

Title: Sacroiliac Joint Fusion, Open MP9643 (III-SUR.44)

Effective Date: October 01, 2024

This policy was developed with input from specialists in orthopedics and neurosurgery and endorsed by the Medical Policy Committee.

#### IMPORTANT INFORMATION - PLEASE READ BEFORE USING THIS POLICY

These services may or may not be covered by all Medica Central plans. Coverage is subject to requirements in applicable federal or state laws. Please refer to the member's plan document for other specific coverage information. If there is a difference between this general information and the member's plan document, the member's plan document will be used to determine coverage. With respect to Medicare, Medicaid, and other government programs, this policy will apply unless these programs require different coverage.

Members may contact Medica Customer Service at the phone number listed on their member identification card to discuss their benefits more specifically. Providers with questions may call the Provider Service Center. Please use the Quick Reference Guide on the Provider Communications page for the appropriate phone number. <a href="https://mo-central.medica.com/Providers/SSM-employee-health-plan-for-IL-MO-OK-providers">https://mo-central.medica.com/Providers/SSM-employee-health-plan-for-IL-MO-OK-providers</a>

Medica Central coverage policies are not medical advice. Members should consult with appropriate health care providers to obtain needed medical advice, care, and treatment.

### **PURPOSE**

To promote consistency between utilization management reviewers by providing the criteria that determines the medical necessity.

#### **BACKGROUND**

- Definitions
  - A. **Mechanical low back pain** is the generalized term that refers to any type of back pain caused by placing abnormal stress and strain on muscles of the vertebral column. Mechanical pain typically is a result of bad habits, such as poor posture, poorly-designed seating, and incorrect bending and lifting motions.
  - B. **Provocative tests** are performed to reproduce the patient's typical pain in the SI region, and can include:
    - 1. **Thigh thrust test**, which involves applying downward pressure along the femur while the individual is supine. Pain at the ilium or SI joint suggests SI joint dysfunction.
    - 2. **Compression test** (aka, approximation test) applies stress to the SI joint structures in an attempt to replicate the patient's symptoms.



- 3. *Gaenslen's test* is performed in the supine position. One hip is flexed by pushing the individual's knee to the chest, and the other knee is extended toward the opposite hip joint. This maneuver stresses both sacroiliac joints.
- 4. **Distraction test** (aka, gaping test) is the application of downward pressure to the iliac crest while in the supine position.
- 5. **Patrick's sign** (aka, Fabere test). The affected leg is Flexed, Abducted, Externally Rotated, and Extended so that the ankle of that leg is on top of the opposite knee. The affected leg is then slowly lowered toward the examining table.
- C. **Sacretectomy/partial sacretectomy** is removal or partial removal of the sacrum. Reconstruction of the union between the lumbar spine and the ilium following the procedure is done with spinal instrumentation to achieve stabilization.
- D. **Sacroiliac (SI) joint** is the joint that is formed where the sacrum (the five fused vertebrae at the base of the spine) meets the inside of the ilium (hip bone). SI joints provide stability by connecting the sacrum with the pelvis, which are held together by a group of strong ligaments. The function of the SI joint is to transfer the load of the upper body to the lower body.
- E. Sacroiliac joint fusion (aka, arthrodesis) is intended to join the sacrum and the iliac bones together to stabilize the joint, with the goal of alleviating or reducing low back pain. There are two kinds of fusion surgery: minimally invasive and open. During open surgery, a seven-to-eight inch incision is made, and muscles and tissue are separated to expose the SI joint. Cartilage is then removed between the sacrum and ilium, and a bone graft taken from the pelvis is used to connect and stabilize the joint. Screws are then inserted to keep the graft in place and stable during healing.
- F. **Sacroiliac joint infections** (e.g., osteomyelitis, pyogenic sacroiliitis) can cause inflammation of one or both of the Si joints, causing pain in the lower back and buttocks that can further extend down one or both legs. The most common cause is bacterial, and is referred to as septic arthritis of the SI joint.
- G. **Sacroiliac joint syndrome** is a general term to explain pain that arises for anatomical features of the sacrum and/or SI joint. Causes include abnormality in the fusion of the sacral bones during gestation, degenerative arthritis due to injury or wear-and-tear, and release of female hormones during pregnancy, which results in anatomical change in the SI joint.

