Specific treatment for the SI joint

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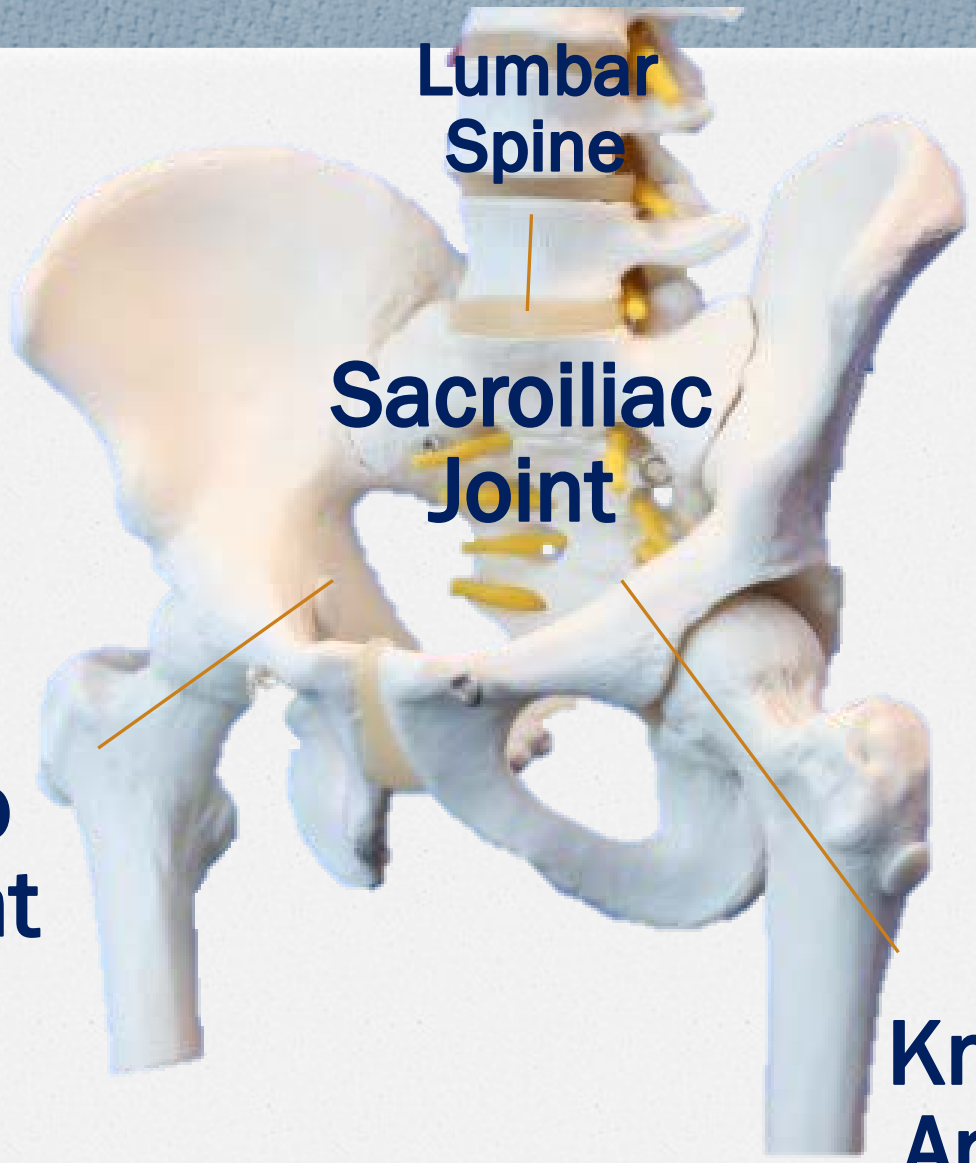
Objectives

- Describe the connection between the low back, pelvis, and lower extremity that can have impairments that promote sacroiliac joint dysfunction
- Demonstrate postural assessments and cluster tests to determine type of sacroiliac dysfunction
- Perform an initial treatment technique for the most common sacroiliac dysfunction and differentiate when to refer to a physical therapist.


