Evaluating the Patient with Sacroiliac Joint Pain

Alisa Freas PA-C

Learning Objectives

- Understand the anatomy and function of the sacroiliac (SI) joint.
- Identify common causes and risk factors for SI joint pain.
- Recognize clinical presentation and diagnostic techniques.
- Explore evidence-based management strategies.

BACKGROUND

- Sacroiliac joint is an under-recognized source of low back pain
- The prevalence of SI joint pain in patients with mechanical low back pain has been reported to be in the **range of 15-30%.** [1]

Bernard TN, Kirkaldy-Willis WH. Recognizing specific characteristics of nonspecific low back pain. Clin Orthop. 1987;217(Apr):266–280.

Anatomy and Function

Joint Type:

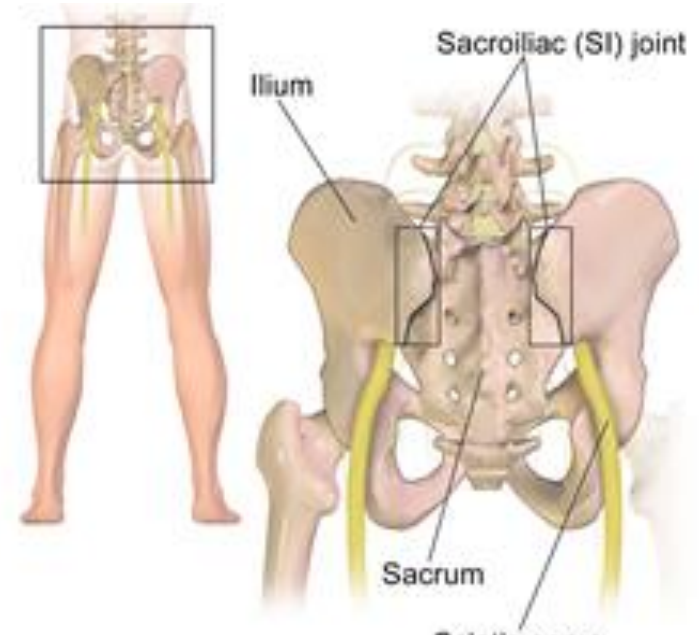
- C-shaped synovial joint connecting the ilium to the sacrum.

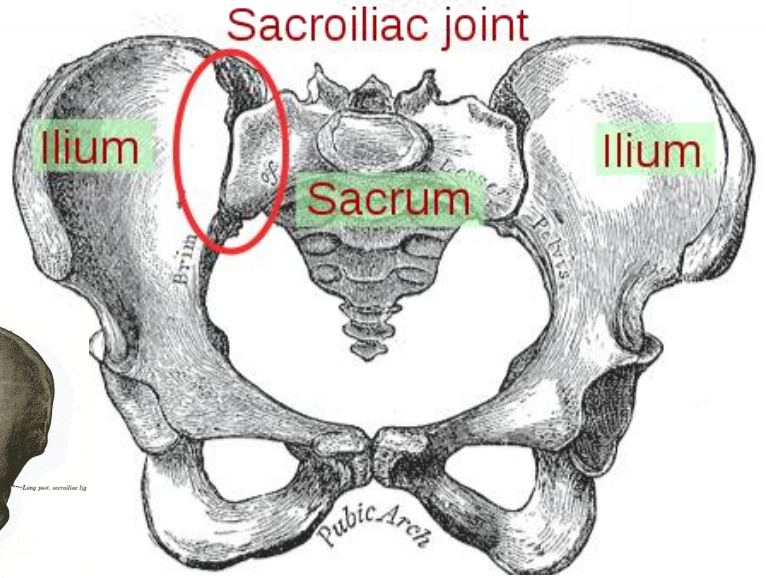
Function:

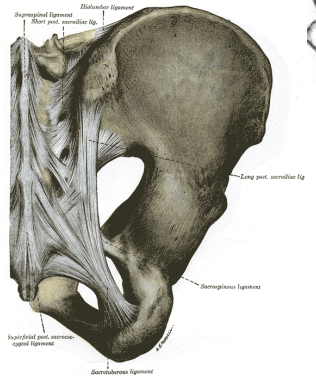
- Provides stability and supports upper body.
- Reduces forces to the lower extremities.

Key Characteristics:

- Major weight-bearing joint.
- Very limited range of motion (appx 3 Degrees)
- Strong, complex ligaments enhance stability of this joint.







Causes and Risk Factors

- Trauma
- Repetitive activities
- Obesity (excessive abdominal girth)
- Arthritis
- Changes in Gait
- Lumbar Fusion
- Leg Length Discrepancies
- Sitting long periods of time
- Pregnancy

Causes and Risk Factors

- Pregnancy-induced sacroiliac joint dysfunction is usually self-limiting and resolves within 12 months postpartum.

