Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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 Atletes

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

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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,

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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

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Person responsible for scientific inquiries

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Position

Student

Latest degree

Medical doctor

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
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