Lumbar Spine
Sacroiliac Joint
Hip Joint
Knee/ Ankle

Assessment

- Mechanism of Injury
- Pain Location
- Posture
- Special tests
  - Primary Stress tests
  - Secondary Stress tests
- Kinetic Tests
- Positional Tests
- Sacral positioning
- Palpation

Posture

- Visual Observation/palpation
- Plum Line

Special Tests

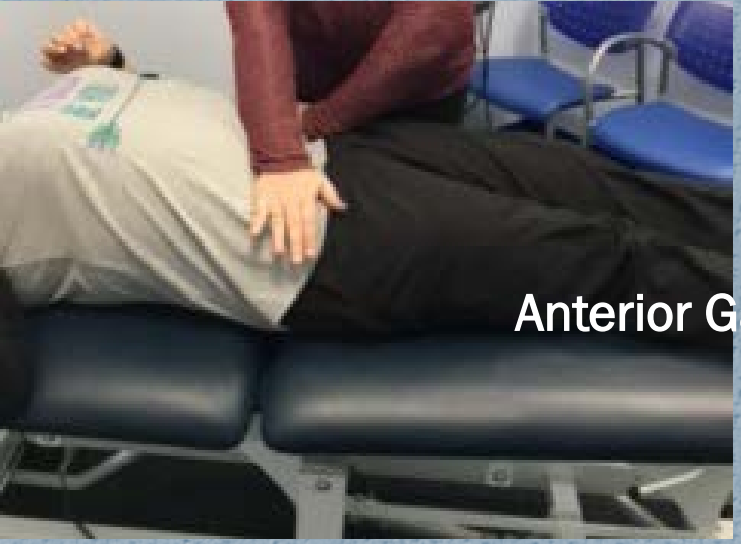
Primary Stress Tests

- Anterior Gapping
- Posterior Gapping
- Rotary Stress

Cluster of tests:
-Fortin's sign
-Primary Stress Tests
*High Sensitivity for SIJ pathology

Secondary Stress Tests

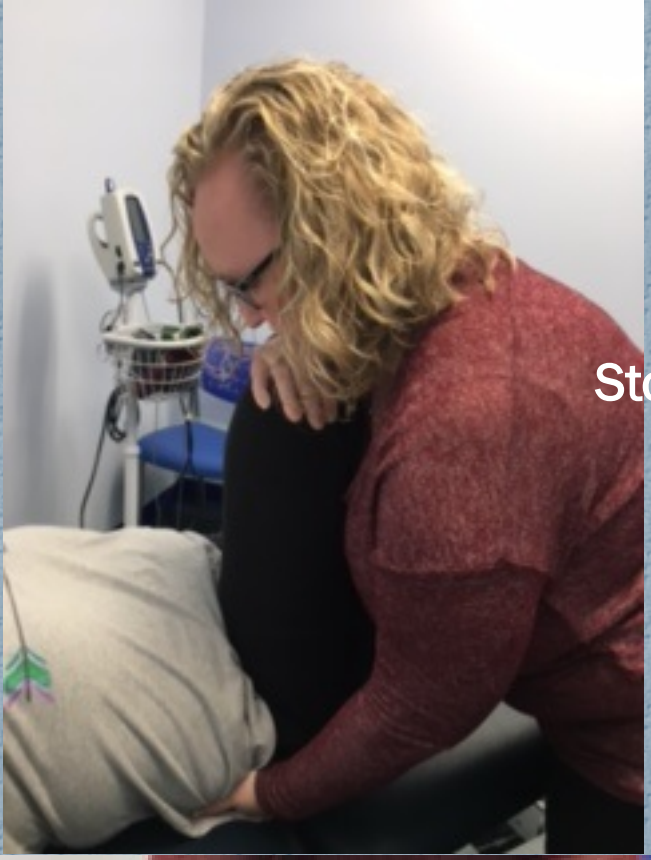
- Stoddart's
- Rotary stress x 20 second hold
- Superoinferior stress
- Sacral corner stress
- Sacrotuberus ligament palpation
- Long dorsal ligament palpation