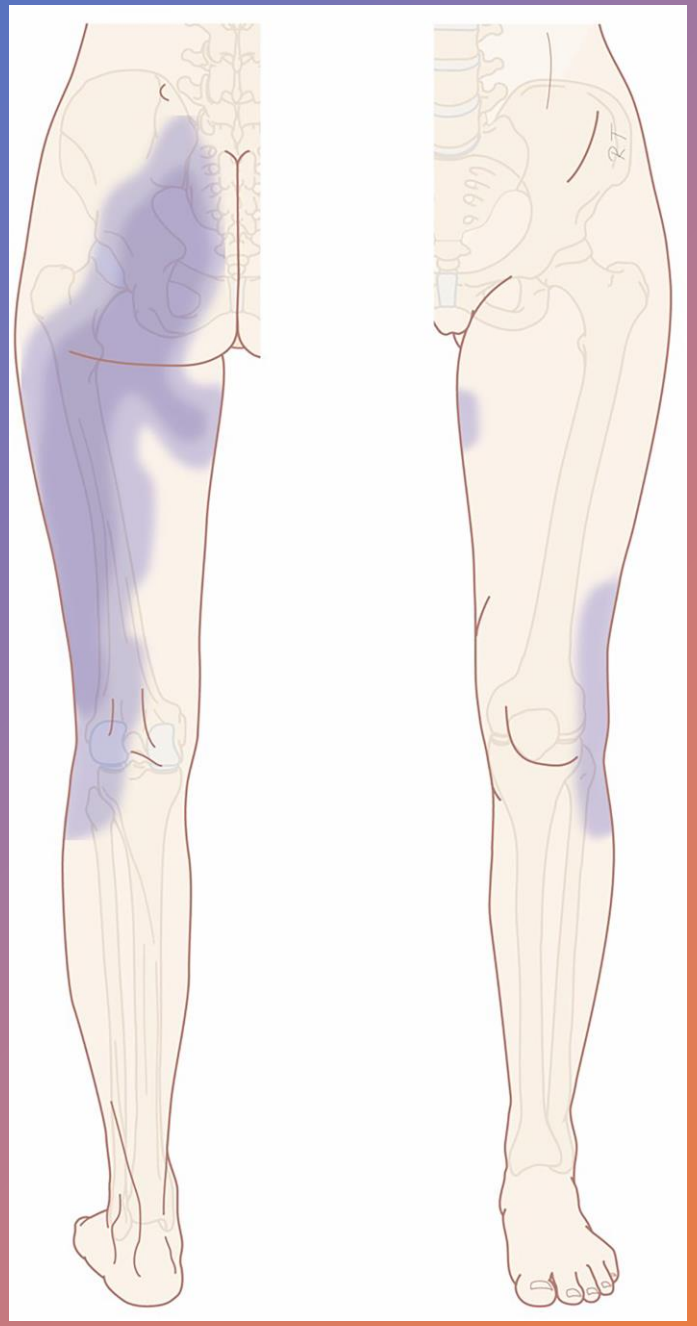
- There is a **bimodal distribution** with **two peaks**—younger adults following sporting injury and pregnancy and older adults from degeneration.

Diagnosis

Clinical Approach:

Diagnosis of SIJ pain typically involves:

- Reviewing the patient's history.
- Performing a thorough physical examination.
- Excluding other potential sources of pain.
- Utilizing diagnostic (and potentially therapeutic) intraarticular injection.



Clinical Presentation

- Deep dull ache pain ranging from mild to severe
- Some stiffness
- Generally localized to the gluteal and lower lumbar region and a common referral pattern is to the posterolateral thigh
- Pain can also radiate to the groin and/or lateral knee but typically does not go past the knee (less than 10%)
- Often localized to one side
- Prolonged standing or sitting

Clinical Presentation with Activities

- Pain is often aggravated by:
  - Transitions from sitting to standing
  - Lying on the affected side or turning in bed
  - Ascending or descending stairs
  - Shifting weight to affected side

Diagnosis

- History of Present Illness
  - Clinical presentation
  - Hx of or recent trauma?
  - Hx of lumbar fusion?
- Physical Exam
  - Fortin finger test
  - Special Tests
  - Neuro exam normal
- Imaging if needed to rule out other possible causes
- Image guided Sacroiliac Joint Injection

Fortin Finger Test:

- The patient points to the area of pain with one finger.
- The test is positive if the site of pain is within 1 cm of the posterior superior iliac spine.
- Usually, the pain is inferomedial to the posterior superior iliac spine on the affected side.

Newman DP, Soto AT. Sacroiliac Joint Dysfunction: Diagnosis and Treatment. Am Fam Physician. 2022 Mar 1;105(3):239-245. PMID: 35289578.

