

Sacroiliac Joint Posterior Ligaments Biomechanics and Clinical Implication for the Clinician

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Abstract

The sacroiliac joint (SIJ) is organized by articular surfaces between the sacral and iliac bones. The SIJ includes different functions, among which to connect the spine to the pelvic bone, which permits for better transmission of vertical forces from the spine to the pelvis and lower extremities. The first purpose of the SIJ is to provide stability, which is promoted partly by the muscles attached to the SIJ and is provided by multiple mechanisms, embracing the complex of ligaments fixed to the SIJ. The range of motion of SIJ is estimated around 2 to 4 degrees. Additionally, there are 35 muscles attaching to the sacrum or innominate, which work in a combined effort with the fascial and ligaments, thus ensuring movement and simultaneously stability of the trunk and lower extremities.

The SIJ also is an essential generator for pelvic and low back pain (LBP) in the differential diagnosis of referred map pain in the lower extremities and should be considered in the differential diagnosis of pelvic and LBP. There is an underestimation of the prevalence of SIJ pain because there is a lack of research done on the SIJ posterior ligaments. In the United States and the rest of the world, there is an augmented prevalence of LBP and its related costs. In Europe, the increase of adult patients with LBP is associated with sedentary activities as working with a computer behind a desk. Marcucci, Alexander, and Matthews observed in a pilot study composed of a sample with 20 patients having LBP or pelvic, and or lower extremities pain, after applying two different osteopathic release techniques on the posterior SIJ ligaments, a reduction of the pain in 18 patients, from which 12 had no pain anymore, 6 had a reduction of pain intensity. In two cases, the techniques did not provide any effect on the pain intensity. There is a necessity to assess the potential function of the SIJ posterior ligaments in producing LBP and referred to map pain in the lower extremities.

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Biography

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