Anterior Gapping

Posterior Gapping

Rotary Stress

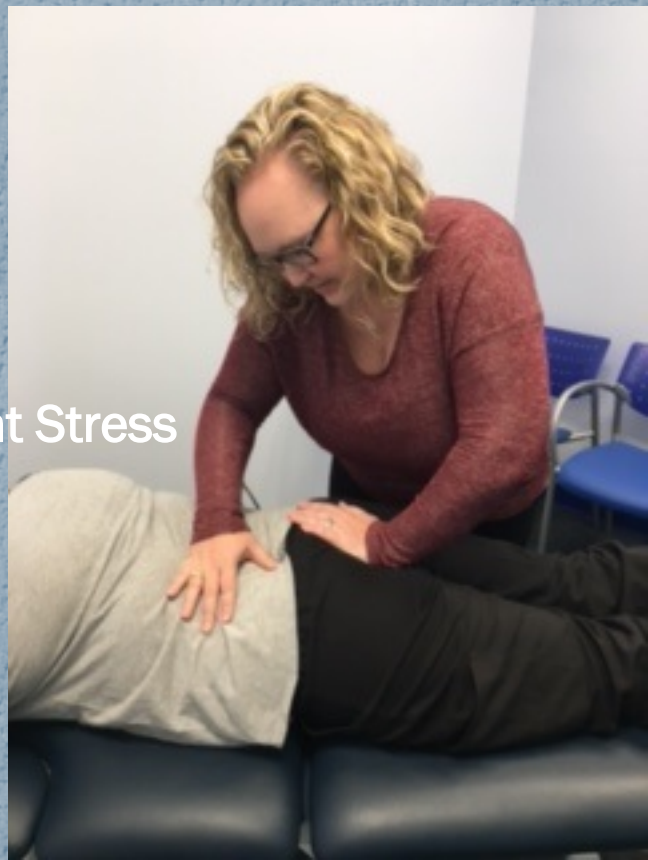


Stoddart's

Sacral Corners

Superoinferior Stress

Long Dorsal Ligament Stress



Kinetic Testing

In Weight bearing	In Non-weight bearing	Result
+	+	Stable subluxation
+	-	Unstable subluxation (DO NOT MANIPULATE)
-	-	Myofascial, pericapsular
-	-	Normal or hypermobile

Stupansky 2013

- Forward Flexion
- Backward Flexion
- Gillet Test
- Seated Flexion Test (Piedallu's Test)

Positional Tests

- Assessment of Landmarks
  - Standing
  - Sitting flexed
  - Supine
  - Prone propped on elbows
- Supine to sit
- FABER
- Active SLR
- Sacral torsion

Standing Extension

Forward Flexion

FABER

Gillet's Test

Flexibility Assessment

Can't forget the…

Pubic Symphysis

- Supported by ligamentous structure
- Impacted by instability
  - Pain is Local, disabling, and aggravated by unilateral weight bearing

Clinical Test: Shearing one pubic cranially and other caudally

Stupansky 2013

Treatment Techniques

Treatment

- Refer to Physician
- Strengthening
- Muscle Energy Techniques
- Joint Mobilization / Manipulation
- Joint Stabilization

Strengthening

- Engage the core
- Dynamic lumbar stabilization progression
- Hip strengthening
- Flexibility
- Functional skills
- Balance control