Diagnosis

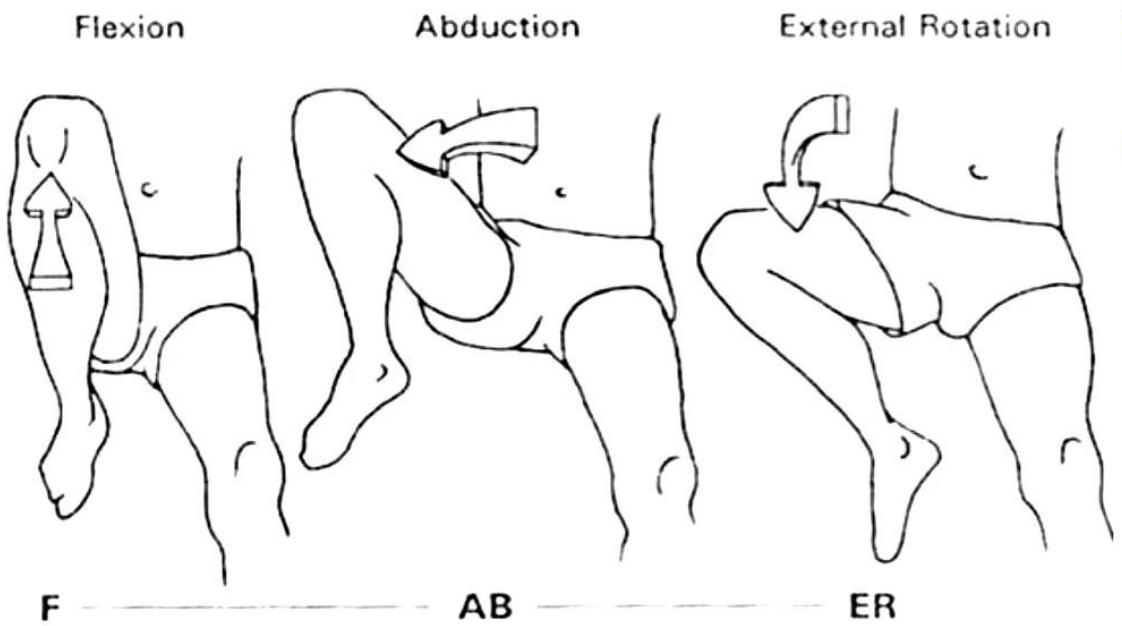
SPECIAL TESTS:

- Combination of **three positive tests** demonstrated high specificity and moderately high sensitivity (ranging from 77-87%)
    - FABER test
    - Posterior shear (thigh thrust)
    - Resisted abduction
- Others: Gaenslen test, Compression test

Broadhurst NA, Bond MJ. Pain provocation tests for the assessment of sacroiliac joint dysfunction. J Spinal Disord. 1998 Aug;11(4):341-5. PMID: 9726305.

Patrick's or FABER

- **FABER: flexion, abduction, and external rotation test**
- **Highest sensitivity of all the tests**



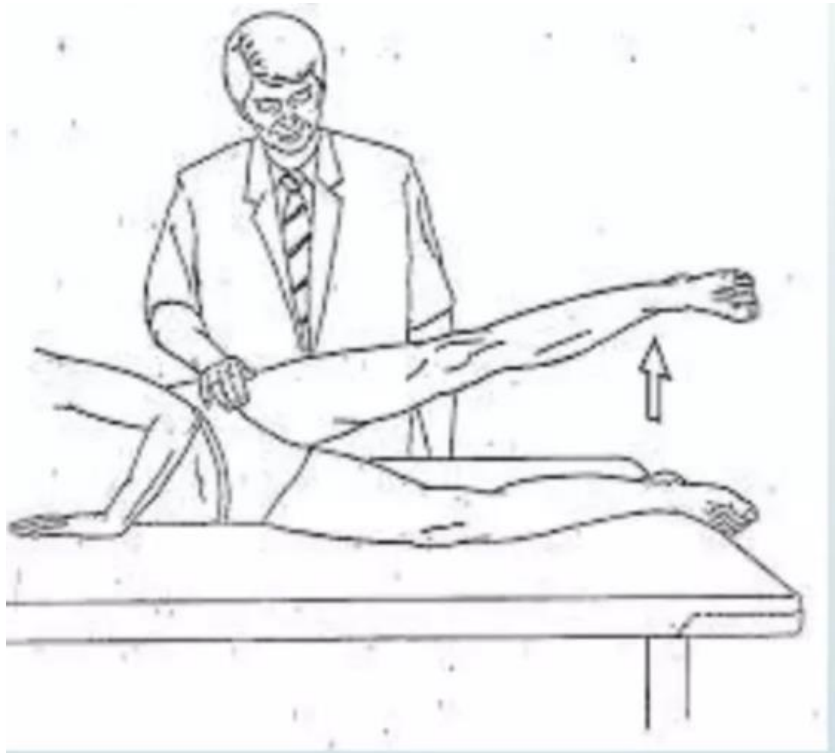
Pain Physician 2018: 21:E367-E376

Posterior Shear (Thigh Thrust)

- The examiner flexes the hip and knee on the side being tested to approximately 90 degrees, then applies a **downward force through the femur,** creating a shear stress on the SI joint.

