

Eclectic Approach to Management of SI Joint Dysfunction



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Objectives

- Attendees will be able to assess pelvic ring symmetry and joint spring to determine alignment and areas of dysfunction.
- Attendees will be able to describe commonly seen patterns of sacroiliac joint dysfunction and prioritize components of treatment.
- Attendees will understand how the use of an eclectic manual therapy approach can be used to treat sacroiliac dysfunction in an active individual.

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Low Back Pain – What We Know

- 30% people have never had LBP
- 46% have moderate LBP
- 24% have severe LBP
- Incidence peaks in the 30's and prevalence increases until 60-65 and then gradually declines
- Risk Factors: job demands, cigarette/tobacco use, educational status, stress, anxiety, depression



(Frymoyer, JBJS; Hoy, Clin Rheumatol)

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Low Back Pain – What We Know

- LBP is the second most common cause of disability in US adults
- 149 million days of work per year are lost because of LBP
- Total estimated costs are between \$100 and \$200 billion annually



(Freburger, Arch Intern Med)

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What We Think We Know???

- Low back pain will get better regardless of what we do if you wait long enough
- Biomechanics and anatomy can explain LBP
- Balancing the pelvis is important
 - Symmetry in pelvic landmarks
- Core strengthening helps nearly everyone

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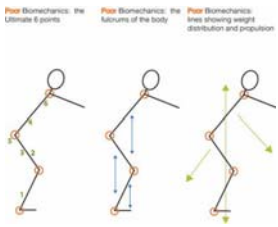
What Evidence Tells Us

- When will my back pain get better?
 - 60% of patients with acute LBP return to work within one month and 90% percent return within three months (Anderson, Spine)
 - At 1-year follow-up, only 21% of individuals with acute LBP and 12% with chronic LBP were pain free (von Korf, Spine)
 - 14% (Acute LBP) and 20% (Chronic LBP) had high levels of disability

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What Evidence Tells Us

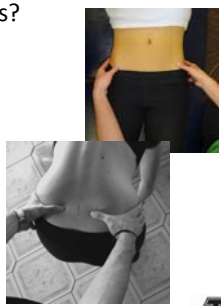
- Biomechanics and anatomy = pathology?
 - The pathomechanical model may not adequately explain LBP (Savage, Eur Spine J)
 - 32% of asymptomatic individuals had 'abnormal' MRI's
 - 47% of symptomatic individuals had no evidence of abnormality



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What Evidence Tells Us

- Evaluation of pelvic landmarks?
 - Motion assessment and static palpation tests have very poor reliability for either SIJ pain or innominate torsions (Cleland, 2011)
 - Interrater Kappa = 0.04 to 0.37
 - Intrarater Kappa = 0.24 to 0.69




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What Evidence Tells Us

- Can I strengthen the core and improve my patient?
 - Core stability programs have been shown to increase strength and function, but no significant difference in pain (Moon, Ann Rehabil Med)
 - Clinical Prediction Rule for stabilization program - predicts 50% improvement in disability if patient met 3 of 4: Age < 40, + Positive prone instability test, movement dysfunction, SLR < 91° (Hicks, Arch Phys Med Rehabil)
 - + LR 4.0 (1.6-10.0)

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But, Evidence Based Practice isn't all about the Literature!



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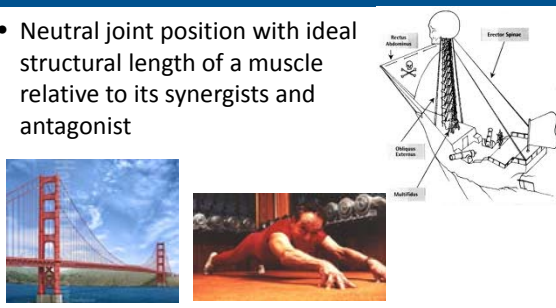
My Lens

- Never sought to be a back/SIJ specialist
- Worked clinically treating knees for many years
- Moved into clinical role and now academia that has forced me to work with clients with LBP
- Took several pieces of people I learned from/courses attended and assembled them:
 - Davies, Sahrman, Butler, Mulligan, Kegerreis, McKenzie, Greenman, Hesch, Falsone, Barnes, Cook, Kiesel

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Tensegrity

- Neutral joint position with ideal structural length of a muscle relative to its synergists and antagonist



