

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effects of combined exercises and short foot exercise with isometric hip abduction on navicular drop and postural control in individuals with pes planus

Protocol summary

Study aim

Determining the effect of combined exercises and short foot exercises with isometric hip abduction on navicular drop and postural control in patients with flat feet

Design

Clinical trial without control group, with parallel, single-blind, randomized. Randlist software will be used for randomization.

Settings and conduct

The exercises will be done in Arak University and the study groups will do their respective exercises daily for six weeks. Three sessions of supervised exercises and three sessions of home exercises will be done.

Participants/Inclusion and exclusion criteria

Inclusion criteria include: Age 18 to 28 years with body mass index of 18 to 25 kg per square meter, Navicular drop more than 10 mm without leg length difference of more than 1 centimeter, No lower limb or back injury in 6 months before the study. The absence of neurological diseases affecting balance and the dominant foot will be the right foot for all subjects. Exclusion criteria include: Any numbness or tingling, fracture, dislocation, skin disease on the sole of the foot or vascular disease, lower limb arthritis, nerve dysfunction, lower limb injury, history of hip and ankle surgery, use of orthotics, and leg length difference. From 1centimeter .

Intervention groups

Short foot exercis group with isometric hip abduction: Subjects will perform sensory motor training of short foot simultaneously with isometric hip cont raction (with the help of Traband). Short foot exercis group: They will perform short-foot sensory motor training. Combination Exercise Group: They will do a series of strengthening, stretching and balance exercises.

Main outcome variables

Navicular drop; Posture control

General information

Reason for update

Due to the time-consuming process of review, our initial estimated date for starting the work is before the trial registration date in the system. (The estimated date is September 10, 2022, and the review was completed on September 28, 2022). Unfortunately, neither we nor the honorable referee noticed this inadvertent error, so please correct the date to September 30 if possible. With respect

Acronym

IRCT registration information

IRCT registration number: **IRCT20220409054456N1**

Registration date: **2022-09-28, 1401/07/06**

Registration timing: **registered_while_recruiting**

Last update: **2023-06-06, 1402/03/16**

Update count: **1**

Registration date

2022-09-28, 1401/07/06

Registrant information

Name

Aftab zarali

Name of organization / entity

The University of Araku

Country

Iran (Islamic Republic of)

Phone

+98 66 4266 5135

Email address

azarali2515@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-09-21, 1401/06/30
Expected recruitment end date
2022-12-10, 1401/09/19
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Effects of combined exercises and short foot exercise with isometric hip abduction on navicular drop and postural control in individuals with pes planus

Public title
Effects of combined exercises and short foot exercise with isometric hip abduction on navicular drop and postural control in individuals with pes planus

Purpose
Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

Body mass index 18 to 25 kg/m² navicular drop more than 10 mm No injury to the lower limbs or back in the 6 months before the study The dominant foot will be the right foot for all subjects No leg length difference of more than 1.1 cm

Exclusion criteria:

Those who do lower extremity exercises separately People with numbness or tingling, fractures, dislocations, plantar fasciitis, or vascular disease Having lower limb arthritis Neurological dysfunction Suffering from a lower limb injury, a history of hip and ankle surgery, foot deformity or malformation Use of orthosis Limb length difference more than 1/1 cm

Age
From **18 years** old to **28 years** old

Gender
Female

Phase
N/A

Groups that have been masked

- Data analyser

Sample size
Target sample size: **45**

Randomization (investigator's opinion)
Randomized

Randomization description
The randomization method is parallel. The randomization unit is individual. Randlist software is used to randomly assign subjects to study groups. Randomization was done in the software as follows: At first, the number of subjects and groups is given to the software, then a code is assigned to each subject by this software. Finally a group is randomly assigned to each code by the software.

Blinding (investigator's opinion)
Single blinded

Blinding description
The data analyser will not be aware of the group

classification. The information of the groups will be provided to the data analyst in the form of number 1, 2 and 3 and for each participant with a code.

Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids
empty

Ethics committees

1
Ethics committee
Name of ethics committee
Ethics committee of araku University
Street address
Basij Square, Karbala Boulevard, Arak University
City
Arak
Province
Markazi
Postal code
۳۸۴۸۱۷۷۵۸۴
Approval date
2022-03-02, 1400/12/11
Ethics committee reference number
IR.ARAKU.REC.1401.010

Health conditions studied

1
Description of health condition studied
Pes Planus
ICD-10 code
M21.4
ICD-10 code description
Flat foot [pes planus] (acquired)

Primary outcomes

1
Description
navicular drop
Timepoint
Before and after of intervention
Method of measurement
Entrance test .Navicular drop test , Foot scan,

2
Description
Postural control
Timepoint
Before and after of intervention
Method of measurement

Foot scan

Secondary outcomes

1

Description

Knee range of motion

Timepoint

Before and after intervention

Method of measurement

Goniometer

2

Description

Static balance

Timepoint

Before and after intervention

Method of measurement

Foot scan

3

Description

Dynamic balance

Timepoint

Before and after intervention

Method of measurement

Y test ,Foot scan

4

Description

Ankle range of motion

Timepoint

Before and after intervention

Method of measurement

Goniometer

5

Description

Joint proprioception

Timepoint

Before and after intervention

Method of measurement

Goniometer

6

Description

Muscles strength of the ankle

Timepoint

Before and after intervention

Method of measurement

Dynamometer

7

Description

Muscles strength of the knee

Timepoint

Before and after intervention

Method of measurement

Dynamometer

8

Description

Gait

Timepoint

Before and after intervention

Method of measurement

Foot scan

9

Description

Quality of Life

Timepoint

Before and after intervention

Method of measurement

Questionnaire

10

Description

Pain

Timepoint

Before and after intervention

Method of measurement

Questionnaire

Intervention groups

1

Description

Intervention group: combined exercises

Category

Rehabilitation

2

Description

Intervention group: and short foot exercise with isometric hip abduction

Category

Rehabilitation

3

Description

Control group: Short Foot Exercis

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Arak University

Full name of responsible person

Zahra Raeisi
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Arak University, Karbala Boulevard, Basij Square , Arak
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Arak University
Full name of responsible person
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
دانشگاه اراک
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
Arak University
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Aftab Zarali

Position
MSc student
Latest degree
Bachelor
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Sport Injuries and corrective exercises
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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

Not applicable

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

Not applicable

Data Dictionary

Not applicable