Resisted Abduction Test

- The patient is supine or lateral position
- The affected leg is passively abducted about 30-45°, slight flexion in the knee
- The patient is then asked to **abduct against resistance** from the examiner
- Positive Test:
  - Pain to lower back or buttock suggests sacroiliac joint



Resisted abduction test

Gaenslen Test

- The examiner applies firm pressure to the knee of the flexed leg.
- The examiner applies counterpressure to the knee of the hanging leg.
- Test is positive if pain is felt in the SIJ area of the hanging leg.

Compression Test

- The patient lies on their side (lateral decubitus position) with the affected side facing up.
- The patient faces away from the examiner.
- The examiner applies downward pressure to the iliac crest and anterior superior iliac spine (ASIS) on the affected side.
- The test is positive if the patient experiences pain in the sacroiliac joint (SIJ) on the side facing up.

Differential Diagnosis

- Piriformis syndrome
- Hip pain
- Myofascial pain
- Greater Trochanteric Bursitis
- Lumbosacral Facet-mediated pain
- Proximal L5 Radiculopathy

Differential Diagnosis: Clinical Presentation

TABLE 1

Differential Diagnoses of Sacroiliac Joint Dysfunction

Differential diagnosis	Clinical presentation
Femoral acetabular impingement	Pain with activity or prolonged sitting, joint locking or clicking
Fractures (secondary to trauma, osteoporosis)	History and imaging
Infection	Fever, malaise, intractable pain
Ischiofemoral impingement	Gluteal or hip pain, hip snapping, shortened stride
Lumbar disc herniation	Numbness or tingling in the legs or feet, lower extremity weakness, radiating pain, bowel or bladder changes
Lumbar facet syndrome	Older age, paraspinal muscle tenderness, pain with backward bending
Piriformis syndrome	Sitting intolerance, radiating pain along the posterior of one or both legs
Pudendal nerve irritation	Perineal or scrotal pain, sitting intolerance
Spondyloarthropathies	Positive findings on laboratory tests, diagnostic imaging
Tumor	Focal bone pain, pathologic fractures

Note: These conditions and diagnoses share similar signs and clinical presentation with sacroiliac joint dysfunction. Additional diagnostic testing should be considered to rule out serious pathology.

Information from references 9-11.

Newman DP, Soto AT. Sacroiliac Joint Dysfunction: Diagnosis and Treatment. Am Fam Physician. 2022 Mar 1;105(3):239-245. PMID: 35289578.

Conservative Management

Conservative Care of SIJ Disorders

Acute (1–3 days)	Subacute (3 days - 8 weeks)	Chronic/Maintenance Phase (>8 weeks)
Avoid Triggering Activities	Focus on increasing activity, increasing mobility, strengthening, and stretching musculature with physical therapy, normalizing posture, and mechanics	Interventional Pain Management Options, home exercise program
Medications: NSAIDs	Medications: NSAIDs	Medications: NSAIDs