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Biopsychosocial Screening

- Not all pain is structural
- Important to screen patient's lifestyle
- I advocate use of a screening form (Hurley, Clin J Pain) and good clinical reasoning
 - The Acute Low Back Pain Screening Questionnaire correctly classified 74% of patients who received more than six treatments and 80% of patients who failed to return to work at the end of treatment

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Evaluation/Rehabilitation Philosophy

- Start with gross movement assessment and move to specific segmental movement
- Balance the pelvis *to restore normal joint springs* not to correct leg length differences
- Correct/treat as you evaluation, but look for the boulder in the river
- **Be precise with your skills and have a system!**
- Empower the patient

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Evaluation/Treatment Algorithm

- Subjective History
 - Important to be thorough
 - Hallmark sign/symptom: difficulty with sit to stand after prolonged period of sitting
 - “Pain relieved by standing” is only question to demonstrate diagnostic utility with +LR of 3.5
- Encourage use of self-report questionnaires, such as the Oswestry Disability Index and the Roland-Morris Disability Questionnaire

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Evaluation/Treatment Algorithm

- Gross Spinal Motion Assessment



Note: quality of motion, amount of motion, degree of rotation, complains of pinching with extension, diminishment or exaggeration of spinal curves

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Evaluation/Treatment Algorithm

- Assess Lumbar Sideglide
 - Spring lumbar spine by pushing on innominate side to side and determining if there is a restriction
 - If restricted, treat with half-round roller under innominate of restricted side for 3-5 minutes (HEP)



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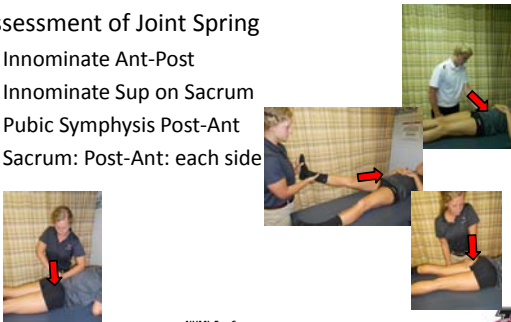
Evaluation/Treatment Algorithm

- Once Lumbar Sideglide is corrected or if normal, then...
- Assess Pelvic Landmarks (ASIS, Pubic Symphysis, PSIS)
 - Most Common Pattern: (Hesch, 2008)
 - L posterior pubic bone
 - R innominate anterior rotation/inflare
 - L innominate outflare
 - Second Most Common Pattern: (Hesch, 2008)
 - B innominate anterior rotation/inflare

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Evaluation/Treatment Algorithm


- Assessment of Joint Spring
 - Innominate Ant-Post
 - Innominate Sup on Sacrum
 - Pubic Symphysis Post-Ant
 - Sacrum: Post-Ant: each side



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Evaluation/Treatment Algorithm

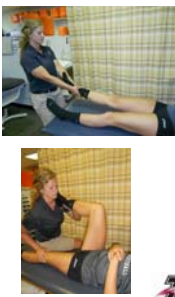
- If...
 - Pelvic ring asymmetry present and decreased spring also present, treat pubic symphysis first
 - If symphysis has an anterior-posterior orientation, use the pelvic shotgun
 - If symphysis has a superior-inferior orientation, use hip adductor muscle energy on high side



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Evaluation/Treatment Algorithm

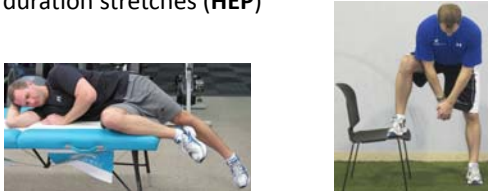
- Reassess/Recheck pelvic ring asymmetries, if still present treat the shear first and torsion second
 - Shear (upslip is most common): treated with leg pull timed with valsalva maneuver
 - Torsion (ant rotation is most common): treat with muscle energy activation of glute max



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Evaluation/Treatment Algorithm


- For a patient that presents with an innominate shear or torsion, treat with low-load, long-duration stretches (HEP)
 - Treatment for Left Upslip
 - Treatment for Right Anterior Rotation



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Evaluation/Treatment Algorithm

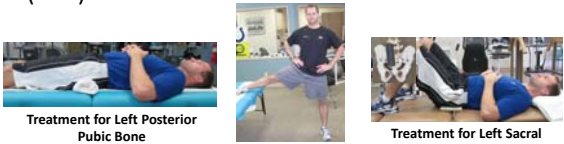
- At this point, pelvic ring should be balanced
 - If not, recheck pubic symphysis
- Reassess/recheck joint springs prior to moving forward
 - Innominate Ant-Post
 - Innominate Sup on Sacrum
 - Pubic Symphysis Post-Ant
 - Sacrum: Post-Ant



