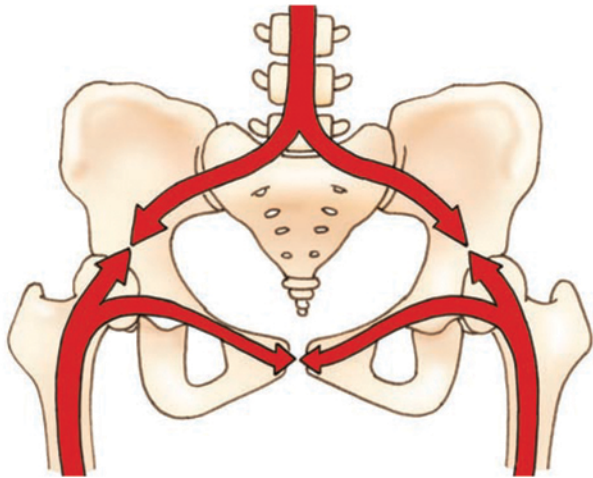
of this structure is that when the SIJ is injured, the injury is often a sprain (compared to a muscular strain) in which the ligaments are overstretched or torn. This has implications for healing because ligaments do not have a good blood supply; therefore sprains generally do not heal well and therefore tend to become chronic in nature, often creating an unstable hypermobile SIJ. This tendency toward injury and hypermobility can be countered by the tendency to accumulate fibrous tissue over time within the joint, which tends to decrease mobility and create a hypomobility. One of the major keys to SIJ assessment is to assess its motion\*. This is accomplished via the assessment technique known as motion palpation assessment.

### SIJ MOTION

Before discussing the technique of SIJ motion palpation, it is helpful to examine SIJ motion. The pelvis is often looked at as moving as a fixed unit relative to either the thighs inferiorly or the spine superiorly. However, given that there are two SIJs and a pubic symphysis joint located between the bones of the pelvis, motion within the pelvis is also possible. The types of motion that occur at the SIJ are primarily sagittal plane motions and described as nutation and counternutation (Figure 4). With nutation, the base (superior end) of the sacrum moves anteriorly and inferiorly; relatively, the pelvic bone tilts posteriorly. With counternutation, the base (superior end) of the sacrum moves posteriorly and superiorly; relatively, the pelvic bone tilts anteriorly.

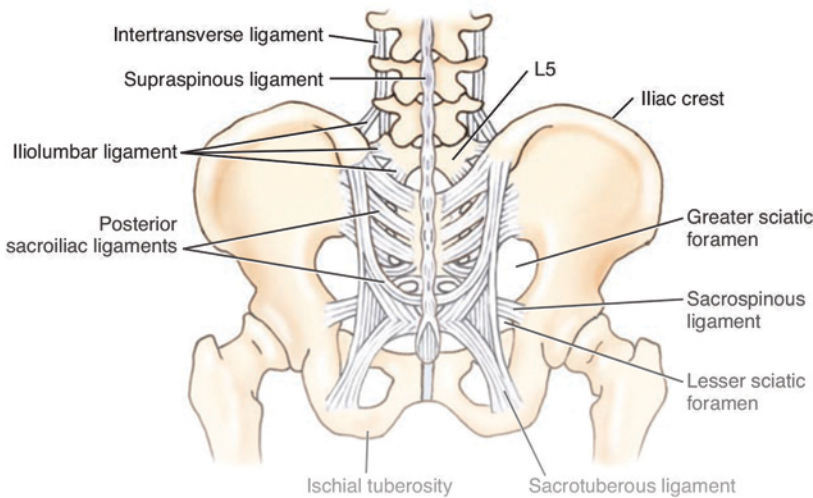


**FIGURE 1** The sacroiliac joints are located between the sacrum and iliac portion of the pelvic bones. **A**, Anterior view. **B**, Posterior view.

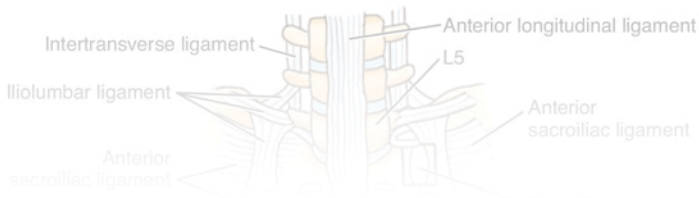


**FIGURE 2 (Left)**  
Physical stress enters the sacroiliac joints from above and below.

**FIGURE 3 (Below)**  
The sacroiliac joints are heavily ligamentous. A, Posterior view. B, Anterior view.



A



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