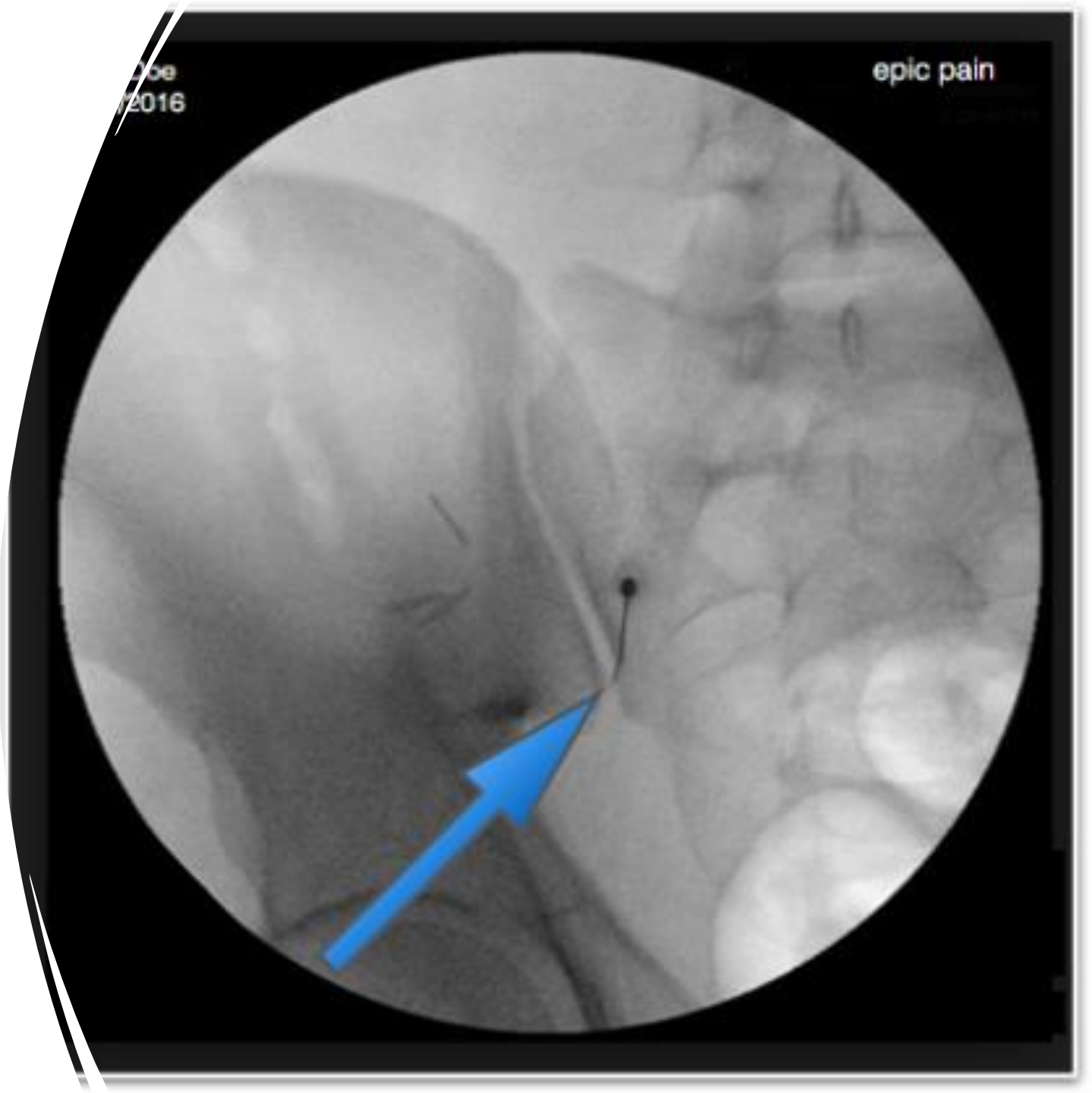
Sayed D, Deer TR, Tieppo Francio V, Lam CM, Sochacki K, Hussain N, Weaver TE, Karri J, Orhurhu V, Strand NH, Weisbein JS, Hagedorn JM, D'Souza RS, Budwany RR, Chitneni A, Amirdelfan K, Dorsi MJ, Nguyen DTD, Bovinet C, Abd-Elsayed A. American Society of Pain and Neuroscience Best Practice (ASPN) Guideline for the Treatment of Sacroiliac Disorders. J Pain Res. 2024 May

Interventional Treatment

- SIJ injections
- SIJ RFA
- Surgery
  - SIJ Fusion

Sacroiliac Joint Injections

- **Used for diagnostic and therapeutic purpose**
  - positive if 50-**75%** pain relief
- Majority are done with fluoroscopic guidance in an ambulatory surgery setting
- Absolute contraindications include infection and local malignancy, pregnancy (depending on imaging)



Sacroiliac Radiofrequency Ablation (RFA)

- RFA is a widely used intervention for management of chronic pain conditions.
- Provides a less invasive alternative to surgery while delivering longer lasting outcomes than traditional steroid injections.
- SIJ RFA's are considered when patients have failed conservative care and had significant improvement in pain and function with diagnostic blocks. (≥75%)
- SIJ RFA targets posterior nerve supply (S1-3 lateral branches and the primary L5 dorsal rami).
- Sustain relief for at least 6 months reported in over 60% of participants

American Society of Pain and Neuroscience Best Practice (ASPN) Guideline for the Treatment of Sacroiliac Disorders. J Pain Res. 2024

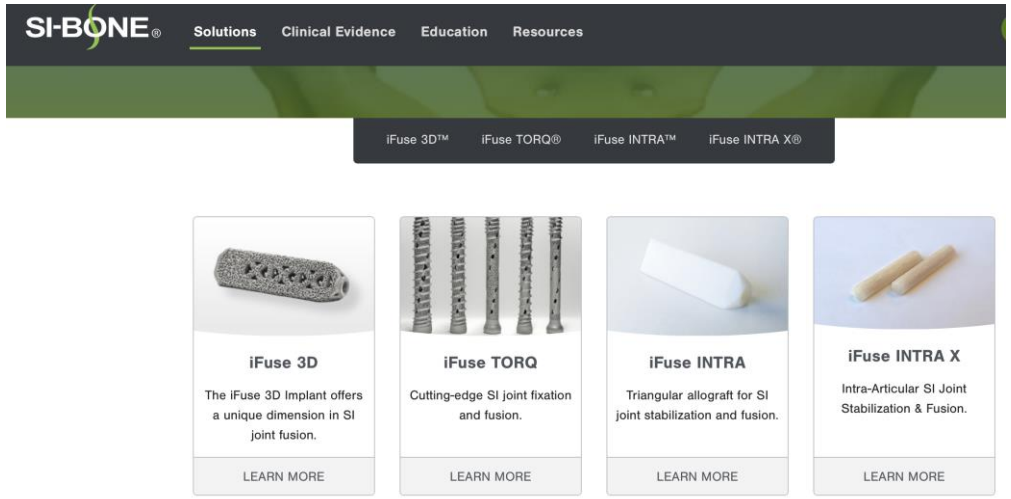
Minimally Invasive Sacroiliac Joint Fusion

SIJ FUSION FOLLOWS CONSERVATIVE ATTEMPTS, AND LESS INVASIVE INTERVENTIONS WITH ONGOING OR RECURRENT SIJ PAIN.

