

# 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 1 centimeter.

##### Intervention groups

Short foot exercise group with isometric hip abduction: Subjects will perform sensory motor training of short foot simultaneously with isometric hip contraction (with the help of Traband). Short foot exercise 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  
**Street address**  
Arak University, Karbala Boulevard,Basij Square ,Arak  
**City**  
Arak  
**Province**  
Markazi  
**Postal code**  
۳۸۴۸۱۷۷۵۸۴  
**Phone**  
+98 66 4266 5135  
**Fax**  
**Email**  
azarali2515@gmail.com

## Sponsors / Funding sources

### 1

#### Sponsor

**Name of organization / entity**

Arak University

**Full name of responsible person**

Hamed Safikhani

**Street address**

Karbala Boulevard , Basij Square, Arak University ,

**City**

Arak

**Province**

Markazi

**Postal code**

۳۸۴۸۱۷۷۵۸۴

**Phone**

+98 86 3262 1024

**Email**

e-dabir@araku.ac.ir

**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

**Full name of responsible person**

Aftab Zarali

#### Position

MSc student

#### Latest degree

Bachelor

#### Other areas of specialty/work

Sport Injuries and corrective exercises

#### Street address

NO.16,West 16 Meters Haddadipour., West Imam

Hussein

#### City

Borujerd

#### Province

Lorestan

#### Postal code

۳۸۴۸۱۷۷۵۸۴

#### Phone

+98 66 4266 5135

#### Fax

#### Email

azarali2515@gmail.com

## Person responsible for scientific inquiries

#### Contact

**Name of organization / entity**

Arak University

**Full name of responsible person**

Zahra Raeisi

**Position**

Assistant professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Sport rehabilitation and corrective movements

**Street address**

Karbala Boulevard,Basij Square,Arak University

**City**

Arak

**Province**

Markazi

**Postal code**

۳۸۴۸۱۷۷۵۸۴

**Phone**

+98 86 3262 1024

**Email**

Zraisi13@yahoo.com

## Person responsible for updating data

#### Contact

**Name of organization / entity**

Arak University

**Full name of responsible person**

Zahra Raeisi

**Position**

Assistant professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Sport rehabilitation and corrective exercises

**Street address**

Karbala Boulevard ,Basij Square .Arak University

**City**

Arak

**Province**

Markazi

**Postal code**

۳۸۴۸۱۷۷۵۸۴

**Phone**

+98 86 3262 1024

**Email**

Z-raisi13@yahoo.com

**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