

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

21 Jun 2026

### Effectiveness of Mulligan Mobilization with movement versus eccentric concentric exercise on pain, range of motion and functional disability in patients with lateral epicondylitis

#### Protocol summary

##### Study aim

Aim of this study will be to determine the effects of Mulligan Mobilization with movement and concentric eccentric exercises on Pain, ROM, Functional Disability in patients with lateral epicondylitis.

##### Design

Parallel group randomized clinical trial and Randomization will be achieved through computer generated random number table.

##### Settings and conduct

Prime Care Hospital Faisalabad. It will be assessor who will be blinded about the type of intervention.

##### Participants/Inclusion and exclusion criteria

Inclusion Criteria: Age: 25- 55 years, Gender: Both male and female, Patients who have pain for at least 3 month or more duration, Tenderness on palpation over the lateral epicondyle of humerus, Participants with positive cozen test. Exclusion criteria: Dysfunction in the shoulder, neck and thoracic region , Cervical radiculopathy, Corticosteroid injection within 3 months, Participants who had received any conservative treatment in the 4 weeks before entering the study, Previous surgery to the elbow region, Any fracture to the elbow, Soft tissue injury to the elbow region.

##### Intervention groups

Intervention group A will receive Mulligan mobilization with movement after conservative treatment. Conservative treatment will be given in form of ultrasound and Tens followed by Mobilization technique for total 36 times, 12 repetitions with short period of rest. Duration of session will be 35 to 45 mints, 3 times a week ,12 sessions over 4 weeks. Intervention group B will receive eccentric-concentric exercise after the conservative treatment. Conservative treatment will be given in form of ultrasound and followed by Eccentric-concentric exercise for 3 set of 15 repetitions with rest period of 1 min in between sets. Duration of session will

be 35 to 45 mints, 3 times a week ,12 sessions over 4 weeks

##### Main outcome variables

Pain Range of motion Functional disability

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20230216057434N1**

Registration date: **2023-03-12, 1401/12/21**

Registration timing: **registered\_while\_recruiting**

Last update: **2023-03-12, 1401/12/21**

Update count: **0**

##### Registration date

2023-03-12, 1401/12/21

##### Registrant information

##### Name

Zainab Sheraz

##### Name of organization / entity

Riphah International University, Faisalabad

##### Country

Pakistan

##### Phone

+92 301 7070941

##### Email address

zainab.48@hotmail.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2023-03-05, 1401/12/14

##### Expected recruitment end date

2023-05-01, 1402/02/11

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

Effectiveness of Mulligan Mobilization with movement versus eccentric concentric exercise on pain, range of motion and functional disability in patients with lateral epicondylitis

**Public title**

Comparison of two manual techniques in elbow

**Purpose**

Treatment

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

Age: 25- 55 years Gender: Both gender Tenderness on palpation over the lateral epicondyle of humerus Patients has pain for at least 3 month or more duration Patients with positive cozen test

**Exclusion criteria:**

Dysfunction in shoulder, neck and thoracic region Cervical radiculopathy Corticosteroid injection within 3 months Patients who had received any conservative treatment in the last 4 weeks before enring in the study. Recent surgery of elbow joint Fracture Soft tissue injury in elbow region

**Age**

From **25 years** old to **55 years** old

**Gender**

Both

**Phase**

N/A

**Groups that have been masked**

- Outcome assessor

**Sample size**

Target sample size: **94**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Randomization will be done through a computer software "Random allocation". The total sample size will be entered with requirement to be allocated in two groups. An automated randomization list will be achieved with attrition rate included.

**Blinding (investigator's opinion)**

Single blinded

**Blinding description**

Blinding will be done on part of outcome assessor who will be an experienced therapist. Patients will be assessed by him at the end of treatment session. He will be blinded about the type of intervention patient will received

**Placebo**

Not used

**Assignment**

Parallel

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

empty

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

Ethics committee of Riphah International University  
Faisalabad

**Street address**

Riphah International University, Faisalabad

**City**

Faisalabad

**Postal code**

38000

**Approval date**

2023-01-26, 1401/11/06

**Ethics committee reference number**

RCRAHS/REC/23/03

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

Lateral Epicondylitis

**ICD-10 code**

M77.10

**ICD-10 code description**

Lateral epicondylitis, unspecified elbow

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

Pain

**Timepoint**

Assessment will be performed at 0 week(baseline) and at completion of 4 weeks treatment.

**Method of measurement**

Numeric Pain rating scale

**Secondary outcomes****1****Description**

Range of motion at elbow joint

**Timepoint**

Assessment will be performed at 0 week(baseline) and at completion of 4 weeks treatment.