#### II. Comments

- A. The SI joint as the primary source of lower back pain is implicated in approximately 10 30% of the population. A symptomatic SI joint can present with multiple pain patterns throughout the lumbar region, buttocks, groin, thigh, and leg. In addition, the SI joint may be a referred site of pain, including from a degenerative disc at L5-S1, spinal stenosis, or osteoarthritis of the hip.
- B. Because of its complexity, there are no reliable historical, physical, or radiological features to provide a definitive diagnosis of SI joint pain. Fluoroscopically guided injection of a local anesthetic helps confirm or exclude the diagnosis prior to performing surgery.

### BENEFIT CONSIDERATIONS

- Prior authorization is required for initial or repeat/revision SI joint fusion using an open technique. Please see the prior authorization list for product specific prior authorization requirements.
- 2. Prior authorization is not required when open SI joint fusion is emergent in nature.



- 3. **Open SI joint fusion** is *investigative* and therefore not covered for all other indications not considered medically necessary as defined below, including but not limited to: (1) degenerative SI joint, (2) mechanical low back pain, (3) radicular pain syndrome, or (4) SI joint syndrome. Open surgery is used sparingly due to the significant morbidity associated with the depth and anatomic location of the SI joint.
- 4. If the Medical Necessity Criteria and Benefit Considerations are met, The Health Plan will authorize benefits within the limits in the member's plan document.
- 5. If it appears that the Medical Necessity Criteria and Benefit Considerations criteria are not met, the individual's case will be reviewed by the medical director or an external reviewer. Practitioners are reminded of the appeals process in their Administrative Manual.

#### MEDICAL NECESSITY CRITERIA

Refer to the section below which corresponds with the surgical procedure(s), *initial or repeat/revision*, being requested:

NOTE: See Carelon policy, Sacroiliac Joint Fusion, for specific medical necessity criteria regarding percutaneous/ minimally invasive sacroiliac joint fusion techniques.

- I. Open SI Joint fusion is medically necessary when documentation in the medical record indicates treatment for one of the following indications:
  - A. Sacral tumors, when used adjunctively with sacretectomy or partial sacretectomy
  - B. SI joint infections (e.g., osteomyelitis, pyogenic sacroiliitis) when used adjunctively with medical treatment
  - C. Traumatic injuries (e.g., pelvic ring fractures, acetabular fracture, spinopelvic dissociation).

NOTE: All other indications for open SI joint fusion are *investigative and therefore not covered*.

#### CENTERS FOR MEDICARE & MEDICAID SERVICES (CMS)

 For Medicare members, refer to the following, as applicable at: <a href="https://www.cms.gov/medicare-coverage-database/search.aspx">https://www.cms.gov/medicare-coverage-database/search.aspx</a>



#### **DOCUMENT HISTORY**

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#### References:

