

# Technique Toolbox

## Analysis and correction of the ilium using the Thompson Technique

### CASE STUDY

A 35-year-old soccer player presents with right posterior pelvic pain. She mentions that the pain has been intermittent for the past two years and is aggravated with activity. Physical examination reveals pain and tenderness palpated along the right sacro-iliac (SI) joint. Static and motion palpation reveal that the ilium has subluxated posterior-inferior (PI). Leg length analysis reveals that patient's right leg is short in the extended position, and appears longer when brought to the flexed position. Neurological and X-ray analyses are unremarkable. The doctor proceeds to adjust the patient in classic side posture manual adjusting, contacting the right PSIS, and thrusting posterior to anterior. Immediately following the treatment, the patient feels slightly better. However, as treatments continue over the next few weeks, the patient begins to complain that her symptoms are worsening. Furthermore, the pain increases immediately following the adjustment.

How is it possible that this chiropractor can be contacting the correct segment, yet missing the problem entirely? In this edition of Technique Toolbox, I will describe the upper and lower axis of the SI joint, and how these independent axes of rotation can alter the movement of the ilium. I will then explain the classic Thompson analysis and corrections for an ilium subluxation.

### THE IMPORTANCE OF DETERMINING AXIS OF ROTATION

J. Clay Thompson created the Thompson Technique in the early 1950s. Prior to becoming a chiropractor, Dr. Thompson was a mechanical engineer. He was the original creator of the drop piece mechanism for chiropractic tables, which all drop tables now use. He began by making a cervical drop piece, the plans for which were later expanded to the entire table. He worked with a table manufacturing company for the actual production. Using his background in engineering, Thompson strove to understand the biomechanics of the spine, and created a technique that incorporated the drop-piece mechanism, in order to create less torque on both the doctor and the patient. But, critical to the Thompson Technique is the leg length analysis and its implications regarding where to find the area of subluxation.

In this case study, the leg length findings display a short right leg in extension, followed by that same right leg appearing long while in the flexed position. This short-to-long phenomenon is known as a Derefield Positive (D+), which indicates that the ilium has subluxated PI. This PI ilium was discovered by the doctor in our case study. However, what our doctor failed to do was to determine which axis of rotation the



Picture 1. Patient presents with a short right leg in extension.



Picture 2. Patient's original short right leg appears long in the flexed position, indicating the presence of a D+, ilium subluxation.



Picture 3: Arm fossa test. A blowout closer to the ASIS indicates a lower boot subluxation, while a blowout closer to the pubic bone indicates an upper boot subluxation.



Picture 4: Classic Thompson correction for a lower boot subluxation. Pelvic piece is activated, affected PSIS is contacted, thrusting PA.



Picture 5: Classic side posture manual adjustment for a lower boot subluxation. PSIS is contacted on affected side, thrusting PA.

ilium has subluxated on.

Since the SI joint is made up of two separate joint spaces, the doctor must verify whether the superior joint or inferior joint is affected. Considering that the SI joint is "L" shaped, or "boot" shaped, Thompson referred to this step as verifying between an upper or lower boot subluxation. It is essential to differentiate between the upper and lower boot subluxations, as each area will exhibit a unique subluxation pattern. As a result, the movement of the ilium will vary considerably, as will the adjustment that must be applied.

When the subluxation occurs in the lower boot, the ilium rotates along that lower axis, resulting in the PSIS subluxating PI. Alternatively, if the ilium rotates along the upper boot, the subluxation is still labelled a PI ilium, because the PSIS still moves slightly PI. However, because the ilium is rotating along the upper axis, it predominately forces the pubic bone anterior, which changes the correction entirely.

### STEP 1: ANALYSIS

The patient presents with a short to long leg length analysis, indicating a PI ilium subluxation, as mentioned previously (see pictures 1 and 2). To verify whether the PI ilium has subluxated along the upper or lower boot, the doctor must perform an arm fossa test, which Clay incorporated from the Sacro-occipital Technique (SOT) (picture 3).

