

*Practical conservative treatment for sacroiliac joint (SIJ) dysfunction/pain in Japan*

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1. Treatment of SIJ dysfunction;  
*The Swing –Ishiguro Method*
2. Treatment for pain at the ligamentous attachment site of the SIJ-related ligaments;  
Extracorporeal shock wave therapy (ESWT)
3. Prevention of recurrence of SIJ dysfunction (1);  
Selective contraction training of the transversus abdominis muscle
4. Prevention of recurrence of SIJ dysfunction (2);  
An innovative trunk muscle exercise device, *RECORE*<sup>®</sup>

**1. Simple Mobilization Technique for SIJ Dysfunction; The Swing –Ishiguro Method**

**Purpose**

To improve malalignment of the SIJ

**Method**

1) Position

The patient is placed in a side lying position with the symptomatic side down, the lower hip and knee joints slightly flexed and the upper knee joint extended and relaxed.

In this posture, the load on the gluteal region is applied to the lower SIJ, and the posterior aspect of the lower (symptomatic) SIJ is slightly opened (Figure 1).

2) Manual manipulation

The practitioner lightly extends the upper hip joint while supporting the sacrum.

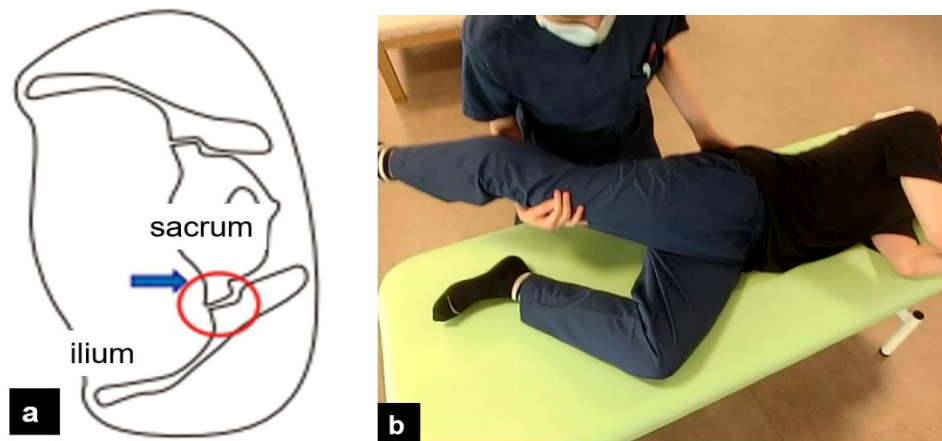


Figure 1. The *Swing –Ishiguro* Method

- a. Loading of the buttock opens the posterior aspect of the lower sacroiliac joint (red circle). Extension of the upper hip joint causes the anteriorly displaced sacrum to slide posteriorly (blue arrow).
- b. Practice. Have the patient relax in a side lying position with the affected side down, and lightly extend the upper hip joint so that it hits the wall. This sensation of hitting the wall is important.

**Number of times;**

- 1) Repeat hip extension, lightly 5-6 times.
- 2) Do the same for the other side 5-6 times.
- 3) At the first intervention, perform two sets on each side.
- 4) On reexamination, only one set on each side should be performed.

The first swing often resolves the joint surface malalignment. It is performed in a relaxed state and cannot be performed as a self-exercise. This method is so simple and safe that it can be performed by the family member of the patient.

**Movie;** Treatment of SIJ dysfunction. The Swing-Ishiguro Method.



1. Treatment of SIJ dysfunction. T

**2. Treatment for pain at the ligamentous attachment site of the SIJ-related ligaments;**

## Extracorporeal shock wave therapy (ESWT)

### **Purpose**

To relieve pain originating from the ligamentous attachments around the SIJ.