*Focus on neutral pelvis/reduce drop

*Coordination of core/pelvis strengthening

*Incorporate pelvic floor

Engage the Core

-Add Bridge

-Dynamic Lumbar stabilization progression

-Add abduction resistance at knees

-Progress to planks

Hip strengthening

Flexibility

Piriformis stretch

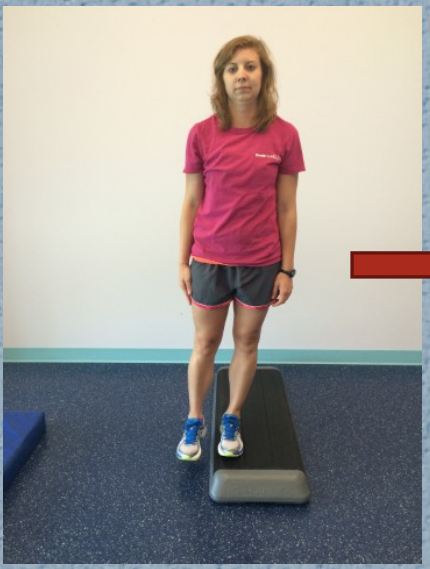
Hamstring stretch

Hip flexor/ iliopsoas stretch

Dynamic warm up

Foam Roller

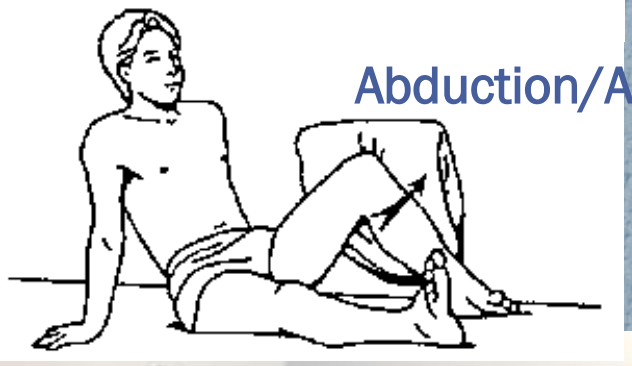
Functional Skills



Balance

Muscle Energy Technique (MET)

- Hip abduction/adduction (belt/ball)
- Hip flexion/extension (push/pull)
- Sacral rotation correction
  - Iliopsoas
  - Piriformis
- Prone hamstring isometric contraction for posterior innominate rotation



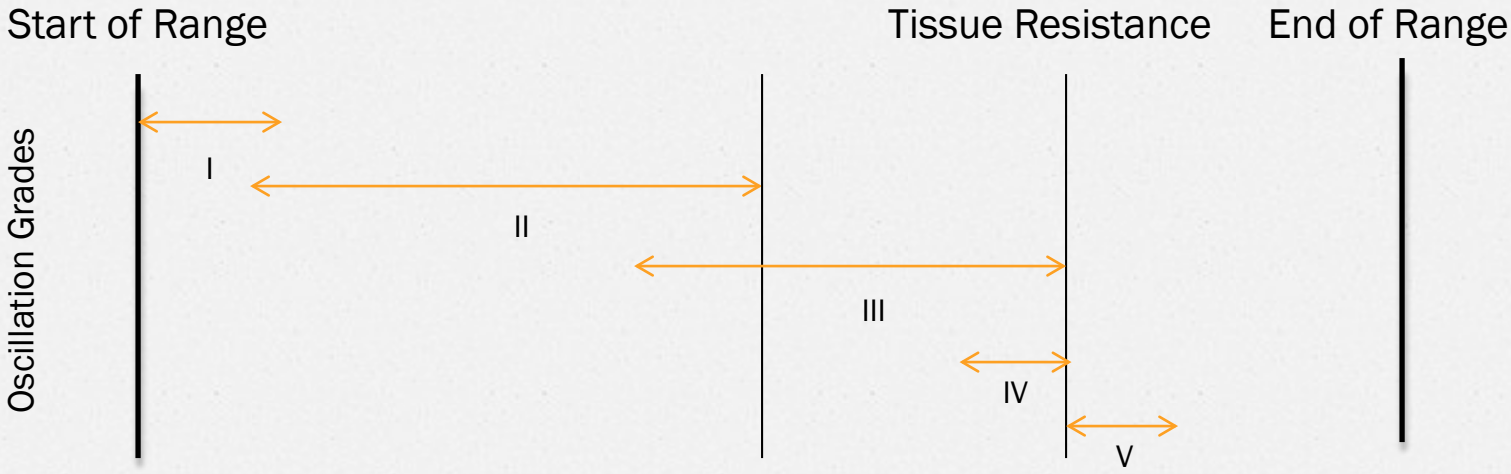
Abduction/Adduction

Push/pull

Piriformis Assist

Iliopsoas Assist

Joint Mobility



- Pelvic Rocking
  - Anterior
  - Posterior
- Sacral mobilizations
- Lumbar mobilization
- HVLT
  - Distraction Manipulation
  - Rotation: Posterior / anterior
  - Lumbar flexion / extension

Mobilization

Anterior Rotation

Posterior Rotation

Lucido 2012
Stupansky 2013

Distraction Manipulation

Lucido 2012
Stupansky 2013

Joint Stabilization

- Force vs Form Closure
  - Force: Stability from muscles supporting pelvis
    - Very vulnerable to shear forces
  - Form: Stability from self locking of pelvis
- Stabilization through exercise

- Stabilization through external support (belt)