#### Pre-07/2020 Medical Technology Assessment Committee (MTAC) Review:

- 1. Beck CE, Jacobson S, Thomasson E. A Retrospective Outcomes Study of 20 Sacroiliac Joint Fusion Patients. *Cureus*. 2015;7(4):e260. doi: 10.7759/cureus.260.
- 2. Bellabarba C, Schildhauer TA, Vaccaro AR, Chapman JR. Complications associated with surgical stabilization of high-grade sacral fracture dislocations with spino-pelvic instability. *Spine (Phila Pa 1976)*. 2006;31(11 Suppl):S80-S88.
- 3. Bina RW, Hurlbert RJ. Sacroiliac Fusion: Another "Magic Bullet" Destined for Disrepute. *Neurosurg Clin N Am.* 2017;28(3):313-320. doi: 10.1016/j.nec.2017.02.001.
- 4. Dalbayrak S, Ayten M, Özer F, Yaman O. Surgical treatment of a Malgaigne fracture. *Ulus Travma Acil Cerrahi Derg.* 2014;20(4):300-4. doi: 10.5505/tjtes.2014.25923.
- 5. Dengler J, Duhon B, Whang P, et al. Predictors of Outcome in Conservative and Minimally Invasive Surgical Management of Pain Originating from the Sacroiliac Joint: A Pooled Analysis. *Spine (Phila Pa 1976)*. 2017. doi: 10.1097/BRS.0000000000002169.
- 6. Domovitov SV, Chandhanayingyong C, Boland PJ, McKeown DG, Healey JH. Conservative surgery in the treatment of giant cell tumor of the sacrum: 35 years' experience. *J Neurosurg Spine*. 2015:1-13. [Epub ahead of print]
- 7. Duhon BS, Cher DJ, Wine KD, Lockstadt H, Kovalsky D, Soo CL. Safety and 6-month effectiveness of minimally invasive sacroiliac joint fusion: a prospective study. *Med Devices* (Auckl). December 2013;6:219-229. doi: 10.2147/MDER.S55197.
- 8. <u>Ebraheim NA</u>, <u>Ramineni SK</u>, Alla SR, et al. Sacroiliac joint fusion with fibular bone graft in patients with failed percutaneous iliosacral screw fixation. <u>J Trauma.</u> November 2010;69(5):1226-1229.
- 9. ECRI Institute. *ECRI Custom Hotline: Sacroiliac Joint Fusion for Treating Chronic Low-back Pain*. January 2013. Plymouth Meeting, PA.
- 10. ECRI Institute. *ECRI Custom Hotline: iFuse Implant System for Sacroiliac Joint Arthrodesis.* January 2010. Plymouth Meeting PA.
- 11. ECRI Institute. *ECRI Hotline Response: Sacroiliac Joint Fusion for Treating Chronic Low-back Pain*. May 2016. Plymouth Meeting, PA.
- 12. ECRI Institute. ECRI Product Brief: iFuse Implant System (SI-Bone, Inc.) for Minimally Invasive Sacroiliac Joint Fusion. June 2017. Plymouth Meeting, PA.
- 13. Endres S, Ludwig E. Outcome of distraction interference arthrodesis of the sacroiliac joint for sacroiliac arthritis. *Indian J Orthop*. 2013;47(5):437-442.



