Evidence-Based Treatment of the Sacroiliac Joint

James R. Scifers, DScPT, PT, SCS, LAT, ATC
Moravian University
Doctor of Athletic Training Program

1

Disclosures Information

- I have no relevant financial relationships to disclose.
- I will not discuss off-label use or investigational use in my presentation.

2

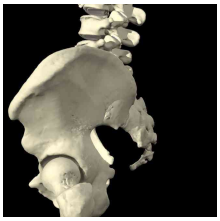
Background

- 15% of population suffers from SIJ pain[1,2]
- Incidence of Sacroiliac Joint (SIJ) dysfunction in patients with chronic, non-radicular low back pain (LBP) is between 10-38%[3-6]
- "No widely accepted guidelines in the literature for the diagnosis and treatment of sacroiliac instability"[7]

3

Dysfunction Classification

- Sacroiliac Joint (SIJ) Dysfunction
  - Any dysfunction of the sacroiliac joint
- Ilio-Sacral (IS) Dysfunction
  - Biomechanical issue involving abnormal Ilium (innominate) movement on sacrum
- Sacro-Iliac (SI) Dysfunction
  - Biomechanical issue involving abnormal sacrum movement on ilium (innominate)



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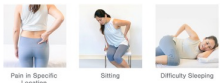
SIJ Dysfunction Key History Findings

- Pain is typically localized to the involved SIJ[9-10]
  - Known as the Fortin Finger Sign
  - Sens - 0.76, Spec = 0.47, +LR = 1.40, -LR = 0.51
- Aggravating activities usually include sitting[9]
  - Sens = 0.03, Spec = 0.90, +LR = 0.30, -LR = 1.07
- Associated buttock pain is present in 94% of SIJ dysfunction[11-12]
  - Sens = 0.80, Spec = 0.14
- Causative factors include LLD, Age, Arthritis, Pregnancy, Trauma, PMHx of spine pathology or surgery[6]

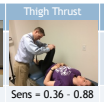
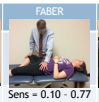
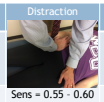
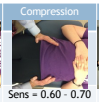
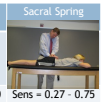


https://sl-bone.com/si-joint-diagnosis/si-joint-pain-symptoms

5

SIJ Dysfunction Special Tests

- Pain provocation tests have limited diagnostic accuracy when used in isolation[9,13-20]
- Diagnostic accuracy of these examination techniques is greatly improved when used in combination[13,21-22]

Gaenslen	Thigh Thrust	FABER	Distraction	Compression	Sacral Spring
					
Sens = 0.21-0.71	Sens = 0.36 - 0.88	Sens = 0.10 - 0.77	Sens = 0.55 - 0.60	Sens = 0.60 - 0.70	Sens = 0.27 - 0.75
Spec = 0.26-0.77	Spec = 0.50 - 1.00	Spec = 0.16 - 1.00	Spec = 0.81 - 1.00	Spec = 0.69 - 1.00	Spec = 0.29 -1.00

6

SIJ Dysfunction Special Tests

- Three of five positive pain provocation tests greatly increase diagnostic accuracy for SIJ dysfunction[21]
  - Gaenslen, Thigh Thrust, Distraction, Compression, Sacral Spring
  - Sens = 0.91, Spec = 0.87, +LR = 4.16, -LR = 0.11
- Two of four positive pain provocation tests greatly increase diagnostic accuracy for SIJ dysfunction[13]
  - Thigh Thrust, Distraction, Compression, Sacral Spring
  - Sens = 0.88, Spec = 0.78, +LR = 4.00, -LR = 0.16
- Three of five positive pain provocation tests greatly increase diagnostic accuracy for SIJ dysfunction[22]
  - Gaenslen, Thigh Thrust, Distraction, Compression, FABER
  - Sens = 0.85, Spec = 0.79, +LR = 4.02, -LR = 0.19