AIMS TO STABILIZE THE JOINT TO PREVENT LAXITY.

MINIMALLY INVASIVE FUSION : A DEVICE, SUCH AS A SCREW OR ROD, STABILIZES THE JOINT BY FIRMLY HOLDING IT IN PLACE AND PENETRATES THE OUTER LAYER OF BONE TO ENSURE THIS STRONG, SECURE CONNECTION

TRADITIONAL OPEN SIJF PROCEDURES ARE COMPLEX AND INVASIVE AND ASSOCIATED WITH LONG HOSPITAL STAYS AND PROLONGED RECOVERY. RESERVED FOR REVISIONS AND NONUNIONS.



(ASPN) Guideline for the Treatment of Sacroiliac Disorders

Published May 2024

Journal of Pain Research

Dovepress
open access to scientific and medical research

Open Access Full Text Article

REVIEW

American Society of Pain and Neuroscience Best Practice (ASPN) Guideline for the Treatment of Sacroiliac Disorders

Dawood Sayed[1], Timothy R Deer[2,3], Vinicius Tieppo Francio[1], Christopher M Lam[1], Kamil Sochacki[4], Nasir Hussain[5], Tristan E Weaver[5], Jay Karri[6,7], Vwaire Orhurhu[8,9], Natalie Holmes Strand[10], Jacqueline Soicher Weisbein[11], Jonathan M Hagedorn[12], Ryan S D'Souza[12], Ryan R Budwany[2], Ahish Chitneni[13], Kasra Amirdelfan[14], Michael J Dorsi[15], Dan TD Nguyen[16], Christopher Bovinet[17], Alaa Abd-Elsayed[18]

[1]Anesthesiology and Pain Medicine, The University of Kansas Medical Center, Kansas City, KS, USA; [2]Pain Services, Spine and Nerve Center of the Virginias, Charleston, WV, USA; [3]Anesthesiology and Pain Medicine, West Virginia University School of Medicine, Charleston, WV, USA; [4]Department of Anesthesiology and Perioperative Medicine, Rutgers Robert Wood Johnson, New Brunswick, NJ, USA; [5]Anesthesiology, the Ohio State University Wexner Medical Center, Columbus, OH, USA; [6]Department of Orthopedic Surgery, University of Maryland School of Medicine, Baltimore, MD, USA; [7]Department of Anesthesiology, University of Maryland School of Medicine, Baltimore, MD, USA; [8]Department of Anesthesiology, University of Pittsburgh Medical Center, Williamsport, PA, USA; [9]Pain Medicine, MVM Health, East Stroudsburg, PA, USA; [10]Anesthesiology and Pain Medicine, Mayo Clinic, Phoenix, AZ, USA; [11]Interventional Pain Management, Napa Valley Orthopaedic Medical Group, Napa, CA, USA; [12]Department of Anesthesiology and Perioperative Medicine, Mayo Clinic, Rochester, MN, USA; [13]Department of Rehabilitation & Regenerative Medicine, New York Presbyterian – Columbia & Cornell, New York, NY, USA; [14]Director of Clinical Research, Boomerang Healthcare, Walnut Creek, CA, USA; [15]Neurosurgery, University of California Los Angeles, Los Angeles, CA, USA; [16]Neuroradiology & Pain Solutions of Oklahoma, Edmond, OK, USA; [17]The Spine Center of SE Georgia, Brunswick, GA, USA; [18]Anesthesiology, University of Wisconsin, Madison, WI, USA

Correspondence: Dawood Sayed, Anesthesiology and Pain Medicine, The University of Kansas Medical Center, Kansas City, KS, USA, Tel +1 785-550-5800, Email dsayed@kumc.edu

Abstract: Clinical management of sacroiliac disease has proven challenging from both diagnostic and therapeutic perspectives. Although it is widely regarded as a common source of low back pain, little consensus exists on the appropriate clinical management of sacroiliac joint pain and dysfunction. Understanding the biomechanics, innervation, and function of this complex load bearing joint is

Sacroiliac Joint Dysfunction: Diagnosis and Treatment

PDF Print Comments

DAVID P. NEWMAN, PT, DPT, MAdEd, MBA, AND ADAM T. SOTO, MD

Am Fam Physician. 2022;105(3):239-245

Patient information: See related handout on sacroiliac joint dysfunction and back pain, written by the authors of this article.

