

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

23 Jun 2026

### Immediate Effects Of Neurodynamic Sliding Versus Muscle Energy Technique On Hamstring Flexibility In Patients With Short Hamstring Syndrome

#### Protocol summary

##### Study aim

to compare the effect of Neurodynamic Sliding versus Muscle Energy Techniques in improving the flexibility of hamstring muscle in subjects with short hamstring syndrome

##### Design

Randomized clinical trial

##### Settings and conduct

out-patient department of physiotherapy at University of Lahore, Chenab campus, Gujrat

##### Participants/Inclusion and exclusion criteria

Inclusion criteria: 1. Age 18 to 35 years. 2. Individuals with limited straight leg raise (SLR) i.e. less than 80 degree when performed actively. 3. Both gender. 4. Controlled matched individuals in reference to weight, Height and Body mass index to some extent. Exclusion criteria: 1. Gymnasts 2. Hamstring injury within the past year. 3. Exceeding 80° in the initial Straight leg raise test. 4. Verbal report of performing regular lower extremity muscle stretching exercises. 5. History of neck trauma (whiplash), neck symptoms, history of fracture in any part of the body. 6. History of growth disorders, history of neurological or orthopedic disorders, diagnosis of herniated disk, low back pain in the last 6 months, and body mass index lower than 20 Kg/cm<sup>2</sup> or higher than 30 Kg/cm<sup>2</sup> 7. Individuals who undergone any flexibility training in last three months 8. Individuals who are on regular use of analgesic medication and muscle relaxant in the last two weeks.

##### Intervention groups

Intervention group A: neurodynamic sliding for hamstring flexibility Intervention group B: muscle energy technique hamstring

##### Main outcome variables

1. Active SLR (less than 80 degree) with Goniometer for range of Motion 2. Numeric Pain Rating Scale for Pain intensity .

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20200623047894N1**

Registration date: **2020-10-12, 1399/07/21**

Registration timing: **prospective**

Last update: **2020-10-12, 1399/07/21**

Update count: **0**

##### Registration date

2020-10-12, 1399/07/21

##### Registrant information

##### Name

Sehrish Ghaffar

##### Name of organization / entity

Ripah international University

##### Country

Pakistan

##### Phone

+92 55 9200525

##### Email address

sehri.malick@gmail.com

##### Recruitment status

**Not yet recruiting**

##### Funding source

##### Expected recruitment start date

2641-11-24, 2020/09/03

##### Expected recruitment end date

2642-04-24, 2021/02/04

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

### Scientific title

Immediate Effects Of Neurodynamic Sliding Versus Muscle Energy Technique On Hamstring Flexibility In Patients With Short Hamstring Syndrome

### Public title

Immediate Effects Of Neurodynamic Sliding Versus Muscle Energy Technique On Hamstring Flexibility In Patients With Short Hamstring Syndrome

### Purpose

Treatment

### Inclusion/Exclusion criteria

#### Inclusion criteria:

Age 18 to 35 years. Individuals with limited Straight leg raising i.e. less than 80 degree when performed actively Both gender. Controlled matched individuals in reference to weight, Height and Body Mass Index to some extent

#### Exclusion criteria:

Gymnasts Hamstring injury within the past year Exceeding 80° in the initial Straight leg raising test. Verbal report of performing regular lower extremity muscle stretching exercises. History of neck trauma (whiplash), neck symptoms, history of fracture in any part of the body. History of growth disorders, history of neurological or orthopedic disorders, diagnosis of herniated disk, low back pain in the last 6 months, and body mass index lower than 20Kg/cm<sup>2</sup> or higher than 30Kg/cm<sup>2</sup> Individuals who undergone any flexibility training in last three months Individuals who are on regular use of analgesic medication and muscle relaxant in the last two weeks.

### Age

From **18 years** old to **35 years** old

### Gender

Both

### Phase

N/A

### Groups that have been masked

*No information*

### Sample size

Target sample size: **24**

### Randomization (investigator's opinion)

Randomized

### Randomization description

Randomization by lottery method. Allocation concealment through sealed envelope. In a bowl we put closed slips of group A and group B. Participants fulfilling inclusion criteria will randomly pick up groups and then allocated through sealed envelopes.

