

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Effects of Shock Absorbing Insoles with and without Periosteal Pecking on Pain and Functional Mobility in Athletes with Medial Tibial Stress Syndrome

#### Protocol summary

##### Study aim

To determine the effect of periosteal pecking and shock absorbing insoles to improve pain and functional mobility in athletes with Medial Tibial Stress Syndrome.

##### Design

This study will be a Randomized Controlled Trial

##### Settings and conduct

Pakistan Sports Board

##### Participants/Inclusion and exclusion criteria

Inclusion Criteria • Pain along the posteromedial border of tibia that triggers with activity and relieves with rest • Positive single leg Hop test • Pain on resisted plantar flexion • local Tenderness < 5cm at distal postero medial border of tibia Exclusion Criteria • Athletes with Tibial stress fracture • Compartment syndrome • Popliteal artery entrapment

##### Intervention groups

Group A: 18 participants Participants will be given shock absorbing insoles and Kinesthetic awareness exercises will be used as baseline treatment and will be given to all participants irrespective of their group allocation. In addition Group A participants will receive periosteal pecking i.e. using dry needling technique, Pre, intermediate and post measures for NPRS, HOP Test and FMS will be taken. 3 follow ups for this session will be done on 0, 3rd and 6th week respectively. Group B: 18 Participants after allocation to Group B will be given shock absorbing insoles of a standard height of 1.5 cm for a period of 6 weeks and pre , intermediate and post reading of measuring tools NPRS, HOP Test and FMS will be taken on 0, 3rd and 6th week respectively.

##### Main outcome variables

Functional movement screening scale NPRS Hop test (single Hop, Triple Hop, Cross over Hop, 6 meter timed Hop

#### General information

##### Reason for update

##### Acronym

MTSS

##### IRCT registration information

IRCT registration number: **IRCT20231103059934N1**

Registration date: **2023-11-12, 1402/08/21**

Registration timing: **prospective**

Last update: **2023-11-12, 1402/08/21**

Update count: **0**

##### Registration date

2023-11-12, 1402/08/21

##### Registrant information

##### Name

Laila Niaz khan

##### Name of organization / entity

Riphah International University, Lahore, Pakistan

##### Country

Pakistan

##### Phone

+92 345 1055934

##### Email address

lailaniaz321@gmail.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2023-12-04, 1402/09/13

##### Expected recruitment end date

2024-01-21, 1402/11/01

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

**Trial completion date**

empty

**Scientific title**

Effects of Shock Absorbing Insoles with and without Periosteal Pecking on Pain and Functional Mobility in Athletes with Medial Tibial Stress Syndrome

**Public title**

Effects of Periosteal pecking and shock absorbing insoles in Medial Tibial Stress syndrome in Athletes

**Purpose**

Treatment

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

Pain along the posteromedial border of tibia that triggers with activity and relieves with rest Tenderness at Tendo Achilles Positive single leg Hop test Positive 6 meters timed run Test local Tenderness < 5cm at distal postero medial border of tibia Pain on resisted plantar flexion

**Exclusion criteria:**

Compartment syndrome Popliteal artery entrapment Bilateral lower limb injuries Lumbar radiculopathy Athletes with Tibial stress fracture

**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: **36**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Sealed Envelop

**Blinding (investigator's opinion)**

Not blinded

**Blinding description****Placebo**

Used

**Assignment**

Parallel

**Other design features**

This study will be a Randomized Controlled Trial

**Secondary Ids**

empty

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

Research & Ethics Committee

**Street address**

Riphah International University, Gullberg Campus, Lahore, Pakistan

**City**

Lahore

**Postal code**

54810

**Approval date**

2023-08-03, 1402/05/12

**Ethics committee reference number**

REC/RCR&AHS/23/04/0450

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

Medial Tibial Stress syndrome

**ICD-10 code**

M70.8

**ICD-10 code description**

Tibialis Posterior tendon overuse injury

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

Functional movement screening scale

**Timepoint**

Before intervention and 6th week after intervention

**Method of measurement**

Functional Movement Screening Scale

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

pain Reduction

**Timepoint**

Before intervention and 6th week after intervention

**Method of measurement**

Numerical Pain Rating Scale

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

Intervention Group 1 : 18 participants will be randomly allocated to Group A. Participants will be given shock absorbing insoles and Kinesthetic awareness exercises will be used as baseline treatment and will be given to all participants irrespective of their group allocation. In addition Group A participants will receive periosteal pecking i.e. using dry needling technique, in which dry needle of 30mm will be inserted at tendon osseous (T-O) junction and when it comes into contact with periosteum of tibia at distal posteromedial border, needle will be removed after 20 taps , it will promote growth and repair by stimulating inflammatory activity. Pre and post measures for NPRS, HOP Test and FMS will be taken. 3 follow ups for this session will be done on 0, and 6th

week respectively.

**Category**

Treatment - Other

**2****Description**

Control Group: 18 Participants after allocation to Group B will be given shock absorbing insoles of a standard height of 1.5 cm for a period of 6 weeks and pre and post reading of measuring tools NPRS, HOP Test and FMS will be taken on 0, and 6th week respectively. Kinesthetic awareness exercises will be used as baseline treatment and will be given to all participants irrespective of their group allocation.

**Category**

Treatment - Other

**Recruitment centers****1****Recruitment center****Name of recruitment center**

Pakistan Sports Board Lahore

**Full name of responsible person**

Laila Niaz Khan

**Street address**

Pakistan Sports Board, Qazafi Stadium, Lahore

**City**

Lahore

**Postal code**

54810

**Phone**

+92 42 99232074

**Fax****Email**

infopsb@sports.gov.pk

**Web page address****Sponsors / Funding sources****1****Sponsor****Name of organization / entity**

Riphah International University, Lahore

**Full name of responsible person**

Dr. Muhammad Hashim

**Street address**

Riphah International University, Gulberg III Campus,  
Lahore 25 Raza Saeed Rd, Bhabra Block M Gulberg III,  
Lahore, Punjab 25-M Block, Lahore,

**City**

Lahore

**Postal code**

54660

**Phone**

+92 323 4071564

**Email**

Muhammad.hashim@riphah.edu.pk

**Web page address**

<https://www.riphah.edu.pk/lahore/>

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

Yes

**Title of funding source**

Riphah International University, Lahore

**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 International University, Lahore

**Full name of responsible person**

Laila Niaz Khan

**Position**

Student

**Latest degree**

Medical doctor

**Other areas of specialty/work**

Physiotherapy

**Street address**

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**Latest degree**

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**Other areas of specialty/work**

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**Position**

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**Latest degree**

Medical doctor

**Other areas of specialty/work**

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**Phone**

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**Email**

lailaniaz321@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**

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