



orthopedic assessment of the sacroiliac joint

Low back pain is probably one of the most common problems you see as a massage therapist. Before an effective and appropriate plan of care can be determined, it's necessary to assess the cause of the client's pain.

One of the most common causes of low back pain—perhaps the most common cause—is irritation of and/or injury to the sacroiliac joint (SIJ). The SIJ is one of the most important joints in the human body, but also one of the most controversial and least understood, with authorities often disagreeing on its function and role in low back pain.

THE SIJ

There are two SIJs, paired left and right. As the name implies, each SIJ is located between the sacrum and the iliac portion of the pelvic bone on that side of the body (**Figure 1**). Therefore, the SIJs are located at the heart of the core of the body, also known as the powerhouse.

The SIJs are unusual in that they begin as synovial joints, but gradually transition into fibrous joints with the physical stresses placed upon them as we age, causing the deposit of fibrous fascial tissue within the joint cavity. These physical forces come from both above and below (**Figure 2**). From above, all of the weight of the trunk, neck, head and upper extremi-



For more information on the powerhouse, see the “Body Mechanics” column “How Pilates can Benefit Your Body Mechanics” in the Summer 2007 issue of *mtj*.



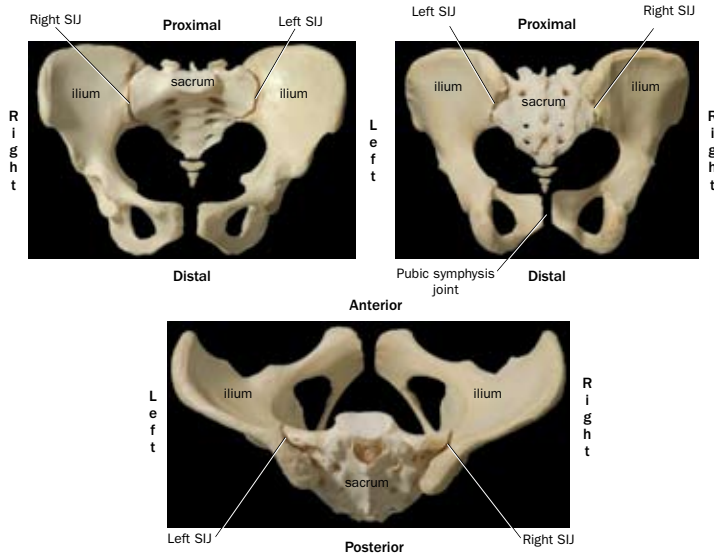


FIGURE 1. THERE ARE TWO SACROILIAC JOINTS (SIJS). EACH ONE IS LOCATED BETWEEN THE SACRUM AND THE ILIUM OF THE PELVIC BONE ON THAT SIDE OF THE BODY.

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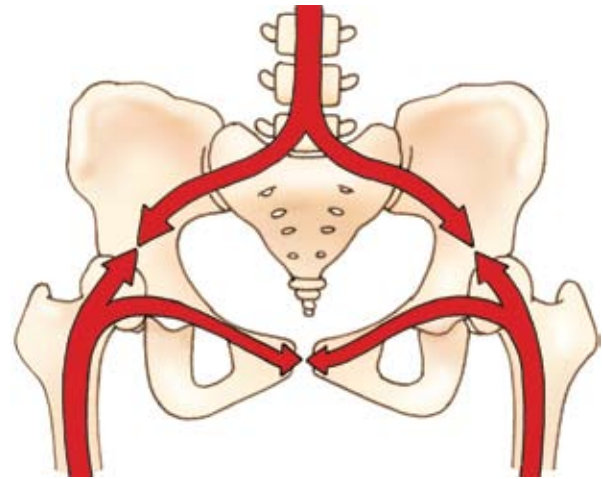


FIGURE 2. THE SACROILIAC JOINTS ARE SUBJECTED TO PHYSICAL STRESS FORCES FROM ABOVE AND BELOW.

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ties is transferred through the spine and borne through the SIJs. From below, each footfall when we walk, run or jump is transferred into the SIJ through the lower extremity on that side of the body.

Thus SIJ function is intimately involved in weight bearing and spinal function within the axial body, as well as motion and propulsion of the body by the lower extremities within the appendicular body. Located within the pelvic girdle, the SIJs are the key transition joints between the axial body/spine and the lower extremities. With these multiple and varied stresses placed upon the SIJs, it's no wonder they are so often overly stressed and injured.