7

Conservative Treatment

- Medication[3-5,24]
- Orthotic Intervention[4,24]
- Manual Therapy[5,7,9,23-24,28]
- Lumbopelvic Stabilization Exercises[7-9,23-24,28]
- Sacroiliac Joint Belts[9,23-24,28]
- Activity Modification[24,28]
  - Relative rest from twisting, single leg activity, and running[24]

Clinical Bottomline: Reduce pain at initial visit, then address underlying causes[24]

8

Orthotic Intervention

- Assess static foot posture
  - Correct excessive STJ pronation / supination
- Assess gait biomechanics
  - Correct excessive STJ pronation / supination
- Assess for leg length discrepancy
  - Normalize leg length bilaterally[24]

https://footmanagement.com/custom-orthotics/

Clinical Bottomline: Orthotic intervention can reduce ground reaction forces on the SIJ and normalize LLD to reduce SIJ pain[4]

9

Manual Therapy: Joint Manipulation

- Kamali studied SI manipulation versus lumbar manipulation in the treatment of patients with SIJ syndrome[29]
  - 16 subjects in each group
  - Group I received a single session of HVLA manipulation of the SIJ
  - Group II received a single session of HVLA manipulation of the SIJ and Lumbar Spine (LS)
  - Outcome measures were pain and function as measured by the Oswestry Disability Index (ODI)
  - Measure were taken at baseline, immediately after treatment, 48 hours after treatment, and one month after treatment
  - Study found statistically significant improvement in pain and function at all three timeframes following treatment with both interventions

Clinical Bottomline: HVLA manipulation of the SIJ and LS are equally effective in treating patients with SIJ pathology[29]

10

CPR for Lumbopelvic Manipulation

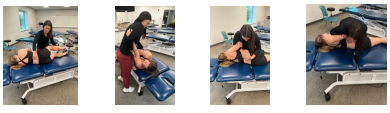
- Outcomes are best for patients who meet 4/5 criteria below[30-31]
- Patients who meet CPR have 92% chance of improving with manipulation[30-31]
- CPR Criteria:
  - 1) Duration of symptoms < 16 days*
  - 2) No symptoms below the knee*
  - 3) FABQ work subscale < 19
  - 4) At least one hypomobile spinal segment
  - 5) Greater than or equal to one hip with > 35 degrees of IR ROM

*Most important criteria for success[31]

11

Lumbar: Side Lying, Grade V, Opening Mobilization

"Million Dollar Roll"



- Treatment Goal Mobilize lumbar spine
- Patient position Side-lying, lower leg is extended, top hip flexed until movement is felt at desired level. Top leg is placed in flexion on locked behind lower legs knee, patient grasps clinician scapula, clinician passively pulls the patient's t-spine into side-bending and rotation
- Clinician position Bottom hand place L1 on side of SP closest to the table, the other arm woven through patients' elbow and placed on the side of SP closer to the ceiling
- Direction of force "Gapping"

Clinical Bottomline: Research shows no difference in pain or disability between thrust and non-thrust treatments in patients who meet the CPR for lumbar manipulation[32]

12

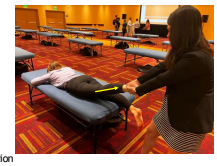
Supine SIJ Manipulation (Non-Specific)- Erhard Roll

- Treatment Goal
  - Mobilize SIJ
- Patient Position
  - Supine hands clasped behind head
- Hand Placement
  - Stabilization hand
    - Contact with patient's scapula
  - Mobilizing hand
    - Placed on the patient's anterior superior iliac spine
- Direction of Force
  - High velocity low amplitude thrust anterior to posterior

13

Prone SIJ Manipulation

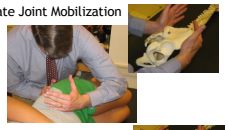
- Treatment Goal
  - Mobilize SIJ
- Patient Position
  - Prone
  - Clinician passively moves the patient into hip extension, adduction, and internal rotation
- Hand Placement
  - Clasped around distal tibia
- Direction of Force
  - High velocity low amplitude thrust at end- range distraction



