Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

The effect of calisthenics exercises on fitness and skill measures and functional movements in students with normal feet

Protocol summary

Study aim
The purpose of this study is to investigate the effect of calisthenics exercises on fitness and skill measures and functional movements in students with normal feet.
Design
This trial will be conducted on 75 students with one intervention group (normal foot).
Settings and conduct
This research will be conducted in the Faculty of Physical Education of Kharazmi University. For this purpose, 75 available students aged 18-24 years old will be placed in the intervention group (normal foot). The pre-test will be performed. Then, training will be performed for 16 weeks. Then the post-test will be done.
Participants/Inclusion and exclusion criteria
Inclusion criteria: Students with normal feet between 18 and 24 years of age will be included in intervention group 1. Exclusion criteria: Students with regular sports activities will not participate in the study.
Intervention groups
Intervention group 1 (students with normal feet) will receive calisthenics exercises for 16 weeks.
Main outcome variables
static balance, dynamic balance, strength of abdominal and erector spinae muscles, agility, functional movement

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20130109012078N7**
Registration date: **2023-01-19, 1401/10/29**
Registration timing: **prospective**

Last update: **2023-01-19, 1401/10/29**
Update count: **0**
Registration date
2023-01-19, 1401/10/29

Registrant information
Name
Maryam Ghorbani
Name of organization / entity
Azad
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Recruitment status
Recruitment complete
Funding source

Expected recruitment start date
2023-02-03, 1401/11/14
Expected recruitment end date
2023-06-04, 1402/03/14
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The effect of calisthenics exercises on fitness and skill measures and functional movements in students with normal feet

Public title
Investigating the effect of calisthenics exercise on physical fitness factors
Purpose
Supportive
Inclusion/Exclusion criteria
Inclusion criteria:
Female students in the age range of 18-24 years The

health of the nervous, skeletal and muscular system The health of the cardiovascular system, respiratory system, etc

Exclusion criteria:

Having regular sports activities People who have a history of neurological, rheumatism, metabolic diseases, mental disorders, disorders in the vestibular system, a history of balance disorders and frequent dizziness

Age

From **18 years** old to **24 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **75**

Randomization (investigator's opinion)

N/A

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee in Research of Sports Science Research Institute

Street address

No. Mir Emad St. 5th Alley . Ostad Motahhari St. Tehran

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1587958711

Approval date

2022-12-26, 1401/10/05

Ethics committee reference number

IR.SSRC.REC.1401.090

Health conditions studied

1

Description of health condition studied

flatfoot

ICD-10 code

M21.4

ICD-10 code description

Flat foot [pes planus] (acquired)

Primary outcomes

1

Description

Primary outcome: functional movement

Timepoint

Measurements will be performed before and after the training intervention

Method of measurement

Functional movements will be evaluated using the Functional Movement Screening Test (FMS).

2

Description

Secondary outcome: dynamic balance

Timepoint

Measurements will be performed before and after the training intervention

Method of measurement

Y test will be used to measure dynamic balance.

3

Description

Secondary outcome: strength of abdominal and erector spinae muscles

Timepoint

Measurements will be performed before and after the training intervention

Method of measurement

In order to measure the strength of the abdominal and the erector spine muscles, the test of curl-up and maintaining the plank position will be used.

4

Description

Secondary outcome: agility

Timepoint

Measurements will be performed before and after the training intervention

Method of measurement

In order to measure agility, the 4x10m Shuttle Run test will be used.

5

Description

Secondary outcome: static balance

Timepoint

Measurements will be performed before and after the training intervention

Method of measurement

Sharpened-Romberg test will be used to evaluate static balance.

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group 1 (with normal foot): Intervention group (with flexible flatfoot): calisthenics exercises. In the exercise program based on calisthenics, each session of the exercises suitable for the prerequisites and basic levels of calisthenics, which is for beginners, will be performed for 80 minutes. -Training period: sixteen weeks. -Number of training sessions per week: one session per week. -The duration of each training session: 90 minutes (5 minutes of warm-up, 80 minutes of the main body of the class, 5 minutes of cool-down) in each session. Calisthenics is a form of strength training consisting of a variety of movements that exercise large muscle groups (gross motor movements), such as standing, grasping, pushing, etc. These exercises are often performed rhythmically and with minimal equipment, as bodyweight exercises. They are intended to increase strength, fitness, and flexibility. Calisthenics can provide the benefits of muscular and aerobic system conditioning, in addition to improving psychomotor skills such as balance, agility, and coordination.

Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Shahid Bahonar Higher Education Center of Tehran

Full name of responsible person
Maryam Ghorbani

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Shahid Bahonar Higher Education Center of Tehran. Hafez Street. Tehran. Iran

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
kharazmi University

Full name of responsible person
Dr. Hamid Rajabi

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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
kharazmi University

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
kharazmi University

Full name of responsible person
Maryam Ghorbani

Position
student

Latest degree
Master

Other areas of specialty/work
motor behavior

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD
This research work will be published in the form of an article, although the data will be stored in the library archive.

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
No - There is not a plan to make this available

Clinical Study Report
Yes - There is a plan to make this available

Analytic Code
Not applicable

Data Dictionary
Not applicable

Title and more details about the data/document
Data related to measures of fitness and skill, and functional movement before and after the intervention will be provided to the audience.

When the data will become available and for how long
September 2023.

To whom data/document is available
Students and university professors

Under which criteria data/document could be used
If researchers need data for research studies, the data will be provided to them.

From where data/document is obtainable
One should refer to the project executor.

What processes are involved for a request to access data/document
Individuals will send emails to the project executor, so that send the information to them. Information about the project executor can be accessed through the following link:
https://cesaeh.khu.ac.ir/cv.php?cv=391&mod=bcv&slc_lang=fa&sid=1

Comments