Van Wingerden et al (2004)
Arumugam et al (2012)

Other Treatment Techniques

- Shoe Inserts
- Postural Re-education
- Functional Re-training

Case Study

- 16 year old Female with reports of low back pain and hip pain ~ 10 months
- History of (R) L5 Spondylolysis with TLSO wear –at time of eval wearing 8 hours per day
- Radiographic evidence of spondy being stable, but not healing
- Competitive soccer player

Pain

- 3/10, achy, constant
- Central low back
- Worst: 7/10
- Best: 0/10
- Aggravating: sitting on hard chair, stair ascend/descend, prolonged walking
- Relieving: rest, laying down, soft chairs

Impairments

- Tenderness to palpation (L) PSIS and ILA of sacrum, spasm (L) lumbar paraspinals
- Posture:
  - PSIS High on (L)
  - Rounded shoulders
  - Sacral sitting/posterior rotation
- ROM
  - Lumbar: flexion limited 10%, Extension : not tested
  - Hip and knee: WNLS bilaterally
- Flexibility:
  - Popliteal angle -10 degrees bilaterally
- Leg Length: (L) 85cm, (R) 84cm
- Strength: Reduced hip abduction/extension, pain (L) low back/hip with flexion/abduction resistance

Special Tests

- Nutated sacrum
- Primary Stress tests (+)
- Secondary Stress Tests (+)
- Supine to sit: (L) equal to short translation
- Standing flexion: (L) positive
- Gillet's test: (L) Positive, ↓posterior rotation
  - Shuttering in SIJ noted during movement
- Repetitive flexion: no peripheralization
- Slump test: Negative
- Joint play:
  - Hypomobility T8-12, L1-2

Assessment

- (L) sacroiliac joint anterior innominate rotation
- Reduced muscular stability in bilateral SIJ
- (L) hip abduction/extension weakness
- Core weakness

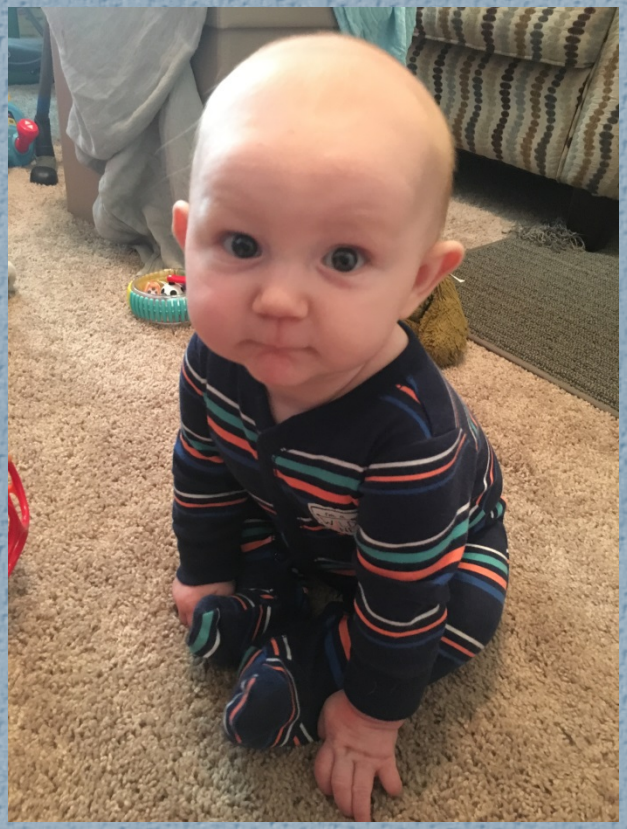
Treatment

- MET
  - Hip abduction/adduction
  - Hip flexor on Right
  - Hip flexion/extension
- Mobilization/Manipulation
  - Posterior innominate mobilizations Grade III-IV
  - Thoracic posterior anterior mobs Grade III-IV
  - T12-L1 grade V with above and below flexion locking
- Strengthening
- Stabilization Belt

Results

- Discharged TLSO without back, hip, or LE pain
- 1 occurrence of mild hypomobility in 6 weeks with ability to self correct and strengthen
- Progressed out of SIJ stabilization belt for all activities: Jog x 10-15 mins, soccer scrimmages

Questions?



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