1. Patient is supine. Doctor is standing on the affected side.
2. Instruct the patient to extend their arm to 90 degrees, palm facing caudad.
3. The doctor applies caudad pressure to the patient's arm, which the patient resists in order to maintain his/her arm at 90 degrees.
4. As the doctor applies the caudad pressure, the doctor will palpate the inguinal ligament from lateral to medial, starting from the ASIS to the pubic tubercle.
5. As the doctor is palpating the ligament, there will be a specific point at which the patient will experience a "blowout" or extreme weakness.
6. Once this blowout occurs, the patient will be unable to keep their arm at 90 degrees.
7. If the blowout occurs anywhere from the ASIS to the midway point

of the ligament, it indicates a lower boot subluxation. If the blowout occurs from the midway point to the pubic tubercle, then it is an upper boot subluxation.

8. If the patient does not have a D+, then no blowout will occur, and the patient will be able to sustain equal resistance throughout the entire palpation of the inguinal ligament.

### STEP 2: CORRECTION

In most cases, the arm fossa test would indicate that the ilium has subluxated along the lower boot (axis). This means the PSIS subluxated PI. When this is the case, then the doctor can adjust this subluxation using the Thompson Technique, or he/she could also use a standard side posture manual adjustment, as the ilium biomechanics would be corrected with either correction.

### LOWER BOOT SUBLUXATION CORRECTION

#### Thomson Technique

(Picture 4)

**Patient:** Prone

**Doctor:** On unaffected side

**Table:** Pelvic piece in ready position

**Contact:** Thenar contact on the PSIS

**Stabilize:** Opposite ischial tuberosity

**LOC:** P-A Repeat 3 times.

#### Manual adjustment

(Picture 5)

**Patient:** Side posture, lesion side up

**Doctor:** On affected side

**Contact:** PSIS

**Stabilize:** Patient's arms

**LOC:** P-A

However, in our case study, the patient got worse with this type of adjustment. Therefore, it is unlikely that the lower boot is involved. Had our case study doctor performed the arm fossa test, it would have likely displayed a blowout in the inferior section of the inguinal ligament (from the midway point to the pubic tubercle), indicating an upper boot subluxation of the ilium. By incorrectly adjusting for a lower boot subluxation, as in our case study, we forced the entire ilium into an externally rotated (EX) position, causing a whole new problem. Our case study doctor should have adjusted for an upper boot subluxation.

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Dr. John Minardi is a 2001 graduate of Canadian Memorial Chiropractic College. A Thompson-certified practitioner and instructor, he is the creator of the Thompson Technique Seminar Series and author of *The Complete Thompson Textbook – Minardi Integrated Systems*. In addition to his busy lecture schedule, Dr. Minardi operates a successful private practice in Oakville, Ontario. E-mail: johnminardi@hotmail.com, or visit: www.ThompsonChiropracticTechnique.com.

John Minardi, BHK, DC





Picture 6: Classic Thompson correction for an upper boot subluxation. Pelvic piece is activated, pubic bone is contacted, thrusting SI and slightly AP.

## Technique Toolbox

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### BOOT SUBLUXATION CORRECTION

(Picture 6)

- Patient: Supine.
- Doctor: On involved side.
- Table: Pelvic piece in the ready position.
- Contact: Gentle “knife-edge” on area of blowout.
- Stabilization: Anatomical snuffbox

of contact hand.

- LOC: S-I predominantly, slight A-P to initiate the drop piece. Repeat 3 times.

As you can see, understanding biomechanics can be the difference between adjusting the proper subluxation and causing a greater problem. By using the Thompson analysis and correction, the proper biomechanics were assessed, and the proper adjustment was applied. If you would like to learn more about the Thompson Technique, please go to [www.thompsonchiropractictechnique.com](http://www.thompsonchiropractictechnique.com)

Until next time ... adjust with confidence! •