

Practical Approaches to SI Joint Pain

Presented by Paul Chek

STABILIZATION OF THE SACROILIAC JOINT

Passive stabilization is provided by

- The strong, dense ligaments that surround the joint
- The fibro-cartilaginous interlocking structure of the joint itself
- The movement of the sacrum on the ilium
 - Provides a locking of the joint through mechanical interaction with the ligaments during weight-bearing, which stabilizes the joint and a corresponding unlocking, allowing the leg to swing through.

Active stabilization is provided by the muscles that cross the area - there are several mechanisms in operation here:

- Nutcracker effect
- Lateral system
- Posterior system

CAUSES OF SACROILIAC JOINT PAIN

- Injuries that strain or tear the SI ligaments e.g. a direct fall on the butt, a blow to the side of the pelvis or a weight-lifting accident
- Asymmetrical flexibility -> restricted movement on one side -> too much movement on the opposite side e.g. hamstrings, quadratus lumborum, latissimus dorsi, rectus femoris, sartorius and/or adductors, external oblique
 - Excess movement in one or both SI joints -> inflammation and pain -> shuts down muscles crossing the joint -> more instability and pain. Over time -> degenerative arthritis.
- Multiple pregnancies
- Dysfunction in the lateral system -> Trendelenburg syndrome -> over-reliance on the ligamentous structures -> excessive sheering in the SI joints.
- Dysfunction of the inner unit will reduce or eliminate the nutcracker effect.

SI joint dysfunction can also cause a variety of posture-pain syndromes.

IDENTIFYING SACROILIAC JOINT PAIN

- Diagnostic tests may be beyond the scope of practice of most fitness professionals
- Consider mechanism of injury or activity that led to the onset of the pain.
 - An acute injury such as falling on your backside
 - Any single legged, high-stepping activities can strain the SI joint.
 - Bending over without adequate flexibility in hamstrings and a weak inner unit.

WORKING WITH CLIENTS WITH SI JOINT DYSFUNCTION

The CHEK formula of Flexibility-Stability-Strength-Power should be used with all clients.

“If you are not assessing, you are guessing!”

FLEXIBILITY

A generalized stretching program can be worse than useless, since it may make loose areas less stable and at the same time not correct existing imbalances. You must assess:

- Relative flexibility; is the left the same as the right?
- Posture

In the following assessments, look for more than 10° difference from the normal, and between right and left sides.



Prone knee flexion test for rectus femoris

Normal range of motion = 135°.

Supine knee extension for hamstrings

Normal range of motion = 170°.

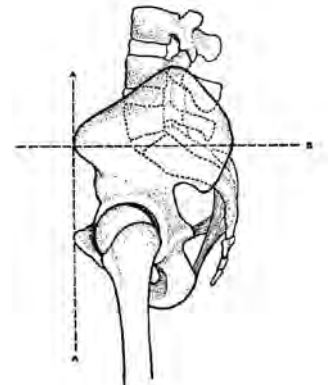


Side bend test for quadratus lumborum and obliques

Normal = fingertip to knee.

ASIS / PSIS test for pelvic tilt

In a female the ASIS should be approximately 1.5cm below the PSIS in the horizontal plane, and 1cm for males. An ASIS higher than this suggests posterior pelvic tilt. Conversely an ASIS lower than this suggests anterior pelvic tilt.



- Address any discrepancies with the appropriate stretches.
- Use a ratio of two sets on the tighter side to one set on the looser side to counteract any right/left imbalances.
- If the looser side is within normal limits, do not stretch the normal side and perform three sets on the tight side.
- Avoid stretching in the Thomas Test position or any single knee-to-chest stretches unless directed by a physical therapist or C.H.E.K Practitioner.

STABILITY

Assess for functional stability in the TVA and the lateral system.

Prone TVA test (modified from Richardson and Jull)

Normal = pressure in the cuff should decrease by at least 10mmHg.



Any pressure drop less than 10 mm Hg will represent the percentage of lost function of the TVA.

Look carefully for the following cheat mechanisms:

- Activating the hip flexors. Identified by increased pressure on the floor with the knees.
- Pressing on the floor with the shoulders to create a cavity under the trunk.
- Rolling to one side of the cuff.
- Flexing or extending the lumbar spine. The spine should always remain in a neutral posture.
- Coming up onto the toes and/or rolling the tail under.

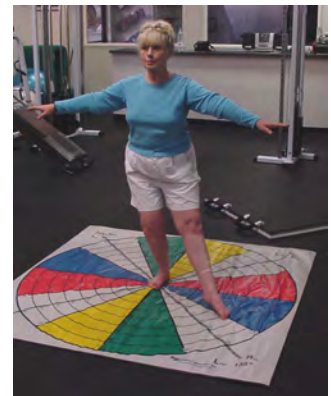
Toe Touch Drill for the Lateral System

Note how far the client can reach in each position.

- Check the hips maintain a good level position
- Standing knee stays in-line with the second toe.

Any rolling in of the knee or dropping out of the hip indicates probable weakness in the lateral system at that particular position.

For both the above, the assessment is also the exercise used to correct any deficits found.



RECOMMENDED EXERCISES

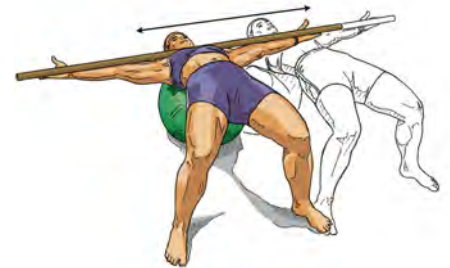
Any exercises that train the lateral system will be useful to both prevent and overcome SI joint dysfunction.

- Develop stability - the time-under-tension (TUT) for each set should be at least 120 seconds.
- Progress to strength training - the TUT should be 60 seconds or less.

The less TUT a client can hold when performing an exercise, the higher the intensity is for that particular exercise.

Supine Lateral Ball Roll

Hold the farthest lateral position for a 10-count (for stability) or a “one-thousand-one” count (for strength). Repeat for 6-10 reps on each side.



Horse Stance Vertical or Horizontal

Hold each side for 10 seconds per rep and work up to 10 reps each side per set.



Alternating Superman on Floor or Swiss ball
10 x 10 seconds per set builds improved postural endurance.

Once optimal levels of stability are achieved, good integration & strengthening exercises include:

- Single arm high cable pull with a narrow split stance
- Single arm Swiss ball bench press
- Sumo deadlifts – these are preferred over regular or Romainan deadlifts as the wider stance positions enhances the nutcracker effect & so helps stabilize SI joint

Sacroiliac belts

EXERCISES TO AVOID

- Split squat
- Lunges any direction
- Conventional deadlift from floor
- Romanian deadlift
- High step-ups and step-downs (low step exercises may be OK)

Also avoid or pay attention to:

- Any exercises with single legged movements (particularly supine) that require lumbo-pelvic stability e.g. many Pilates exercises
- Group exercise step classes
- Cardiovascular training on a Stairmaster, elliptical trainer
- Cycling with the seat too high
- Running or walking on a treadmill or outside

CONCLUSION

Recovering from an SI joint problem can be a long, slow process and the area can be easily irritated causing pain to quickly flare up again.

- Be patient with your clients and don't push them too quickly.
- Always refer any client you suspect of having SI joint dysfunction to a qualified physiotherapist or similar healthcare provider for diagnosis, and then work with them to modify and adapt the client's exercise program as needed.
- Always assess and re-assess your clients at regular intervals and use this information to design good stretching and exercise programs.

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