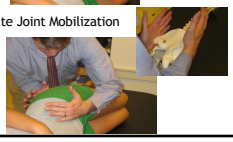
14

Manual Therapy: Joint Mobilization

- Grade I-IV Posterior Innominate Joint Mobilization



- Grade I-IV Anterior Innominate Joint Mobilization



15

Manual Therapy: Joint Mobilization

- Grade I-IV Sacral Mobilization

Clinical Bottomline: Joint mobilizations are best used to treat SI dysfunctions

16

Muscle Energy Techniques

- Muscle Energy Techniques using quadriceps, hamstrings, gluteus maximus

Clinical Bottomline: Muscle Energy Techniques are best used to treat IS dysfunctions

17

Lumbar Stabilization Exercises

- Lumbopelvic Stabilization Exercises[7-9,23-24,28]
  - Transverse Abdominus
  - Piriformis / Gluteus Medius
  - Contralateral Gluteus Maximus[25]

https://www.momsinfitness.com/transverse-abdominis-exercises/

https://yogaoutline.com/pose-library/change-your-perspective-of-pelvic-tilting-how-the-transversus-abdominis-can-help/

https://www.acefitness.org/resources/pros/expert-articles/6938/6-glute-med-exercises/

18

Sacroiliac Joint Belts

- SIJ belt can help alleviate pain, reduce inflammation, and restore function[33-36]
- Evidence suggests that SIJ belts are useful in the treatment of patients suffering from chronic SIJ pathology
- Can be used to treat IS Dysfunction or SI Dysfunction
  - Increase activity of Gluteus Maximus and decrease activity of hamstrings[33] and rectus femoris[34]
  - Health-related quality of life improved[34]
  - Pain reduced[34]
  - Reduce tension in SIJ ligaments, especially the sacrotuberous ligament[35-36]

www.pro-tecathletics.com

Clinical Bottomline: SIJ Belts can be used to decrease pain and inflammation as well as improve function

19

Invasive Treatment

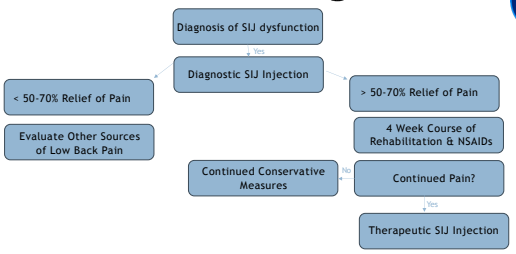
- SIJ Injection[1-6]
  - Limited to moderate evidence to support injection in treating SIJ dysfunction[27]
- Radiofrequency Ablation[1-6]
  - Utilized after injection therapy fails[5]
  - Limited evidence to support RFA in treating SIJ dysfunction[27]
- SIJ Fusion Surgery[2-6]
  - Utilized after injection therapy fails[5]

https://www.montanaadvancedpainandspine.com/si-joint-injections/

Clinical Bottomline: Injection therapy is the first line of invasive treatment in patients with SIJ dysfunction

20

SIJ Intervention Algorithm[5]



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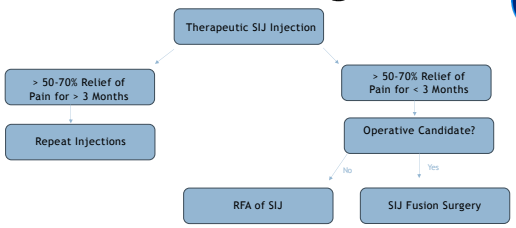
SIJ Intervention Algorithm[5]



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28

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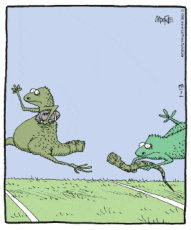
29

Questions?



https://www.gocomics.com/blog/3053/steve-moore-in-the-bleachers

30