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Evaluation/Treatment Algorithm


- If patient presents with decreased joint springs, treat these with low-load, long-duration stretches (HEP)
 - Treatment for Left Posterior Pubic Bone
 - Treatment for Right Superior Pubic Bone
 - Treatment for Left Sacral Rotation



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Evaluation/Treatment Algorithm


- Now that pelvis tensegrity is restored, check the lumbar spine
 - Common to have L5 segment dysfunction or lower lumbar (L2-L5) group dysfunction



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Evaluation/Treatment Algorithm

- Palpate transverse process of lumbar spine in three positions (flexion, neutral, extension)

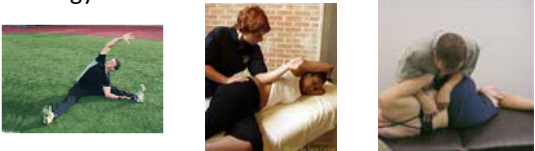


Note: relative position of the vertebra in each position by judging prominence of transverse process, motion restriction, tissue texture changes

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Evaluation/Treatment Algorithm

- Lumbar Group dysfunctions treated with therapeutic exercises, modalities, manual therapy
- Segmental dysfunctions treated with Muscle Energy



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Evaluation/Treatment Algorithm

- At this point, pelvic ring should be balanced and lumbar spine dysfunctions should be corrected
- Now, time to evaluate and address thoracic spine and hip mobility issues
 - Common to have decreased thoracic extension
 - Common to have decreased hip extension

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Evaluation/Treatment Algorithm

- Thoracic Spine mobility
 - Manual Therapy
 - Grade V manipulations – *must be trained, check state practice act!*
 - PA and rotational glides – grade III/IV mobilizations
 - Mulligan rotational MWM's – great to use for decreased rotation
 - Therapeutic Exercise Series
 - Exercise series athletes can be taught to do on their own

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Evaluation/Treatment Algorithm

- Shoulder/Thoracic Spine Mobility (HEP)











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Evaluation/Treatment Algorithm

- Thoracic Spine Mobility (HEP)
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Evaluation/Treatment Algorithm

- Thoracic Spine Mobility (HEP)
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Evaluation/Treatment Algorithm


- Treating decreased hip extension
 - Is this from tight musculature?
 - Is this from a tight capsule?
 - Is this from altered arthrokinematics?



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Evaluation/Treatment Algorithm


- Start with treating capsule/arthrokinematics (In Clinic Treatment)
 - Anterior joint mobilization
 - Apply force at gluteal fold in anterior direction
 - Beware of pain in the low back! (may need to flex the hip)



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Evaluation/Treatment Algorithm

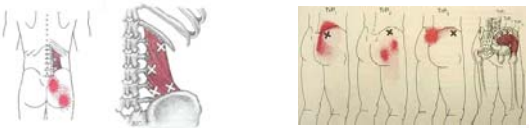
- Release Hip Flexor
 - Find tender spot and hold pressure for approximately 90 seconds
 - Start with lighter pressure and build as patient tolerates
 - Can follow with ART and **gentle** passive stretching (only to R1) (HEP)



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Evaluation/Treatment Algorithm

- Check for trigger points commonly found in quadratus lumborum (particularly with group lumbar spine dysfunction) and treat as needed
- Check for less common trigger points in gluteus medius and treat as needed



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Progression

- No impact activity for 24-48 hours and no unilateral impact activity for 3-5 days
- Typical to treat through this algorithm 2-3 times, if pattern doesn't hold and symptoms decrease significantly after 2-3 treatments - you're missing something
- Once patient can hold pattern 2 days in a row, then start core activation/lumbar stabilization exercises (**HEP**)

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Progression

- Introduce low impact conditioning as symptoms allow
- Refer to the appropriate healthcare provider as necessary

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Summary

- Very few examination or intervention tests/techniques have good evidence behind them
- EBP is only 1/3rd based on research
- Have a system and be precise with your SIJ and lumbar spine evaluations so you have good intrarater reliability
- My treatment is based on restoring normal joint springs/mobility

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Don't Ever Mistake Activity for Achievement!

- John Wooden



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Questions?

Thank you for attending!

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