

Sacroiliac Joint

The sacroiliac joint, also known as the SI joint, is a large joint connecting the spine and pelvis. There are right and left sacroiliac joints, and both have quite limited mobility. In women, they normally move about 2-4°; in men, they move 1-2°. They are surrounded by some of the strongest ligaments in the body, which indicates that they have very little motion. The reason women have twice as much motion as men is that the function of the sacroiliac joint is to open up during childbirth and increase the size of the inlet of the pelvis to allow the head of the baby to engage the pelvic canal.

The majority of sacroiliac joint problems are short-lived. Some are related to trauma, including pregnancy, since child delivery is quite traumatic to the woman's pelvis. Other trauma may include a fall on the buttock, car accident, and so forth. The other large subset of sacroiliac problems stems from some sort of asymmetry in the body, such as leg length discrepancy affecting one leg after recent knee or ankle surgery and so forth. Another reason for being "asymmetrical" is scoliosis with truncal decompensation. About half the patients we see with sacroiliac problems have had prior spine procedures, most commonly spinal fusions. Sacroiliac joint issues fall into the spectrum of adjacent-segment disease after prior lumbar fusion. It can be seen after L5-S1 fusion, L4-5 fusion, and so forth. The size of the fusion as well as the exact location of the prior lumbar fusion does not seem to have strong correlation with the symptoms around the sacroiliac joint.

Interestingly, surgical treatment of the sacroiliac joint was introduced in the mid-1920s by Smith-Petersen about a decade prior to the first reported lumbar microdiscectomy for disc herniation, which was reported in 1934. The fates of those two procedures have been quite different. Lumbar discectomy has become an extraordinarily common procedure, probably the number-one spinal procedure performed in the United States. On the other hand, sacroiliac fusion for almost a century has been on the outskirts of spinal surgery, with only recent evolution of the surgical technique and understanding of the pathophysiology of sacroiliac joint dysfunction. The latest twist in the history of sacroiliac surgery came around 2009 with the introduction of minimally invasive transiliac fusion utilizing the iFuse device from SI-BONE, a local company based on San Jose, California. This has allowed us to perform the sacroiliac fusion with much less damage to the surrounding soft tissues, minimize postoperative need for mobilization, and speed up the recovery. There are more than 30 articles detailing the usage of the iFuse device and highlighting its safety and efficacy. Sacroiliac fusion seems to be extraordinarily powerful to address confirmed sacroiliac dysfunction that is refractory to conservative management. This is in stark contrast to conservative management of sacroiliac disorders, which really has minimal capacity to change the pain or dysfunction of the patient. We were part of the SIFI clinical trial, a single-arm, multicenter prospective surgical trial of the iFuse procedure to treat sacroiliac joint dysfunction and arthropathy. This has been reported in several publications. Also, we were part of the LOTUS and PROSPER retrospective studies involving sacroiliac fusion patients, both of which have recently reported in peer-reviewed publications. Overall, sacroiliac joint issues are extraordinarily common in spine practice, and at least half seem to be related to

prior lumbar fusion. We now do have a very potent, safe, and efficacious way to address those patients who fail to respond to conservative management.