

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

25 Jun 2026

### Comparative effects of Mulligan Stretch With Traction Technique And Post Isometric Relaxation On Hamstring Flexibility in Athletes

#### Protocol summary

##### Study aim

The purpose of this study is to compare the effectiveness of mulligan stretch with traction technique and muscle energy technique to increase hip flexion range of motion in athletes with hamstring tightness

##### Design

Randomized, Parallel Group, Single Blinded

##### Settings and conduct

The data was collected from Athletes in Shapes Executive Gym, Gulberg Lahore. Subject/patient were blinded throughout the study about assessment and inclusion in group

##### Participants/Inclusion and exclusion criteria

Inclusion Criteria: Age 18-30 yrs., Both male and female, negative Spring test, Asymptomatic, SLR < 80 Exclusion Criteria Symptoms of lower back pain, Lumbar Straightening, SI Joint Dysfunction, History of hamstring injury, Current musculoskeletal pain in hip region, Any other comorbidity limiting joint Range of motion

##### Intervention groups

DESCRIPTION • Baseline measurements for both groups was done prior to start any intervention. • Intervention was performed for 4 weeks and 2 days within a week. • Midline measurements for both the groups was taken after 2 weeks of intervention. • Final measurement for both the groups was taken after 4 weeks of intervention. o Group A: Conventional hot pad for 10 mins daily and static self-stretching for hamstring flexibility as a home plan is guided to athlete. Muscle energy technique (METs) will be applied by using post isometric relaxation technique. o Group B: Conventional hot pad for 10 mins daily and static self-stretching for hamstring flexibility as a home plan is guided to athlete. Mulligan Stretch with traction Technique was applied

##### Main outcome variables

Hip Flexion ROM, SLR

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20210811052138N1**

Registration date: **2021-09-20, 1400/06/29**

Registration timing: **retrospective**

Last update: **2021-09-20, 1400/06/29**

Update count: **0**

##### Registration date

2021-09-20, 1400/06/29

##### Registrant information

##### Name

Halima Shoukat

##### Name of organization / entity

Riphah international university, Lahore

##### Country

Pakistan

##### Phone

+92 55 4284121

##### Email address

halima.shoukat@yahoo.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2021-04-29, 1400/02/09

##### Expected recruitment end date

2021-06-30, 1400/04/09

##### Actual recruitment start date

2021-04-29, 1400/02/09

##### Actual recruitment end date

2021-06-30, 1400/04/09

##### Trial completion date

2021-07-10, 1400/04/19

**Scientific title**

Comparative effects of Mulligan Stretch With Traction Technique And Post Isometric Relaxation On Hamstring Flexibility in Athletes

**Public title**

Comparative effects of Mulligan Stretch With Traction Technique And Post Isometric Relaxation On Hamstring Flexibility in Athletes

**Purpose**

Treatment

**Inclusion/Exclusion criteria****Inclusion criteria:**

Age 18-30 yrs Both male and female Negative Spring test Asymptomatic SLR < 80

**Exclusion criteria:**

Symptoms of Lower Back Pain Lumbar Straightening SI Joint Dysfunction History of hamstring injury Current musculoskeletal pain in hip region Any other comorbidity limiting joint ROM

**Age**

From **18 years** old to **30 years** old

**Gender**

Both

**Phase**

N/A

**Groups that have been masked**

- Participant

**Sample size**

Target sample size: **32**

Actual sample size reached: **26**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Participants were selected by non-probability convenience sampling from the college setting and were randomly allocated to the two groups via random table method.

**Blinding (investigator's opinion)**

Single blinded

**Blinding description**

This study was a single blinded study. There was a clinician for administering the treatment. The patient/subject was blinded throughout the study.

**Placebo**

Not used

**Assignment**

Parallel

**Other design features****Secondary Ids**

empty

**Ethics committees****1****Ethics committee****Name of ethics committee**

Ethics Committee of Riphah College of Rehabilitation

and Allied Health Sciences

**Street address**

13-14 C Civic center, township near hamdard chowck, lahore

**City**

LAHORE

**Postal code**

54000

**Approval date**

2020-11-27, 1399/09/07

**Ethics committee reference number**

REC/RCR & AHS/21/0419

**Health conditions studied****1****Description of health condition studied**

Hamstring Tightness

**ICD-10 code**

M62.459

**ICD-10 code description**

Contracture of muscle, unspecified thigh

**Primary outcomes****1****Description**

Hip Flexion Range of Motion

**Timepoint**

Baseline - Week 2 - Week 4 POST Treatment

**Method of measurement**

Manual Goniometer

**Secondary outcomes**

empty

**Intervention groups****1****Description**

Intervention group 1: treatment with Post Isometric Muscle Energy Technique applied over the period of 4 weeks.

**Category**

Treatment - Other

**2****Description**

Intervention group 2: Mulligan Stretch with Traction Technique applied over the period of 4 weeks.

**Category**

Treatment - Other

**Recruitment centers**

## 1

### Recruitment center

**Name of recruitment center**

Riphah College of Rehabilitation and Allied Health Sciences

**Full name of responsible person**

Muhammad Hassan

**Street address**

13-14 C Civic center, township, near hamdard chowck, Lahore

**City**

LAHORE

**Postal code**

54000

**Phone**

+92 42 35126110

**Email**

drhassandpt@gmail.com

### Sponsors / Funding sources

## 1

### Sponsor

**Name of organization / entity**

Riphah College of Rehabilitation and Allied Health Sciences

**Full name of responsible person**

Halima Shaukat

**Street address**

13-14 C Civic Center, Township, near Hamdard Chowck, LAHORE

**City**

LAHORE

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**Phone**

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**Email**

halima.shaukat@yahoo.com

**Grant name**

Educational

**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

**Title of funding source**

Riphah College of Rehabilitation and Allied Health Sciences

**Proportion provided by this source**

15

**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 international university, Lahore

**Full name of responsible person**

Muhammad Hassan

**Position**

Student

**Latest degree**

Master

**Other areas of specialty/work**

Physiotherapy

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Lahore

**Province**

Punjab

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### Person responsible for scientific inquiries

**Contact****Name of organization / entity**

Riphah international university, Lahore

**Full name of responsible person**

Halima Shoukat

**Position**

Assistant Professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physiotherapy

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### Person responsible for updating data

**Contact****Name of organization / entity**

Riphah international university, Lahore

**Full name of responsible person**

Muhammad Hassan

**Position**

Student

**Latest degree**

Master

**Other areas of specialty/work**

Physiotherapy

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54000

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**Fax****Email**

drhassandpt@gmail.com

**Sharing plan****Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

**Justification/reason for indecision/not sharing IPD**

There is no further information

**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