Clinical Trial Protocol
Iranian Registry of Clinical Trials

11 Sep 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
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Iran (Islamic Republic of)
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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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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
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MSc student
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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