- 14. Hayes Inc. Hayes Brief: iFuse Implant System (SI-BONE Inc.) for Sacroiliac Joint Fusion for Treatment of Low Back Pain. March 2014. Lansdale, PA.
- 15. Hayes Inc. Hayes Brief: Open Surgery for Sacroiliac Joint Fusion for the Treatment of Low Back Pain. March 2014. Lansdale, PA.
- 16. Hayes, Inc. Hayes Brief: iFuse Implant System (SI-Bone Inc.) for Sacroiliac Joint Fusion for Treatment of Low Back Pain. December 2016. Lansdale, PA.
- 17. Hayes, Inc. *Hayes Brief: Open Sacroiliac Joint Fusion for Unspecified Sacroiliac Joint Dysfunction*. June 2017. Lansdale, PA.
- 18. Hayes, Inc. *Hayes Brief: Sacroiliac Joint Fusion for Treatment of Adult Low Back Pain*. August 2011. Lansdale, PA.
- 19. Hayes, Inc. *Hayes Search & Summary: iFuse implant system*® (*SI-Bone Inc.*). August 2011. Lansdale, PA.
- 20. Heiney J, Capobianco R, Cher D. A systematic review of minimally invasive sacroiliac joint fusion utilizing a lateral transarticular technique. *Int J Spine Surg.* 2015;9:40. doi: 10.14444/2040.
- 21. Jones CB, Sietsema DL, Hoffmann MF. Can lumbopelvic fixation salvage unstable complex sacral fractures? *Clin Orthop Relat Res.* 2012;470(8):2132-41. doi: 10.1007/s11999-012-2273-z.
- 22. Kanakaris NK, Psarakis S, Chalidis B, Kontakis G, Giannoudis PV. Management of pelvic instability secondary to chronic pyogenic sacroiliitis: case report. *Surg Infect (Larchmt)*. 2009;10(4):353-8. doi: 10.1089/sur.2007.094.
- 23. Kibsgård TJ, Røise O, Sudmann E, Stuge B. Pelvic joint fusions in patients with chronic pelvic girdle pain: a 23-year follow-up. *Eur Spine J.* April 2013;22(4):871-877. doi: 10.1007/s00586-012-2512-8.
- 24. Ledonio CG, Polly DW Jr, Swiontkowski MF. Minimally invasive versus open sacroiliac joint fusion: are they similarly
- 25. Lingutla KK, Pollock R, Ahuja S. Sacroiliac joint fusion for low back pain: a systematic review and meta-analysis. *Eur Spine J.* 2016;25(6):1924-1931. doi: 10.1007/s00586-016-4490-8.
- 26. Lingutla KK, Pollock R, Ahuja S. Sacroiliac joint fusion for low back pain: a systematic review and meta-analysis. *Eur Spine J.* 2016;25(6):1924-31. doi: 10.1007/s00586-016-4490-8.
- 27. Lorio MP. ISASS Policy 2016 Update Minimally Invasive Sacroiliac Joint Fusion. *Int J Spine Surg.* 2016;10:26. doi: 10.14444/3026.
- 28. Manchikanti L, Boswell MV, Singh V, et al. Comprehensive evidence-based guidelines for interventional techniques in the management of chronic spinal pain. *Pain Physician* July-August 2009;12(4):699-802.
- 29. Ohtori S, Sainoh T, Takaso M, et al. Clinical incidence of sacroiliac joint arthritis and pain after sacropelvic fixation for spinal deformity. *Yonsei Med J*. March 2012;53(2):416-421. doi: 10.3349/ymj.2012.53.2.416.
- Polly DW, Cher DJ, Wine KD, et al. Randomized Controlled Trial of Minimally Invasive Sacroiliac Joint Fusion Using Triangular Titanium Implants vs Nonsurgical Management for Sacroiliac Joint Dysfunction: 12-Month Outcomes. *Neurosurgery*. 2015;77(5):674-690. doi: 10.1227/NEU.0000000000000988.
- 31. Polly DW, Swofford J, Whang PG, et al. Two-Year Outcomes from a Randomized Controlled Trial of Minimally Invasive Sacroiliac Joint Fusion vs. Non-Surgical Management for Sacroiliac Joint Dysfunction. *Int J Spine Surg.* 2016;10:28. doi: 10.14444/3028.
- 32. Rudolf L. Sacroiliac joint arthrodesis-MIS technique with titanium implants: report of the first 50 patients and outcomes. *Open Orthop J.* 2012;6:495-502.
- 33. Sachs D, Capobianco R. Minimally invasive sacroiliac joint fusion: one-year outcomes in 40 patients. *Adv Orthop*. 2013;2013:536128. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3755432/. Accessed August 4, 2014.



safe and effective? *Clin Orthop Relat Res.* June 2014;472(6): 1831-1838. doi: 10.1007/s11999-014-3499-8.

- 34. Slinkard N, Agel J, Swiontkowski MF. Documentation of outcomes for sacroiliac joint fusion: does prior spinal fusion influence the outcome? *Eur Spine J*. 2013;22(10):2318-24. doi: 10.1007/s00586-013-2968-1.
- 35. Smith AG, Capobianco R, Cher D, et al. Open versus minimally invasive sacroiliac joint fusion: a multi-center comparison of perioperative measures and clinical outcomes. *Ann Surg Innov Res.* 2013;7(1):14. doi: 10.1186/1750-1164-7-14.
- 36. Smith AG, Capobianco R, Cher D. Open versus minimally invasive sacroiliac joint fusion: a multi-center comparison of perioperative measures and clinical outcomes. *Ann Surg Innov Res.* October 2013;7(1):14. doi: 10.1186/1750-1164-7-14.
- 37. Spain K, Holt T. Surgical Revision after Sacroiliac Joint Fixation or Fusion. *Int J Spine Surg.* 2017;11:5. doi: 10.14444/4005.
- 38. Sturesson B, Kools D, Pflugmacher R, et al. Six-month outcomes from a randomized controlled trial of minimally invasive SI joint fusion with triangular titanium implants vs conservative management. *Eur Spine J.* 2017;26(3):708-719. doi: 10.1007/s00586-016-4599-9.
- 39. Vanaclocha V, Herrera JM, Sáiz-Sapena N, Rivera-Paz M, Verdú-López F. Minimally Invasive Sacroiliac Joint Fusion, Radiofrequency Denervation, and Conservative Management for Sacroiliac Joint Pain: 6-Year Comparative Case Series. *Neurosurgery*. 2017. doi: 10.1093/neuros/nyx185.
- 40. Whang P, Cher D, Polly D, et al. Sacroiliac Joint Fusion Using Triangular Titanium Implants vs. Non-Surgical Management: Six-Month Outcomes from a Prospective Randomized Controlled Trial. *Int J Spine Surg.* 2015;9:6. doi: 10.14444/2006.
- 41. Wheeler SG, Wipf JE, Staiger TO, Deyo RA. Evaluation of low back pain in adults. Last updated April 2, 2018. In: *UpToDate*, Basow, DS (Ed), UpToDate, Waltham, MA, 2018.
- 42. Wise CL, Dall BE. Minimally invasive sacroiliac arthrodesis: outcomes of a new technique. *J Spinal Disord Tech*. December 2008;21(8):579-584.
- 43. Work Loss Data Institute. *Hip & pelvis (Acute & Chronic)*. Encinitas (CA): Work Loss Data Institute. June 2013.
- 44. Yoshihara H. Surgical options for lumbosacral fusion: biomechanical stability, advantage, disadvantage and affecting factors in selecting options. *Eur J Orthop Surg Traumatol*. 2014;24 Suppl 1:S73-82. doi: 10.1007/s00590-013-1282-2.