**Method of measurement**

Goniometer

**2****Description**

Functional disability

## Timepoint

Assessment will be performed at 0 week(baseline) and at completion of 4 weeks treatment.

## Method of measurement

Patient Rated Tennis Elbow Scale(PRTEE)

## Intervention groups

### 1

#### Description

Intervention group A (Mulligan Mobilization with movement) 47 patients in group A will receive Mulligan Mobilization with Movement after conservative treatment. Conservative treatment will be applied in form of ultrasound and tens. Physiotherapist will apply ultrasound for 8 minutes in continuous mode in circular manner on lateral condyle of humerus with frequency of 1MHz followed by application of tens. 1 pad of tens will be placed on above lateral condyle of humerus and other on below the lateral condyle of humerus for 15 minutes. Patient will be in supine position with elbow in full extension and forearm in pronation with stabilization will be provided by therapist at distal part of the arm while therapist will apply Mulligan Mobilization with movement technique by adding lateral glide at elbow by using the belt. Patient will be instructed to make a fist and open the fist while therapist will maintain glide by belt during the movement. Mobilization technique will be carried for total 36 times. After 12 repetitions, a short rest period will be given for 15 seconds. Each session will last for 35-45 minutes. The session will repeat three times a week, 12 sessions over 4 weeks

#### Category

Treatment - Other

### 2

#### Description

Intervention group B (Eccentric concentric exercise) 47 patients in Group B will receive eccentric concentric exercise after the conservative treatment. Conservative treatment will be applied in form of ultrasound and tens. Physiotherapist will apply ultrasound for 8 minutes in continuous mode in circular manner on lateral condyle of humerus with frequency of 1MHz followed by application of tens. 1 pad of tens will be placed on above lateral condyle of humerus and other on below the lateral condyle of humerus for 15 minutes. For eccentric concentric exercises patients will be in sitting position with elbow flexed to 90 degree and forearm in pronation with hand over the edge of the table. Therapist will instruct the patient to hold 1 lb. weight in hand while keeping the forearm supported at the armrest of chair or on their knee so that they can move their hand freely. Patient will be instructed to raise or lift wrist up towards the ceiling slowly for concentric contraction and lower the wrist slowly toward the floor for eccentric contraction. Patient will be instructed to gradually increase the weight up to 100 gm on weekly basis. Each session will last for 35-45 minutes. The session will repeat three times a week, 12 sessions over 4 weeks

## Category

Treatment - Other

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Prime Care Hospital, Faisalabad, Pakistan

##### Full name of responsible person

Sumbul Rasheed

##### Street address

Ahmed Steet, Saeed Colony, Faisalabad

##### City

Faisalabad

##### Postal code

38000

##### Phone

+92 303 6267443

##### Email

sumbal.fcepl@gmail.com

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Self Funded

##### Full name of responsible person

Zainab Sheraz

##### Street address

house no. 32, street no. 2, Rehman Town, adjacent Shahzad Colony, Satyana Road, Faisalabad

##### City

Faisalabad

##### Postal code

38000

##### Phone

+92 335 6600141

##### Email

zainab.48@hotmail.com

##### Web page address

<https://www.riphahfsd.edu.pk/>

##### Grant name

N/A

##### Grant code / Reference number

N/A

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

No

##### Title of funding source

N/A

##### 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**  
Persons

38000  
**Phone**  
+92 335 6600141  
**Email**  
zainab.48@hotmail.com

## Person responsible for general inquiries

### Contact

**Name of organization / entity**  
Riphah International University, Faisalabad  
**Full name of responsible person**  
Zainab Sheraz  
**Position**  
Senior Lecturer  
**Latest degree**  
Master  
**Other areas of specialty/work**  
Physiotherapy  
**Street address**  
house no. 32, street no. 2, Rehman Town, adjacent  
Shahzad Colony, Satyana Road, Faisalabad  
**City**  
Faisalabad  
**Province**  
Punjab  
**Postal code**  
38000  
**Phone**  
+92 335 6600141  
**Email**  
zainab.48@hotmail.com

## Person responsible for scientific inquiries

### Contact

**Name of organization / entity**  
Riphah International University, Faisalabad  
**Full name of responsible person**  
Zainab Sheraz  
**Position**  
Senior Lecturer  
**Latest degree**  
Master  
**Other areas of specialty/work**  
Physiotherapy  
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## Person responsible for updating data

### Contact

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Riphah International University, Faisalabad  
**Full name of responsible person**  
Zainab Sheraz  
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## 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

Real patient involved

### 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

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

No - There is not a plan to make this available