

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Comparative Effects of Proprioceptive Neuromuscular Facilitation and Muscle Energy Technique of Iliopsoas Muscle on Non-Specific Low Back Pain

#### Protocol summary

##### Study aim

Objectives of current study are to compare effects by Muscle Energy Technique and Proprioceptive Neuromuscular Facilitation on Non-specific Low Back Pain to reduce pain, gain range and overcome disability in female with iliopsoas tightness.

##### Design

Randomised, Parallel, single blinded, Randomised Control Trial.

##### Settings and conduct

Out patient Department of Physical therapy unit in Allied Hospital Faisalabad. Patient was blinded of two different treatment protocols given in separate groups.

##### Participants/Inclusion and exclusion criteria

Female, Aged 20-50, having, Non-specific low back pain for past one month with Thomas test positive having Numeric Pain Rating Scale > 3, Hip Extension Range of Motion >10, Oswestry Disability Index Mild disability (5-34) will be included in study. Patients having carcinomas/tumors, spinal trauma history, anatomical deformities, Open wounds, Severe Osteoporosis, Numeric Pain Rating Scale > 8, Hip Extension Range of Motion > 40 (Hypermobility), Oswestry Disability Index score > 34, Past surgical history of thoracic or lower spine, Infections, Acute Inflammations, Unbearable sharp pain at joints, Wear and tear to soft tissues were excluded from the study

##### Intervention groups

two intervention groups, Muscle Energy Technique and Proprioceptive Neuromuscular Facilitation receiving a baseline treatment of Hot pack and Transcutaneous Electrical Nerve Stimulation to Low Back along with their assigned treatment protocol. Muscle Energy Technique group was treated with Post isometric Relaxation technique on iliopsoas muscle to treat tightness of this muscle, bilaterally. Proprioceptive Neuromuscular Facilitation group received Hold-Relax D1 Flexion-

Extension pattern on Iliopsoas muscle bilaterally.

##### Main outcome variables

Pain, Hip extension Range of Motion bilaterally and Oswestry Disability Index

#### General information

##### Reason for update

##### Acronym

PNF & MET

##### IRCT registration information

IRCT registration number: **IRCT20240504061646N1**

Registration date: **2024-06-11, 1403/03/22**

Registration timing: **retrospective**

Last update: **2024-06-11, 1403/03/22**

Update count: **0**

##### Registration date

2024-06-11, 1403/03/22

##### Registrant information

##### Name

Rozina Naz

##### Name of organization / entity

The University of Faisalabad

##### Country

Pakistan

##### Phone

+92 335 7599550

##### Email address

rozinanaz93@gmail.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2024-02-12, 1402/11/23

##### Expected recruitment end date

2024-04-15, 1403/01/27  
**Actual recruitment start date**  
2024-02-15, 1402/11/26  
**Actual recruitment end date**  
2024-04-06, 1403/01/18  
**Trial completion date**  
2024-04-08, 1403/01/20

**Scientific title**

Comparative Effects of Proprioceptive Neuromuscular Facilitation and Muscle Energy Technique of Iliopsoas Muscle on Non-Specific Low Back Pain

**Public title**

Comparing Two Physical Therapy Techniques to Relieve Lower Back Pain

**Purpose**

Treatment

**Inclusion/Exclusion criteria**

**Inclusion criteria:**

Non-specific low back pain Have pain for past one month  
Thomas test positive Numeric Pain Rating Scale > 3 Hip  
Extension Range of Motion >10 Oswestry Disability Index  
Mild disability (5-24)

**Exclusion criteria:**

• Carcinomas or tumors anywhere • Anatomical or chest wall deformities • Pregnant female • Severe Osteoporosis • Numeric Pain Rating Scale > 8 • Hip Extension Range of Motion > 40 (Hypermobility) • Oswestry Disability Index score > 24 • Past surgical history of thoracic or lower spine • Infections, Acute Inflammations • Unbearable sharp pain at joints when performing movements • Wear and tear to soft tissues or hematoma

