

SIJ LETTER TO EDITOR

Reply to: Changing the Narrative in Diagnosis and Management of Pain in the Sacroiliac Joint Area.

Palsson TS, Gibson W, Darlow B, et al. Changing the Narrative in Diagnosis and Management of Pain in the Sacroiliac Joint Area. *Phys Ther.* 2019. 99(11):1511-1519. doi: 10.1093/ptj/pzz108.

Dear Editor,

This is in response to Changing the Narrative in Diagnosis and Management of Pain in the Sacroiliac Joint Area.¹ The authors present very relevant rationale for improving the dialogue and treatment approach for patients presenting with sacroiliac joint (SIJ) area pain (SIJP). The general public is becoming more aware of the diagnosis of SIJP also described as SIJ “dysfunction” as noted by various social media support groups and marketing directed to the patient and medical community funded by SIJ fusion hardware companies. A year-by-year www.PubMed.gov search on sacroiliac pain demonstrates a continuous increase in published papers over the last twenty years. As these authors note in the patient population there is a belief of fragility in this population and a commonly held belief of pelvic asymmetry being reflective of hypermobility or instability, or malposition within the SIJ, and of SIJP being related to this. The patient population also has a strongly held belief in the traditional biomechanical, evaluation and treatment model which we inherited from the osteopathic model described by Mitchell in 1958² and further developed within the Muscle Energy Technique (MET) which emerged in 1979³. These models should be critiqued and updated.

The medical community is becoming more aware of SIJP due to tremendous marketing efforts and research publication funded by minimally invasive surgery (MIS) SIJ fusion device manufacturing companies. In April 2008 SI-Bone.com company was formed and was the first to develop and market a MIS SIJ fusion device named the iFuse Implant System®. Now there are eleven different types of SIJ MIS fusion hardware devices marketed by: SI-BONE, Medtronic, Zimmer Biomet, Orthofix, Zyga Technology, Xtant Medical, Globus Medical, Life Spine, CoreLink, VGI Medical, SIGNUS Medizintechnik.³

More than 40,000 SIJ fusions have been performed using the iFuse Implant System® since 2009.⁴ There is very little supportive literature on the use of physical therapy for patients with SIJP. A www.PubMed.gov/ search for January 01, 2019 through March 31, 2019 using the term “sacroiliac pain” revealed 13 related to physical therapy amongst the total of 195 articles. Rehabilitation professionals have a lot of work to do to educate the community regarding conservative treatment and to validate conservative approaches for this diagnosis. This is especially true as one study demonstrates that “for patients with chronic sacroiliac joint pain due to joint degeneration or disruption, minimally invasive sacroiliac joint arthrodesis with triangular titanium implants was safe and more effective throughout 2 years in improving pain, disability, and quality of life compared with conservative management.”⁵

The authors mention the pain provocation tests and the use of injection which deserves further comment. A cluster of positive Pain Provocation Tests (PPT) was shown to correlate with pain relief achieved with an intra-articular SIJ injection.⁶ The injection literature does not mention the possibility of reducing referred pain, such that there is a possibility that although pain is reduced it might not precisely isolate the exact pain generator, typically reported to be within the SIJ. A large percentage of patients respond better to extra-articular injection^{7,8} or to combined intraarticular and extraarticular injection.⁹ The PPT have not been evaluated with *extraarticular* injection. With respect to force application, the PPT have not been evaluated to determine whether or not they actually isolate the SIJ or the SIJ ligaments, or other proximal structure such as the hip and lumbar spine. The intra-rater and inter-rater reliability of these tests is unknown. A very recent study¹⁰ questions the validity of the SIJ pain provocation tests: “In this cohort, patient physical exam maneuvers to identify intra-articular SIJ pain did not demonstrate diagnostic value when compared with the reference standard of an intra-articular anesthetic block.” (Schneider BJ, Ehsanian R, Rosati R et al. 2020:255.) Additional clinical and basic science research is needed.