Author disclosure: No relevant financial relationships.

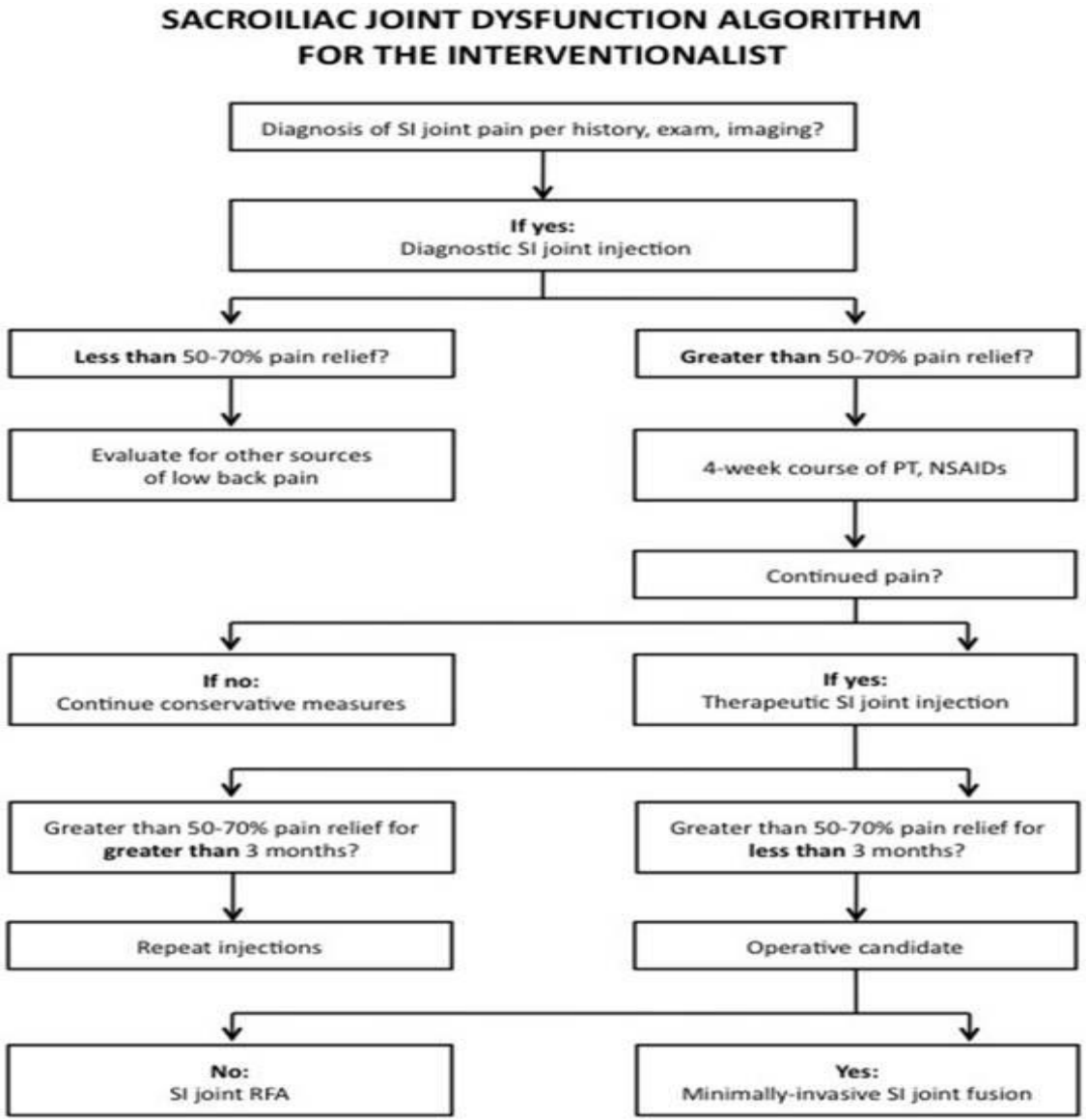
Sacroiliac (SI) joint dysfunction is a common cause of low back pain and accurate diagnosis can be challenging. A complete history and physical examination are critical in differentiating other diagnoses that may have similar signs and symptoms. Positive responses to at least three physical provocation tests suggest SI joint dysfunction, and local anesthetic SI joint blocks can also be useful for confirming the SI joint as the source of pain. Conservative treatment consists of a multimodal program combining patient education, pelvic girdle stabilization with focused stretching, and manipulative therapy. These programs can be performed by physical therapists or clinicians trained in manipulative therapy. Pelvic belts may be beneficial in affected postpartum patients. Patients with symptoms that do not improve with conservative management may benefit from interventional treatment options including intra-articular corticosteroid injections, cooled radiofrequency ablation, or SI joint fusion.