### 07/2020 MTAC Review:

- 45. Cher D, Wroe K, Reckling WC, Yerby S. Postmarket surveillance of 3D-printed implants for sacroiliac joint fusion. *Med Devices (Auckl)*. 2018;11:337-343. doi: 10.2147/MDER.S180958.
- 46. Darr E, Cher D. Four-year outcomes after minimally invasive transiliac sacroiliac joint fusion with triangular titanium implants. *Med Devices (Auckl)*. 2018;11:287-289. doi: 10.2147/MDER.S179003.
- 47. Darr E, Meyer SC, Whang PG, et al. Long-term prospective outcomes after minimally invasive trans-iliac sacroiliac joint fusion using triangular titanium implants. *Med Devices (Auckl)*. 2018;11:113-121. doi: 10.2147/MDER.S160989.
- 48. Dengler J, Kools D, Pflugmacher R, et al. Randomized Trial of Sacroiliac Joint Arthrodesis Compared with Conservative Management for Chronic Low Back Pain Attributed to the Sacroiliac Joint. *J Bone Joint Surg Am.* 2019;101(5):400-411. doi: 10.2106/JBJS.18.00022.
- 49. Dengler J, Sturesson B, Kools D, et al. Risk Factors for Continued Opioid Use in Conservative Versus Surgical Management of Low Back Pain Originating From the Sacroiliac Joint. *Global Spine J*. 2018;8(5):453-459. doi: 10.1177/2192568217733707.