**Age**

From **20 years** old to **50 years** old

**Gender**

Female

**Phase**

N/A

**Groups that have been masked**

- Participant

**Sample size**

Target sample size: **44**

Actual sample size reached: **40**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Method: Consecutive Random Sampling Unit of Randomization: Individuals Randomization Strata: no stratification needed, population was homogenous, (only female patients, having non-specific Low Back Pain, in Physical Therapy Outpatient Department of Allied Hospital Faisalabad Further division in groups: Tool: online randomization Generator How the Random sequence was built: using Online randomization generator, a list was obtained with 44 sample size dividing equally into two groups, Muscle Energy Technique and Proprioceptive Neuromuscular Facilitation. according to list, very first patients received the assigned treatment ( as written in the list) and so on.

**Blinding (investigator's opinion)**

Single blinded

**Blinding description**

Study was single blinded. participants did not know about two different treatments being given to two separate groups. it was quite easy to carry out and maintain single blindness, as no tool was used for different treatment groups. desired treatments were manual.

**Placebo**

Not used

**Assignment**

Parallel

**Other design features**

**Secondary Ids**

empty

**Ethics committees**

**1**

**Ethics committee**

**Name of ethics committee**

Ethical Committee of The University of Faisalabad

**Street address**

House no. 27E, madina street, near Heaven banglows, Muslim town 1, Faisalabad

**City**

Faisalabad

**Postal code**

38000

**Approval date**

2024-01-01, 1402/10/11

**Ethics committee reference number**

Ethical Committee of The University of Faisalabad

**Health conditions studied**

**1**

**Description of health condition studied**

Non-Specific Low Back Pain (having tightened Iliopsoas)

**ICD-10 code**

M.54.9

**ICD-10 code description**

Low Back Pain

**Primary outcomes**

**1**

**Description**

Primary Outcome Measure: Pain , Hip Extension Range.

**Timepoint**

At baseline (day 1st, Before treatment), Post- treatment day 1st, Post-treatment day 2nd, post-treatment day 3rd.

**Method of measurement**

Numeric Pain Rating Scale for pain level, a scale was used to measure pain. Goniometer to measure Range of motion of hip extension bilaterally.

## 2

### Description

Level of Disability

### Timepoint

pre-treatment day1st, Post-treatment day 3rd

### Method of measurement

Oswestry Disability Index

## Secondary outcomes

### 1

#### Description

Pain, Hip Extension Range

#### Timepoint

pre treatment day 1st, post treatment day 1st, post treatment day 2nd, post treatment day 3rd.

#### Method of measurement

Numeric Pain Rating Scale and Goniometer

## Intervention groups

### 1

#### Description

Intervention group: Muscle Energy Technique (post-isometric Relaxation)

#### Category

Rehabilitation

### 2

#### Description

Intervention group: Proprioceptive Neuromuscular Facilitation (hold-relax D1 Flexion-Extension Pattern)

#### Category

Rehabilitation

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Allied Hospital Faisalabad

##### Full name of responsible person

Dr. Sobia Nawaz

##### Street address

Dr. Tusi Road, Allied Hospital, Faisalabad,

##### City

Faisalabad

##### Postal code

38000

##### Phone

+92 321 7665101

##### Email

sobiaaliawan@gmail.com

##### Web page address

<https://ahfsd.pk/>

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

The University of Faisalabad

##### Full name of responsible person

Rozina Naz

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##### Postal code

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##### Phone

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##### Email

rozinanaz93@gmail.com

##### Web page address

<https://tuf.edu.pk/>

#### Grant name

#### Grant code / Reference number

#### Is the source of funding the same sponsor organization/entity?

Yes

#### Title of funding source

The University of Faisalabad

#### Proportion provided by this source

1

#### Public or private sector

Private

#### 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

The University of Faisalabad

##### Full name of responsible person

Rozina Naz

##### Position

Post Graduate Resident (PGR)

##### Latest degree

Master

##### Other areas of specialty/work

Physiotherapy

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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**

No - There is not a plan to make this available

**Informed Consent Form**

No - There is not a plan to make this available

**Clinical Study Report**

Not applicable

**Analytic Code**

Not applicable

**Data Dictionary**

Not applicable