STABILIZATION

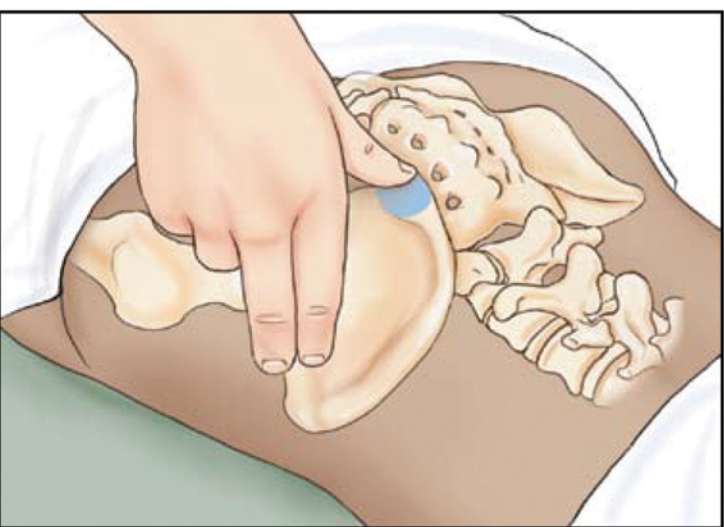
Another peculiarity of the SIJ is its lack of stabilizing musculature. As

a rule, one of the major stabilizing factors of a joint is the musculature that crosses it, attaching from one bone of the joint to the other. However, in the case of the SIJ, no musculature attaches directly from the sacrum to the ilium; the piriformis and gluteus maximus do attach from the sacrum to the femur, thereby crossing the SIJ, but their stabilization influence is lessened by their additional role at the hip joint. To compensate, the SIJ is copiously endowed with ligaments, both anteriorly and posteriorly.

INJURY

Because of this lack of stabilizing musculature and its reliance on fibrous ligamentous tissue, injury to the SIJ often causes a stretching and/or tearing of ligament—in other words, a sprain. Unfortunately, a sprain usually creates a chronic, hypermobile joint dysfunction that is unstable and can be difficult to resolve.

If the physical stress to the joint is less in degree and does not cause an actual stretching or tearing of the ligamenture, the joint may simply be irritated and inflamed. If the musculature linked to the SIJ tightens and/or the fascial tension of its ligaments increases, then a hypomobile joint dysfunction can occur. Accurate assessment of SIJ pain and dysfunction requires a familiarity with its typical clinical presentation pattern of signs and symptoms, as well as knowledge of hands-on orthopedic assessment tests.



Superolateral view

FIGURE 3. SACROILIAC JOINT PAIN IS PALPATED IMMEDIATELY MEDIAL TO THE POSTERIOR SUPERIOR ILIAC SPINE (PSIS). PALPATION OF THE PSIS TO LOCATE THE SACROILIAC JOINT IS DEMONSTRATED.

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CLINICAL PRESENTATION

SIJ pain tends to be dull in quality, but can be moderate or severe in degree. It's usually located directly over the joint and is often increased with digital compression, especially over the upper aspect of the joint. To palpate the SIJ, first find the posterior superior iliac spine (PSIS), and then drop off it medially (Figure 3). Referral of pain into the lower extremity, especially along the distribution pathway of the sciatic nerve, is also common.

Sitting places greater weight bearing stress through the low back than does lying or standing. Therefore, pain with prolonged sitting is usually the hallmark feature of SIJ dysfunction. Time spent sitting before the onset of pain varies on severity of the condition; 20 minutes is typical, but it may be longer or shorter. Sitting and driving a car is often especially painful. Pain is also common with prolonged standing. Because forces are transmitted upward from the lower extremities, pain usually occurs on the side of weight bearing when walking or running.

sprained and unstable hypermobile SIJ into a hypomobile joint that exhibits decreased motion. If one SIJ is hypomobile due to muscle splinting, then the other SIJ is often forced to compensate by moving more.

This excess motion can result in hypermobility on that side, which can then cause overuse, irritation and pain. For this reason, it is common for SIJ pain and dysfunction to shift from hypermobility to hypomobility, and to switch from SIJ pain experienced on one side of the body to pain experienced on the other side; or for the pain to be present across both SIJs.

ORTHOPEDIC ASSESSMENT

Ranges of motion of the low back, especially into flexion or same-side lateral flexion from a standing position, often elicit SIJ pain. However, for proper assessment of a SIJ irritation or injury, special orthopedic assessment tests should also be performed. Three useful orthopedic assessment tests are straight leg raise (SLR), Nachlas and Yeoman's. In all three of these assessment procedures, the mechanism is similar: a movement force is placed into one or both SIJs, and if the joint is irritated/injured, localized pain may occur, indicating dysfunction.

Straight Leg Raise (SLR) test. SLR test is performed by raising the supine client's thigh into flexion at the hip joint with the knee joint fully extended (hence "straight leg"). This may be done actively by the

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