# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

22 Nov 2026

## Investigating the Effectiveness of Adding Lumbopelvic Core Stability Exercises to Muscle Energy Technique on Pain, Performance and Neurocognitive Parameters in Patients with Sacroiliac Joint Dysfunction

## Protocol summary

**Study aim**
Understanding the therapeutic effects of adding central stability exercises to the muscle energy technique on patients with sacroiliac joint disorders

**Design**
A controlled, parallel-group, single-blind, randomized clinical trial of 30 patients.

**Settings and conduct**
6 treatment sessions are performed in Amir A'lam Hospital Patients are blinded to the intervention and control groups (single blinding).

**Participants/Inclusion and exclusion criteria**
Inclusion criteria: Age range 18-45 years Having literacy (at least a diploma for neuro-cognitive variables) Having a unilateral disorder of AIR and PIR The direction of the disorder side and the painful side are the same Pain below the fifth lumbar vertebra (L5) and around the PSIS Chronic pain that has lasted for at least 3 months Minimum pain intensity based on VAS should be 30 The minimum degree of disability based on ODI should be 30% Body mass index between 18-28 kg/m2 The positivity of 3 out of 5 iliac crest height tests, the level of PSISs, the level of ASISs, Standing Flexion Test and Gillet's Test, the positivity of Long Sitting Test and the positivity of 3 out of 5 tests Distraction Test, Compression Test, Thigh thrust test, sacral thrust test and Gaenslen's test The minimum intensity of the disturbance in performing the Active Straight Leg Raise movement should be 3 Exclusion criteria: Radiculopathy Fractures of the spine and lower limbs Lumbosacral surgery Spinal deformity and scoliosis Anatomical leg length difference with a difference of more than 1 cm pregnancy Rheumatoid arthritis and ankylosing spondylitis Malignancies Infection Cardiovascular disease and pacemakers The subject's unwillingness to cooperate in the beginning or continuation of the sessions

**Intervention groups**
Intervention group: Core stability exercises along with muscle energy technique Control group: Muscle energy technique

**Main outcome variables**
Pain

## General information

**Reason for update**

**Acronym**

**IRCT registration information**
IRCT registration number: **IRCT20240728062565N1**
Registration date: **2024-10-05, 1403/07/14**
Registration timing: **registered_while_recruiting**

Last update: **2024-10-05, 1403/07/14**
Update count: **0**

**Registration date**
2024-10-05, 1403/07/14

**Registrant information**

**Name**
Majid Rajabian

**Name of organization / entity**

**Country**
Iran (Islamic Republic of)

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**Recruitment status**
**Recruitment complete**

**Funding source**

**Expected recruitment start date**
2024-09-22, 1403/07/01

**Expected recruitment end date**

2025-03-20, 1403/12/30

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

Investigating the Effectiveness of Adding Lumbopelvic Core Stability Exercises to Muscle Energy Technique on Pain, Performance and Neurocognitive Parameters in Patients with Sacroiliac Joint Dysfunction

**Public title**

Effects of Core stability exercise in sacroiliac joint dysfunction

**Purpose**

Treatment

**Inclusion/Exclusion criteria**

**Inclusion criteria:**

Age range 18-45 years Having literacy (at least a diploma for neuro-cognitive variables) Having a unilateral disorder of AIR and PIR The direction of the disorder side and the painful side are the same Pain below the fifth lumbar vertebra (L5) and around the PSIS Chronic pain that has lasted for at least 3 months Minimum pain intensity based on VAS should be 30 The minimum degree of disability based on ODI should be 30% Body mass index between 18-28 kg/m2 The positivity of 3 out of 5 iliac crest height tests, the level of PSISs, the level of ASISs, Standing Flexion Test and Gillet's Test, the positivity of Long Sitting Test and the positivity of 3 out of 5 tests Distraction Test, Compression Test, Thigh thrust test, sacral thrust test and Gaenslen's test The minimum intensity of the disturbance in performing the Active Straight Leg Raise movement should be 3

**Exclusion criteria:**

Radiculopathy Fractures of the spine and lower limbs Lumbosacral surgery Spinal deformity and scoliosis Anatomical leg length difference with a difference of more than 1 cm pregnancy Rheumatoid arthritis and ankylosing spondylitis Malignancies Infection Cardiovascular disease and pacemakers The subject's unwillingness to cooperate in the beginning or continuation of the sessions

