

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Effect of eight-week running exercise on natural and artificial turf and hard court on walking and running mechanics in individuals with navicular drop

Protocol summary

Study aim

The aim of this study was to evaluate the effect of eight-week running exercise on natural and artificial turf and hard court on walking and running mechanics in individuals with navicular drop.

Design

40 males and females (18-40 years old) were simply randomly divided 4 groups including control (n=10), exercise on natural turf (n=10), exercise on artificial turf (n=10) and hard court (n=10) groups. Running exercises were performed on natural, artificial grass, and hard court in intervention groups. Randomised with control group, superiority, parallel group. Randomisation was centralised and computerised with concealed randomisation sequence carried out at an external site

Settings and conduct

This study was done at University of Mohaghegh Ardabili in 2021. 40 males and females (18-40 years old) were randomly divided 4 group control (n=10), exercise on natural turf (n=10), artificial turf (n=10) and hard court groups (n=10). Walking and running exercises were performed on natural and artificial grass and hard court in intervention groups.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Age range of between 18-40 years, Navicular drop more than 10 mm Exclusion criteria: History of musculoskeletal injury, History surgery

Intervention groups

40 males and females (18-40 years old) were randomly divided 4 group control (n=10), exercise on natural turf (n=10), artificial turf (n=10) and hard court groups (n=10). exercises were performed on natural and artificial grass and hard court during walking and running mechanics in individuals with navicular drop.

Main outcome variables

Lower limb kinetics; Electromyography

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20170806035517N5**

Registration date: **2023-07-26, 1402/05/04**

Registration timing: **retrospective**

Last update: **2023-07-26, 1402/05/04**

Update count: **0**

Registration date

2023-07-26, 1402/05/04

Registrant information

Name

AmirAli Jafarnejhadgero

Name of organization / entity

University of Mohaghegh Ardabili

Country

Iran (Islamic Republic of)

Phone

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Email address

a.jafarnejhad@uma.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-10-21, 1401/07/29

Expected recruitment end date

2022-12-22, 1401/10/01

Actual recruitment start date

2022-10-21, 1401/07/29

Actual recruitment end date

2022-12-22, 1401/10/01

Trial completion date

2022-12-22, 1401/10/01

Scientific title

Effect of eight-week running exercise on natural and artificial turf and hard court on walking and running mechanics in individuals with navicular drop

Public title

Effect of running exercise on walking and running mechanics

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Navicular drop greater than 10 mm Age range between 18-40 years

Exclusion criteria:

Surgery history Fracture history Cardio respiratory disease history

Age

From **18 years** old to **40 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **60**

Actual sample size reached: **52**

Randomization (investigator's opinion)

Randomized

Randomization description

The randomization type was simple one. Samples were selected with available sampling method. An envelope concealment method was used to allocate study participants. The unit of randomization method was and individual basis.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Sport Sciences Research Institute

Street address

Mir emad street

City

Tehran

Province

Tehran

Postal code

1587958711

Approval date

2021-08-22, 1400/05/31

Ethics committee reference number

IR.SSRC.REC.1400.088

Health conditions studied

1

Description of health condition studied

Flat foot

ICD-10 code

M21.4

ICD-10 code description

Flat foot [pes planus] (acquired)

Primary outcomes

1

Description

Body mechanics

Timepoint

Before and after 8 weeks

Method of measurement

Using EMG and force plate systems

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group1: Running training on natural turf for 8 weeks, 3 sessions per week, each session last for about 60 minutes.

Category

Rehabilitation

2

Description

Intervention group: Running training on artificial turf for 8 weeks, 3 sessions per week, each session last for about 60 minutes.

Category

Rehabilitation

3

Description

Intervention group: Running training on hard court for 8 weeks, 3 sessions per week, each session last for about 60 minutes.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Ardabil city

Full name of responsible person

Amirali Jafarnezhadgero

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

University of Mohaghegh Ardabili

Full name of responsible person

Davod Seifzadeh

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seifzadeh@uma.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

University of Mohaghegh Ardabili

Proportion provided by this source

100

Public or private sector

Public

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

University of Mohaghegh Ardabili

Full name of responsible person

Amirali Jafarnezhadgero

Position

Associate Professor of Sports Biomechanics,
Mohaghegh Ardabili University

Latest degree

Ph.D.

Other areas of specialty/work

Sport Medicine

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Person responsible for scientific inquiries

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Person responsible for updating data

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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 Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

After the publication of the articles, raw ground reaction force and electromyography data without subjects name along with some of the major outcome related variables can be reached by contacting the e-mail address of the researcher E-mail: amiralijafarnezhad@gmail.com

When the data will become available and for how long

After the publication of the articles

To whom data/document is available

Everyone will have access to the data.

Under which criteria data/document could be used

With the permission of the researcher E-mail:
amiralijafarnezhad@gmail.com

From where data/document is obtainable

After the publication of the articles, it can be reached by contacting the e-mail address of the researcher E-mail:
amiralijafarnezhad@gmail.com

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

Email to the researcher E-mail:
amiralijafarnezhad@gmail.com

Comments