The FABER test is one of the SIJ PPT, which merits cautious interpretation, as it is also used to evaluate symptomatic hip pathology.¹¹ A significant number of patients meeting strict diagnostic criteria for SI joint pain but failed response to SIJ treatment had radiographic evidence of femoroacetabular impingement (FAI) and hip arthrosis.¹² This further challenges the utility of SIJ PPT, and traditional screening methods. The hip, the SIJ and the lumbar spine have a physical proximity and share similar neural pathways. It is unknown whether-or-not, the Thigh Thrust Test performed in 90-degrees flexion¹³ specifically isolates movement in the SIJ or creates ligamentous tensioning or imparts force primarily to the hip, or to the lumbar spine or a combination thereof. This test can be performed in a modified manner while palpating the dorsal SIJ ligaments and appreciating increased tension by adding additional flexion and adduction. Theoretically this enhances isolation to the dorsal SIJ ligaments. This unknown has not been addressed in the literature. The sacral spring is another SIJ PPT. It seems probable that the first joint to respond would be the lumbosacral which has freer mobility than the SIJ, and therefore it might provoke lumbar nociception. Clinicians must be very judicious in the application and interpretation of these tests.

The article addresses the poor intertester reliability of palpation of the ASIS and PSIS bony landmarks. Additional rather flat and broad landmarks are available which are less subtle such as the anterior iliac shelf (just above the ASIS), the posterior iliac shelf (at midline of the ilium), the posterior aspect of the ischium and the medial aspect of the ischial tuberosity. The utility and reliability of palpation of these areas, along with ligament tone palpation should be evaluated with future research. SIJ ligament palpation is important in screening SIJ pain in patients with hip pathology.¹⁴ One conclusion that can be drawn is that improvement in the teaching of pelvic palpation is needed.

Passive pelvic stress tests have demonstrated utility in diagnosing pubic joint instability.¹⁵ The pubic joint and SIJ are inextricably linked. Additional research is needed to

determine if passive stress tests have application for patients with SIJP and less severe degrees of pubic hypermobility. Sixteen forward thrust-recoil pelvic stress tests have been described¹⁶ which are not based on a subluxation model but rather allowing that structures external to the pelvic joints may affect motion occurring *through* the SIJ. Forward thrust pelvic spring tests have also been described by Nyberg.¹⁷ Passive stress tests have also been used to determine a lack of motion in cases of fused SIJ due to inflammatory arthritis and infection.¹⁸ Research is needed to evaluate the utility and reliability.

Patients with SIJP oftentimes present with a felt sense of acquired pelvic asymmetry, and it is important to address this in a meaningful way. A recent patient was told by ten practitioners that her “pelvis was out of alignment” and they then proceeded to provide ineffective treatment and contribute to her sense of significant stress and worry and would frequently observe it in a mirror. By utilizing passive thrust-recoil spring tests the author determined that was an absence of a treatable movement dysfunction, determining that she had a developmental asymmetry. Placing a 5 x 8 ¼” piece of craft foam under the lower ischium enhanced sitting comfort essentially replicating her natural asymmetry. There was concern about whether or not she integrated the new information but on the following visit she was more cheerful, no longer labile and expressed that she understood that she has developmental asymmetry and will no longer seek therapists to “align her pelvis”. Clinicians do not need a SIJ pathomechanical model in order to evaluate and treat posture and movement of the *entire pelvis* moving as a solitary structure moving with the trunk and moving on the femoral heads. Research on optimal exercise intervention to address perceived asymmetry and to optimize posture and movement is needed.

As the authors clearly implicate, work on reducing the pathologizing of pelvic asymmetry and perceived hypermobility/instability is very important for this population. For those whose developmental asymmetry is primarily in the hip a 1.5” x 4” soft foam roll placed underneath one trochanter can enhance sitting comfort and improve comfortable sitting posture. If the ischial lift or trochanter support is not used, the seat pain forces symmetry on a developmentally asymmetrical pelvic or hip structure which can then facilitate nociception and discomfort locally or higher up the spine. This example provides another reason why palpatory skills for the pelvis have utility and should be improved with better teaching methods. Palpation of pelvic bony landmarks in standing can be challenging due to muscle tone, which in prone and supine is more relaxed. There are several location where pelvic bones are rather flat such as the anterior iliac shelf just above the ASI, the posterior iliac shelf at the midline of the ilium, and the posterior aspect of the ischium. These areas should be evaluated for palpatory reliability.

The authors have enhanced our understanding of the problems associated with the traditional theoretical model of sacroiliac “dysfunction”, evaluation and treatment and have provided useful suggestions for improving the way that clinicians interact with this population especially with regards to beliefs that patients and clinicians have. I have suggested some future research topics and I hope that the rehabilitation profession will continue to research and improve patient care for this challenging diagnosis.

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