

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effects of Alfredson and Silbernagel exercise therapy on pain, range of motion, and muscle performance among athletes with Achilles tendinopathy.

Protocol summary

Study aim

To determine the effects of Alfredson and Silbernagel exercise therapy on pain, range of motion, and muscle performance among athletes with Achilles tendinopathy.

Design

The study design will be a Randomized Clinical Trial (RCT).

Settings and conduct

The study will be conducted in • Pakistan Sports Board, • Rangers Hospital • CMH Lahore Study duration= 12 months

Participants/Inclusion and exclusion criteria

Inclusion Criteria: • Both male and female athletes • Age between 18 to 30 years • Duration of playing at least 1 to 2 years • Athletes with chronic Achilles tendinopathy for more than 3 months • Participating in sports involving Achilles tendon loading (i.e., sports characterized by walking, running, and/or jumping) Exclusion Criteria: • Corticosteroid injections in the region of the Achilles tendon in the previous 12 months • Any neurological disease • History of fracture • Players having any comorbidities • Athletes have systemic diseases that can hinder training • Any surgery in the lower limb region in the past two years

Intervention groups

Group A (Alfredson Protocol): Participants will follow a 12-week eccentric exercise program, performed twice daily. It includes 4 exercises targeting Achilles tendinopathy: - Straight-knee eccentric heel drops - Bent-knee eccentric heel drops - Isometric holds during heel raises - Calf raises Group B (Silbernagel Protocol): Participants will follow a 12-week mixed-mode program performed once daily, focusing on concentric, eccentric, and plyometric exercises: - Isometric heel raises - Concentric + eccentric heel raises - Plyometric hopping exercises and sport-specific drills Progression is also achieved by adding a 5 kg load as tolerated in both

protocols.

Main outcome variables

Data collection tools for, Pain= NPRS ROM= Goniometry Muscle performance calf raise test and hop test Achilles Tendinopathy= VISA-A questionnaire

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20250525065886N1**
Registration date: **2025-05-26, 1404/03/05**
Registration timing: **registered_while_recruiting**

Last update: **2025-05-26, 1404/03/05**

Update count: **0**

Registration date

2025-05-26, 1404/03/05

Registrant information

Name

Laiba Rizwan

Name of organization / entity

Riphah International University, Gulberg Green Campus, Gulberg-III, Lahore, Punjab, Pakistan

Country

Pakistan

Phone

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2024-07-07, 1403/04/17

Expected recruitment end date

2025-07-22, 1404/04/31

Actual recruitment start date

2025-01-15, 1403/10/26

Actual recruitment end date

2025-08-25, 1404/06/03

Trial completion date

2025-08-28, 1404/06/06

Scientific title

Effects of Alfredson and Silbernagel exercise therapy on pain, range of motion, and muscle performance among athletes with Achilles tendinopathy.

Public title

Alfredson and Silbernagel exercises in athletes with Achilles tendinopathy

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Both male and female athletes Age between 18 to 30 years Duration of playing at least 1 to 2 years Athletes with chronic Achilles tendinopathy for more than 3 months Participating in sports involving Achilles tendon loading (i.e., sports characterized by walking, running, and/or jumping)

Exclusion criteria:

Corticosteroid injections in the region of the Achilles tendon in the previous 12 months Any neurological disease History of fracture Players having any co-morbidities Athletes have systemic diseases that can hinder training Any surgery in the lower limb region in the past two years

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: **30**

Actual sample size reached: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Participants will be randomly assigned to two groups using the sealed envelope method to ensure allocation concealment and reduce bias. A set of numbered envelopes will be prepared, each containing a predetermined treatment assignment. Upon obtaining patient consent, Group A will receive Alfredson exercises, while Group B will follow the Silbernagel exercise protocol.

Blinding (investigator's opinion)

Single blinded

Blinding description

Blinding in this study means that participants will not be told which treatment group they are in or what treatment

they will get. This will be done using the sealed envelope method so it will be a single-blind 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

26-M Gulberg-3 Campus Lahore

City

Lahore

Postal code

05450

Approval date

2024-07-30, 1403/05/09

Ethics committee reference number

REC/RCR & AHS/24/0469

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

Achilles Tendinopathy

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Pain. Range of motion and Muscle performance

Timepoint

Baseline and after 12 weeks.

Method of measurement

NPRS, Goniometry, Calf Raise Test, Hop Test, VISA-A Questionnaire

Secondary outcomes

empty

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

Intervention group: Group A - Alfredson Protocol. After

basic stretching and mobility exercises, participants performed a 12-week eccentric training program, twice daily. It includes 4 exercises targeting Achilles tendinopathy: Weeks 1-2: Straight-knee eccentric heel drops (3×15, twice daily)Weeks 2-6: Bent-knee eccentric heel drops (3×15, twice daily)Weeks 6-8: Isometric holds during heel raises (30-45 sec hold, twice daily)Weeks 8-12: Calf raises (3×15-20, twice daily) Progression is achieved by adding 5 kg load when tolerated.

Category

Treatment - Other

2

Description

Intervention group: Group B - Silbernagel Protocol. After the same basic intervention, participants followed a 12-week combined loading program, once daily, focusing on concentric, eccentric, and plyometric exercises: Weeks 1-2: Isometric heel raises (45 sec hold × 5 reps) Weeks 2-6: Concentric + eccentric heel raises (3×15) Weeks 6-12: Plyometric hopping exercises (3×10) and sport-specific drills. Progression is also achieved by adding 5 kg load as tolerated.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Pakistan Sports Board Coaching Centre, Lahore

Full name of responsible person

Mr. Yasir Pirzada

Street address

PSB- Coaching Centre, Lahore

City

Lahore

Postal code

54600

Phone

+92 42 99230382

Email

infospb@sports.gov.pk

Web page address

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Riphah International University, Gulberg Green Campus, Gulberg-III, Lahore, Punjab, Pakistan

Full name of responsible person

Dr. Danish

Street address

25 Raza Saeed Road, Bhabra Block M Gulberg III

Lahore, Punjab

City

Lahore

Postal code

54660

Phone

+92 345 7946009

Email

54192@students.riphah.edu.pk

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Riphah International University, Gulberg Green Campus, Gulberg-III, Lahore, Punjab, Pakistan

Proportion provided by this source

40

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

Other

Person responsible for general inquiries

Contact

Name of organization / entity

Riphah International University, Gulberg Green Campus, Gulberg-III, Lahore, Punjab, Pakistan

Full name of responsible person

Laiba Rizwan

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

Contact

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Position

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Latest degree

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Person responsible for updating data**Contact****Name of organization / entity**Riphah International University, Gulberg Green
Campus, Gulberg-III, Lahore, Punjab, Pakistan**Full name of responsible person**

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

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic CodeUndecided - It is not yet known if there will be a plan to
make this available**Data Dictionary**

Yes - There is a plan to make this available

Title and more details about the data/documentyet to be decided, as the study will be complete in next 3
months**When the data will become available and for how long**yet to be decided, as the study will be complete in next 3
months**To whom data/document is available**

To all the researchers community and clinicians

Under which criteria data/document could be usedFor research purposes and evidence-based practice in
clinics**From where data/document is obtainable**

Google Scholar and PubMed

What processes are involved for a request to access data/document

Nil

Comments