- 50. ECRI Institute. ECRI Product Brief: Siconus System (Camber Spine Technologies) for Sacroiliac Joint Fusion. September 2018. Plymouth Meeting, PA.
- 51. ECRI Institute. ECRI Product Brief: iFuse Implant System (SI-Bone, Inc.) for Minimally Invasive Sacroiliac Joint Fusion. September 2019. Plymouth Meeting, PA.
- 52. ECRI Institute. *ECRI Product Brief: LinQ (PainTeq) for Sacroiliac Joint Fusion.* February 2020. Plymouth Meeting, PA.
- 53. ECRI Institute. ECRI Product Brief: Prolix SI Fusion System (Camber Spine Technologies) for Sacroiliac Joint Fusion. August 2019. Plymouth Meeting, PA.
- 54. Hayes, Inc. Hayes Annual Review: Open Sacroiliac Joint Fusion for Unspecified Sacroiliac Joint Dysfunction. July 2019. Lansdale, PA.
- 55. Hayes, Inc. Hayes Annual Brief: iFuse Implant System (SI-Bone Inc.) for Sacroiliac Joint Fusion for Treatment of Sacroiliac Joint Dysfunction. December 2018. Annual Review last updated February 2020. Lansdale, PA.
- 56. Lindsey DP, Kiapour A, Yerby SA, Goel VK. Sacroiliac joint stability: Finite element analysis of implant number, orientation, and superior implant length. *World J Orthop.* 2018;9(3):14-23. doi: 10.5312/wjo.v9.i3.14.
- 57. Russo GS, Whang PG, Woods BI, Radcliff K. Is the SIJ a Cause of Pain that can be Accurately Identified and Treated With an SI Fusion? *Clin Spine Surg*. 2017;30(5):187-190. doi: 10.1097/BSD.000000000000548.
- 58. Shamrock AG, Patel A, Alam M, Shamrock KH, Al Maaieh M. The Safety Profile of Percutaneous Minimally Invasive Sacroiliac Joint Fusion. *Global Spine J.* 2019;9(8):874-880. doi: 10.1177/2192568218816981.
- 59. Tran ZV, Ivashchenko A, Brooks L. Sacroiliac Joint Fusion Methodology Minimally Invasive Compared to Screw-Type Surgeries: A Systematic Review and Meta-Analysis. *Pain Physician*. 2019;22(1):29-40.
- 60. locha V, Herrera JM, Sáiz-Sapena N, Rivera-Paz M, Verdú-López F. Minimally Invasive Sacroiliac Joint Fusion, Radiofrequency Denervation, and Conservative Management for Sacroiliac Joint Pain: 6-Year Comparative Case Series. *Neurosurgery*. 2018;82(1):48-55. doi: 10.1093/neuros/nyx185.
- 61. Washington State Health Care Authority. Health Technology Assessment Program (HTA). *Final Evidence Report: Sacroiliac Joint Fusion*. December 2018. Olympia, WA.
- 62. Whang PG, Darr E, Meyer SC, et al. Long-Term Prospective Clinical And Radiographic Outcomes After Minimally Invasive Lateral Transiliac Sacroiliac Joint Fusion Using Triangular Titanium Implants. *Med Devices (Auckl)*. 2019;12:411-422. doi: 10.2147/MDER.S219862.
- 63. Whelan R, Duhon B. The Evidence for Sacroiliac Joint Surgery. Tech Orthop. 2019;34:87–95.
- 64. Yson SC, Sembrano JN, Polly DW Jr. Sacroiliac Joint Fusion: Approaches and Recent Outcomes. *PM R*. 2019;11 Suppl 1:S114-S117. doi: 10.1002/pmrj.12198.

#### 11/2020 Medical Policy Committee (MPC) Review:

- 65. Arnbak B, Jensen RK, Manniche C, et al. Identification of subgroups of inflammatory and degenerative MRI findings in the spine and sacroiliac joints: a latent class analysis of 1037 patients with persistent low back pain. *Arthritis Res Ther*. 2016;18(1):237. Published 2016 Oct 13. doi:10.1186/s13075-016-1131-x.
- 66. Petersen T, Laslett M, Juhl C. Clinical classification in low back pain: best-evidence diagnostic rules based on systematic reviews. *BMC Musculoskelet Disord*. 2017;18(1):188. Published 2017 May 12. doi:10.1186/s12891-017-1549-6.
- 67. Prather H, Hunt D. Conservative management of low back pain, part I. Sacroiliac joint pain. *Dis Mon.* 2004;50(12):670-683. doi:10.1016/j.disamonth.2004.12.004
- 68. Schneider BJ, Ehsanian R, Huynh L, Levin J, Zheng P, Kennedy DJ. Pain and Functional Outcomes After Sacroiliac Joint Injection with Anesthetic and Corticosteroid at Six Months,



- Stratified by Anesthetic Response and Physical Exam Maneuvers. *Pain Med.* 2020;21(1):32-40. doi:10.1093/pm/pnz111.
- 69. Schneider BJ, Huynh L, Levin J, Rinkaekan P, Kordi R, Kennedy DJ. Does Immediate Pain Relief After an Injection into the Sacroiliac Joint with Anesthetic and Corticosteroid Predict Subsequent Pain Relief?. *Pain Med.* 2018;19(2):244-251. doi:10.1093/pm/pnx104.
- 70. Urits I, Burshtein A, Sharma M, et al. Low Back Pain, a Comprehensive Review: Pathophysiology, Diagnosis, and Treatment. *Curr Pain Headache Rep.* 2019;23(3):23. Published 2019 Mar 11. doi:10.1007/s11916-019-0757-1

### 11/2021 MPC Review:

No new references.

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