An Osteopathic Approach to Diagnosis and Management of Sacroiliac Joint Dysfunction

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Diagnosis and management of sacroiliac (SI) joint dysfunction can be performed in a variety of ways and should be considered in patients who present with various symptoms, including low back pain, pelvic pain, and visceral complaints from the abdominopelvic region.

The SI joints are 2 joints within the pelvic girdle; they provide stable support to the upper body and allow for a transfer of forces from the lower extremities during gait.[2] This combination of synovial and syndesmotic joints is composed of the articulating surfaces of the S1, S2, and S3 segments and the ilium, whose surfaces are covered in fibrocartilage and hyaline cartilage, respectively.[1,2] The SI joint develops from a flat, round joint, which roughens with age to an inverted, backward-facing "L" shape, with a short superior arm and a longer inferior arm.[2] The capsule of the joints comprises the anterior, posterior, and interosseous SI ligaments and is supported by numerous others, including the sacrospinous and sacrotuberous ligaments.[1]

Innervation to this joint is thought to be primarily from the dorsal rami of L5-S2, while the joint itself is found to contain nociceptors.[2] Pain from the SI joint may refer to regions including the gluteal region and down the back of the leg to the foot.[4]

Motion of this joint has proven variable in the literature but may suggest ±2° of motion about a transverse axis at S2.[2,4] The SI joints are stabilized by form and force closure.[3-4] Form closure describes the shape of the joint and the anatomical features that assist in the joint remaining together, such as fitted articular surfaces.[2-4] Force closure describes forces generated by muscles and transmitted through ligaments and fascia as a way of compressing or closing the joint.[3,4] An increase or decrease in the compliance of the pelvic girdle may make load transfer more difficult and require higher energy expenditure as well as alter kinetic forces.[4]

The SI joints are part of the pelvis, which also delineates the boundary of the abdominopelvic cavity via the pelvic floor muscles and serves a role in developing the pressure gradient that assists the movement of blood and lymph from the lower extremities and torso back to the heart.[7,8] Freedom of motion of the sacrum should be considered in balancing autonomic tone as parasympathetic activities from S2-4 ventral rami supply the lower abdominopelvic cavity.[5] Somatic dysfunction of the pelvis and SI joints may then cause dysfunction in autonomic balance, biomechanical motion, and circulatory ability.

The anatomy, physiologic process, and biomechanics of the pelvis are complex, as evidenced by the multiple diagnosis and treatment approaches that are used by osteopathic physicians. Each approach addresses different aspects of this region; no single approach covers all the possible somatic dysfunctions. The technique presented in the **video** is directed at management of somatic dysfunction in the SI joint as part of an evaluation of the entire pelvic girdle. Pelvic girdle treatment may have effects on the mechanics of the spine, diaphragm, pelvic diaphragm, lower extremities, and craniosacral mechanism.[5] Improved pelvic girdle mechanics may improve gait mechanics, address viscerosomatic reflexes, and decrease pain.

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