### Blinding (investigator's opinion)

Not blinded

### Blinding description

### Placebo

Not used

### Assignment

Parallel

### Other design features

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Riphah International University

##### Street address

Madar e Millat Road, Quaid e Azam Industrial Estate  
Quaid e Azam Industrial Estate, Lahore, Punjab

##### City

Lahore

##### Postal code

54782

#### Approval date

2641-09-09, 2020/06/18

#### Ethics committee reference number

REC/RCRS/20/2029

## Health conditions studied

### 1

#### Description of health condition studied

Short Hamstring Syndrome : Hamstring syndrome is a condition caused by pressure on this nerve. The nerve may be pinched between the hamstring muscles and the pelvic bone or by the band of tissue that connects the hamstring muscles. This condition can cause pain in the hip and buttock and sometimes numbness down the back of the leg. It may hurt to sit down or stretch the hamstrings.

#### ICD-10 code

#### ICD-10 code description

## Primary outcomes

### 1

#### Description

Range of motion (ROM)

#### Timepoint

Before intervention and after intervention

#### Method of measurement

Active SLR (less than 80 degree) with Goniometer

### 2

#### Description

Numeric pain rating scale (NPRS)

#### Timepoint

before and after intervention

#### Method of measurement

the scale will be shown to participants and they will mark their pain rate according to their pain.

## Secondary outcomes

empty

## Intervention groups

### 1

#### Description

Intervention group 1; Neurodynamic sliding will be used as a treatment to intervention group 1. Participants in the Neurodynamic group will receive sciatic neurodynamic sliders, performed in supine with passive straight leg raising 3 times. Goniometer will be used to measure range of motion . First reading will be taken pre treatment and second reading will be taken post treatment.

#### Category

Rehabilitation

### 2

#### Description

Intervention group 2; Muscle energy technique will be used as a treatment to intervention group 2. The participants will ask to contract a muscle for approximately 5 seconds against the resistant force applied by the physical therapist. The muscle contraction is performed by the participant 3 times in a row in the hopes to stretch the muscle further each time. first reading will be taken pre treatment and after intervention post readings will be measure.

#### Category

Rehabilitation

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Univerisity of Lahore, Chenab Campus

##### Full name of responsible person

Sehrish Ghaffar

##### Street address

university of lahore, adjacent chenab bridge, Gujrat,

##### City

Gujrat

##### Postal code

50700

##### Phone

+92 53 3589155

##### Email

sehri.malick@gmail.com

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Riphah International University, Quaid e azam

industrial state Campus

#### Full name of responsible person

Sehrish Ghaffar

#### Street address

house 354 sector 3 canal view, Pakistan

#### City

Gujranwala

#### Postal code

52250

#### Phone

+92 42 35126110

#### Email

rabiya.noor@riphah.edu.pk

#### Grant name

#### Grant code / Reference number

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

No

#### Title of funding source

Riphah College of Rehabilitation and Allied health Sciences

#### Proportion provided by this source

100

#### 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

Riphah College of Rehabilitation and Allied health Sciences

##### Full name of responsible person

Sehrish Ghaffar

##### Position

Student

##### Latest degree

Bachelor

##### Other areas of specialty/work

Physiotherapy

##### Street address

house 354 sector 3 canal view, Pakistan

##### City

Gujranwala

##### Province

Punjab

##### Postal code

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##### Phone

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##### Email

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## Person responsible for scientific inquiries

### Contact

**Name of organization / entity**

Riphah International University

**Full name of responsible person**

Sehrish Ghaffar

**Position**

Student

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Bachelor

**Other areas of specialty/work**

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## Person responsible for updating data

### Contact

**Name of organization / entity**

Riphah International University

**Full name of responsible person**

Sehrish Ghaffar

**Position**

Student

**Latest degree**

Bachelor

**Other areas of specialty/work**

Physiotherapy

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**Postal code**

52250

**Phone**

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**Email**

sehri.malick@gmail.com

## 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**

Not applicable

**Data Dictionary**

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