### **Methods**

Treatment points (Figure 2)

- 1) The long posterior sacroiliac ligament (LPSL);
- 2) The sacrotuberous ligament (STL)

Lower part of third sacral tuberosity (origin of the STL) and medial superior part of ischial tuberosity (insertion of the STL)

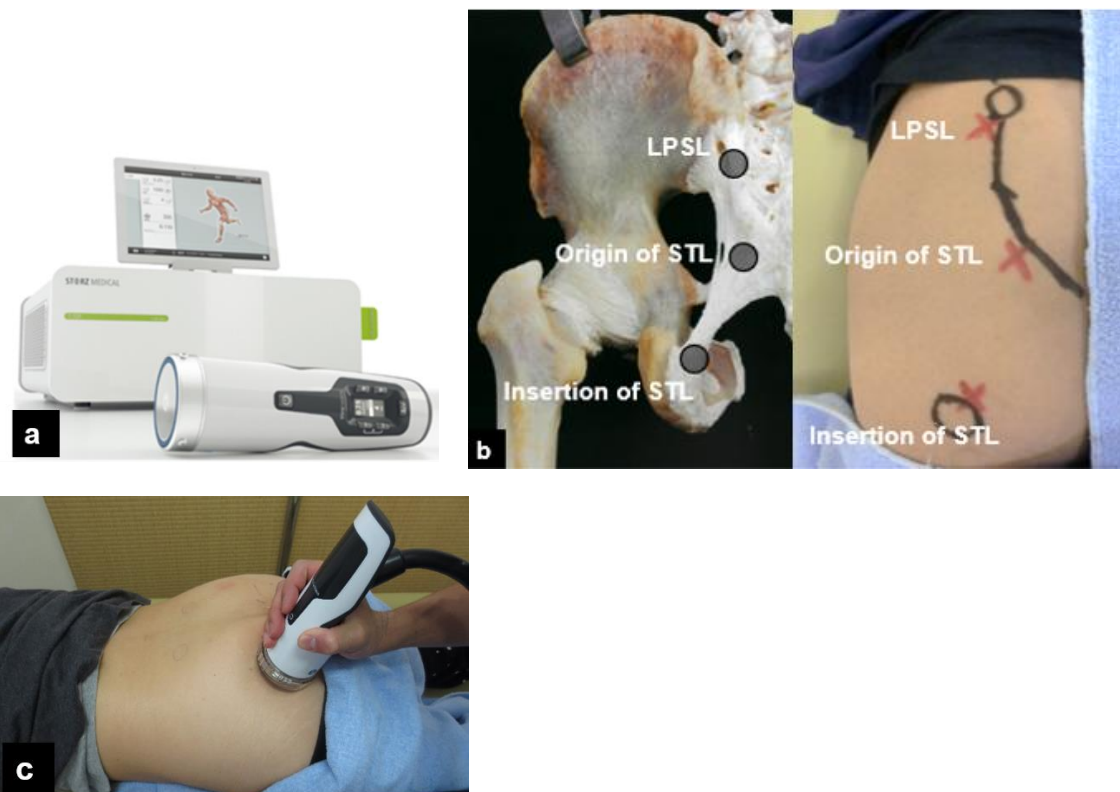


Figure 2: Extracorporeal shock wave therapy (ESWT)

- a. ESWT device
- b. Sacroiliac joint (SIJ)-related ligaments
- c. ESWT to SIJ-related ligament

### **Device settings**

Output force 0.01~0.25mj/mm<sup>2</sup>, speed 240 times/min, number 2500 times.

Two types of shock wave depths, 15 mm and 30 mm, are used depending on the

thickness of the subcutaneous tissue of the patient. Treatment is performed under no anesthesia and at the highest intensity the patient can tolerate.

### **Treatment frequency**

Once a week for the same point.

### **Considerations**

- 1) When the pain decreases progressively, it can be considered that ligamentous attachments around the SIJ are pain origin.
- 2) If pain relief is achieved but recurrence, other conditions can be combined.
- 3) If pain relief is not achieved, other conditions may be present.

### **Applications**

- 1) Perform various types of exercise therapy during pain relief after ESWT.
- 2) Exploring the pain origin in deep layer of the body.

**Movie;** Treatment for pain at the ligament attachment site of the SIJ-related ligaments.

Extracorporeal shock wave therapy (ESWT)



2. Treatment for pain at the ligament

### **3. Prevention of recurrence of SIJ dysfunction (1); Selective contraction of the transversus abdominis muscle**

#### **Purpose**

Prevent recurrence of SIJ dysfunction

#### **Methods**

Confirming selective contraction of the transversus abdominis muscle (TrA) by Draw-in under ultrasound guidance (Figure 3a, 3b).