The prevalence of sacroiliac (SI) joint dysfunction is approximately 25% in adult patients with chronic low back pain.[1] Pain can be unilateral or bilateral but usually not midline.[2] Women are more likely to present with SI joint dysfunction than men.[3]

AAFP

American Family Physician 2022

Algorithmic approach to SI joint pain



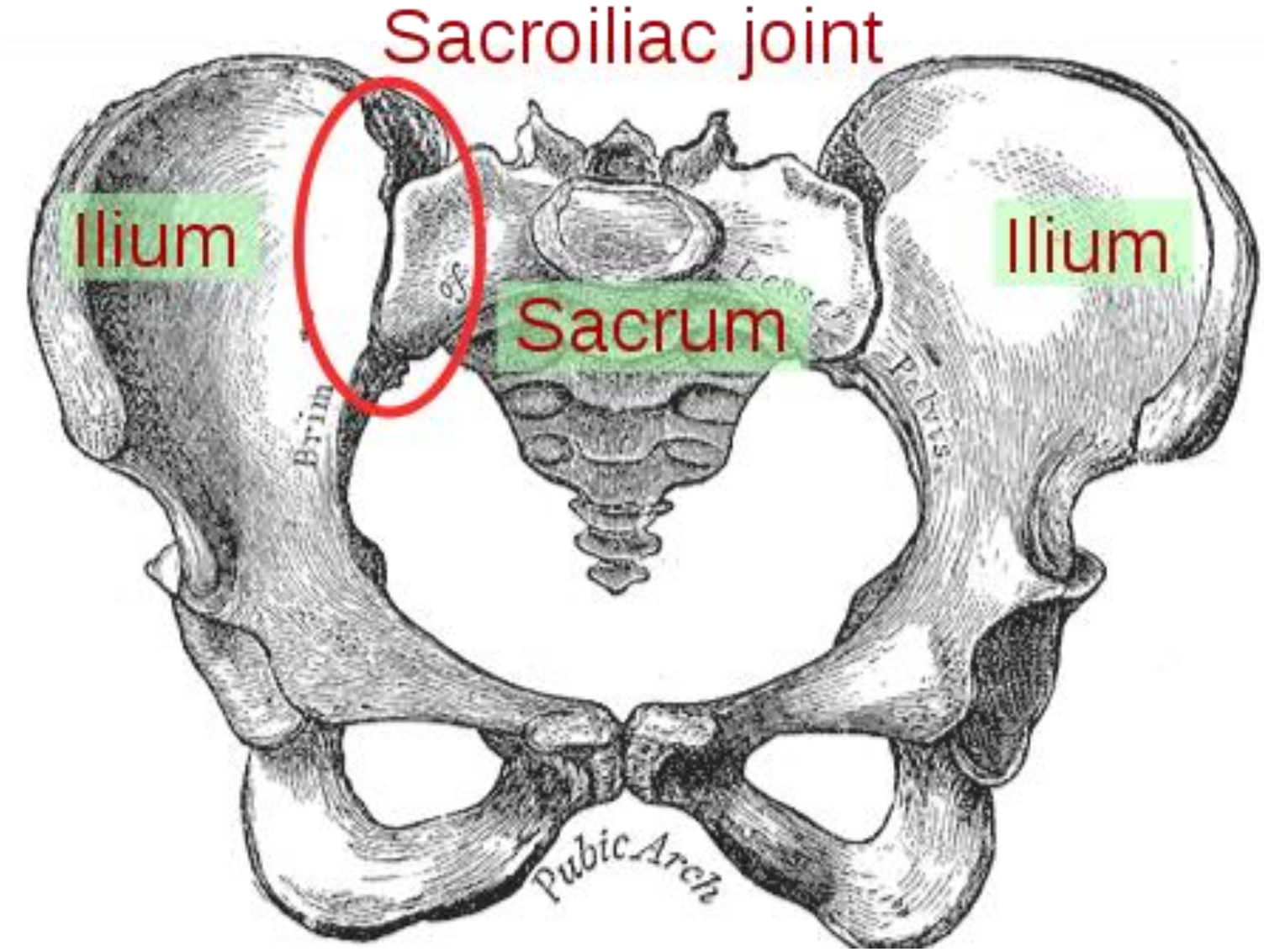
J Pain Res. 2020 Dec 8;13:3337–3348

Key Takeaways

- Sacroiliac joint pain is believed to be an **underdiagnosed and undertreated** element of low back pain.
- **Three positive tests** demonstrated high specificity.
- An SIJ injection whether diagnostic or therapeutic can be considered part of the **early diagnostic and treatment algorithm.**
- Advanced treatment options include RFA and minimally invasive SIJ fusion.

Falowski S, Sayed D, Pope J, Patterson D, Fishman M, Gupta M, Mehta P. A Review and Algorithm in the Diagnosis and Treatment of Sacroiliac Joint Pain. J Pain Res. 2020 Dec 8

Thank You!


Sacroiliac joint
Ilium
Sacrum
Ilium
Brim
of
Pelvis
Pubic Arch