**Age**

From **18 years** old to **45 years** old

**Gender**

Both

**Phase**

N/A

**Groups that have been masked**

- Participant

**Sample size**

Target sample size: **30**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Simple randomization and quadruple block creation with 1:1 ratio Randomization will be done using randomization.com For the purpose of allocation concealment, sealed and numbered envelopes will be used, which will be provided to the participant by the secretary

**Blinding (investigator's opinion)**

Single blinded

**Blinding description**

Participants are blinded to control or intervention group

**Placebo**

Not used

**Assignment**

Parallel

**Other design features**

## Secondary Ids

empty

## Ethics committees

### 1

**Ethics committee**

**Name of ethics committee**

Research Ethics Committees of School of Nursing and Midwifery & Rehabilitation - Tehran University o

**Street address**

Floor 13, Block A, Ministry of Health & Medical Education Headquarters, Between Zarafashan & South Falamak, Qods Town, Tehran, Iran.

**City**

Tehran

**Province**

Tehran

**Postal code**

1581749811

**Approval date**

2024-07-17, 1403/04/27

**Ethics committee reference number**

IR.TUMS.FNM.REC.1403.053

## Health conditions studied

### 1

**Description of health condition studied**

Sacroiliac joint dysfunction

**ICD-10 code**

S33.6

**ICD-10 code description**

Sprain of sacroiliac joint

## Primary outcomes

### 1

**Description**

Pain: To measure the pain of patients, a 100 mm long ruler known as Visual Analogue Scale will be used, with the word "no pain" at one end and the word "maximum pain" at the other end. In this study, people who have pain of at least 30 will be included in the study.

**Timepoint**
Before the start of the intervention, immediately after the first intervention session, after the 6th intervention session and one month after the last intervention session
**Method of measurement**
Visual Analogue Scale

## Secondary outcomes

### 1

**Description**
Neuro-cognitive variables that include visual and auditory selective reaction time and complex visual and complex auditory choice and prediction skill at low and high speed, which are measured with the Speed Anticipation Reaction Time system.
**Timepoint**
Before the first intervention, immediately after the first internal session, after the 6th intervention session and one month after the last intervention session
**Method of measurement**
Speed Anticipation Reaction Time system

## Intervention groups

### 1

**Description**
Intervention group: Lumbo-pelvic core stability exercises along with muscle energy technique
**Category**
Treatment - Other

### 2

**Description**
Control group: Muscle energy technique
**Category**
Treatment - Other

## Recruitment centers

### 1

**Recruitment center**
**Name of recruitment center**
Amir A'lam Hospital
**Full name of responsible person**
Dr. Mostafa Rahimi
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Saadi Ave.
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## Sponsors / Funding sources

### 1

**Sponsor**
**Name of organization / entity**
Tehran University of Medical Sciences
**Full name of responsible person**
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**Grant name**
**Grant code / Reference number**
**Is the source of funding the same sponsor organization/entity?**
Yes
**Title of funding source**
Tehran University of Medical Sciences
**Proportion provided by this source**
100
**Public or private sector**
Public
**Domestic or foreign origin**
Domestic
**Category of foreign source of funding**
*empty*
**Country of origin**
**Type of organization providing the funding**
Academic

## Person responsible for general inquiries

**Contact**
**Name of organization / entity**
Tehran University of Medical Sciences
**Full name of responsible person**
Dr. Azadeh Shadmehr
**Position**
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MSc Student

**Latest degree**
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## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**
Undecided - It is not yet known if there will be a plan to make this available

**Study Protocol**
Undecided - It is not yet known if there will be a plan to make this available

**Statistical Analysis Plan**
Undecided - It is not yet known if there will be a plan to make this available

**Informed Consent Form**
Undecided - It is not yet known if there will be a plan to make this available

**Clinical Study Report**
Undecided - It is not yet known if there will be a plan to make this available

**Analytic Code**
Undecided - It is not yet known if there will be a plan to make this available

**Data Dictionary**
Undecided - It is not yet known if there will be a plan to make this available