The conventional method, which is performed by palpating the medial aspect of the anterior superior iliac spine, can be misinterpreted as a contraction of the oblique abdominal muscles (especially the internal oblique muscles) (Figure 3c).



Figure 3. Selective transversus abdominis muscle (TrA) contraction exercises

- a. Draw-in exercise
- b. Confirmation and practice of TrA contraction under ultrasound
- c. Conventional TrA contraction confirmation and practice (easily confused with contraction of oblique abdominal muscles)

**Movie;** Selective contraction training of the transversus abdominis muscle



3. Selective contraction training

### Sequence of contraction exercises

- Phase 1: Preceding contraction of selective TrA in supine crook lying position
- Phase 2: Preceding contraction of selective TrA in sitting position
- Phase 3: Preceding contraction of selective TrA in standing position
- Phase 4: Various movement exercises with selective contraction of the TrA
- Phase 5. Coordinated contraction of abdominal muscles (obliques/rectus abdominis) after the preceding contraction of the selective TrA

#### 4. Innovative trunk muscle exercise devise; *RECORE*<sup>®</sup>

##### **Purpose**

Prevent recurrence of SIJ dysfunction

##### **Method**

Draw-in exercise can be difficult for patients to learn and practice. *RECORE*<sup>®</sup> is useful for these patients (Figure 4a). Because *RECORE*<sup>®</sup> quantifies abdominal trunk muscle strength and provides visual feedback of muscle contraction exercise, it facilitates goal setting and motivation as well as measurement and practice, and can objectively demonstrate the effectiveness of exercise therapy (Figure 4b, 4c).

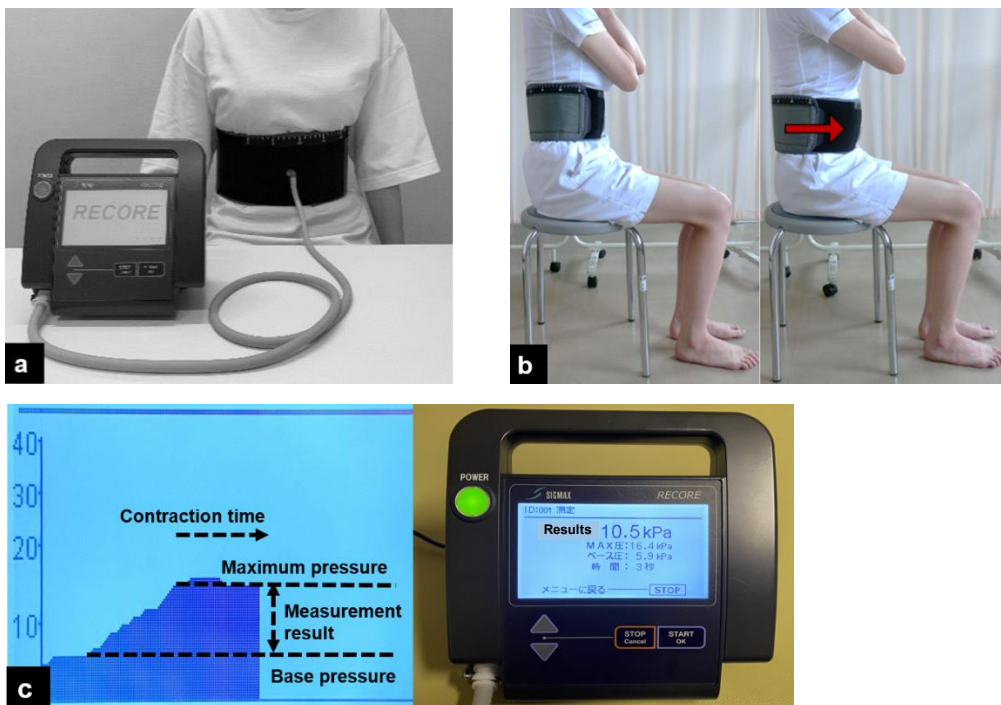


Figure 4. Trunk exercise devise (*RECORE*<sup>®</sup>)

- Monitor (left) and trunk cuff belt (right)
- Trunk exercise in practice (pushing back the air pressure)
- Measurement results

**Movie;** An innovative trunk muscle exercise device.



4. An innovative trunk muscle exe