Clinical Trial Protocol
Iranian Registry of Clinical Trials

11 Sep 2026

The effect of a Falling Safely Training (FAST) protocol on head and hip acceleration during the fall, some components of gait and quality of life in older adults

Protocol summary

Study aim

The aim of the study is to investigate the effect of a falling safely train (FAST) course on head and hip acceleration during a fall, some gait components, and quality of life in the older adults.

Design

Randomized clinical trial, with experimental and control group, single-blind, with pre-test and post-test on 28 participants. A simple lottery method is used for randomization

Settings and conduct

The tests will be performed in a 3D motion analysis laboratory and quality of life will be assessed with a questionnaire. The exercises will be performed in gyms. For blinding, each participant will assume that everyone is doing the same activity as him.

Participants/Inclusion and exclusion criteria

Entry conditions: elderly people 60 to 70 years old; with no history of sports; with hip bone mineral density ≥-2.3 (i.e. t-score ≥-2.3); walking independently. Not entering conditions: currently undergoing physiotherapy treatment and taking anticoagulants; In the last 3 years, any injury or abnormality including any fractures or musculoskeletal surgeries, heart diseases and diabetes.

Intervention groups

The falling safely train is a progressive exercise that aims to teach how to effectively reduce impact forces during falls, change the angles of the trunk and knees during landing to reduce body acceleration, and use rolling movements to optimally distribute impact forces applied to each part of the body along the path of contact with the ground. The effect of this type of training on gait components and quality of life in the elderly is also examined. The experimental group performs the above exercises for 6 weeks but the control group only performs the pre-test and post-test.

Main outcome variables

It is predicted that head and hip acceleration during falls will decrease and gait components (step length, stride width, gait speed) and quality of life of the elderly will improve.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20260602069619N1**
Registration date: **2026-06-18, 1405/03/28**
Registration timing: **prospective**

Last update: **2026-06-18, 1405/03/28**
Update count: **0**

Registration date

2026-06-18, 1405/03/28

Registrant information

Name
Fatemeh Khosravani
Name of organization / entity
The University of Kharazmi
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Iran (Islamic Republic of)
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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-07-06, 1405/04/15

Expected recruitment end date

2026-08-23, 1405/06/01

Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The effect of a Falling Safely Training (FAST) protocol on head and hip acceleration during the fall, some components of gait and quality of life in older adults

Public title
Effect of falling safely train on older adult
Purpose
Education/Guidance
Inclusion/Exclusion criteria
Inclusion criteria:
Bone mineral density of the hip ≥ −2.3 Independent walking (no use of walking aids)
Exclusion criteria:
Damage or abnormality that affecting on testing process
They are currently undergoing physiotherapy treatment
Age
From **60 years** old to **70 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Participant

Sample size
Target sample size: **28**
Randomization (investigator's opinion)
Randomized
Randomization description
Simple random sampling: Lottery method. Each participant is assigned a number and written on a piece of paper. Totally 28 papers. The papers are placed in a bag. Then we take out the papers one by one randomly, the first 14 papers are placed in the experimental group and the next 14 papers are placed in the control group.
Blinding (investigator's opinion)
Single blinded
Blinding description
The grouping of participants into two experimental and control groups is done randomly by the researcher after the pre-test. Participants do not know which group they may be placed in during the pre-test.
Placebo
Not used
Assignment
Other
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Kharazmi university
Street address
Next to Shahid Keshvari Sports Complex, Intersection of Kosha and Varzesh Streets, Mirdamad Blvd
City
Tehran
Province
Tehran
Postal code
1544733111
Approval date
2026-01-07, 1404/10/17
Ethics committee reference number
IR.KHU.REC.1404.143

Health conditions studied

1

Description of health condition studied
Prevention of fall injuries in the older adults
ICD-10 code
R29.6
ICD-10 code description
Repeated falls

Primary outcomes

1

Description
Head and hip acceleration in fall test.
Timepoint
Head and hip acceleration during a fall is measured at the beginning of the study and after 6 weeks of training to assess changes.
Method of measurement
3D motion analysis system

2

Description
Gait components include stride length, stride width, and walking speed.
Timepoint
Measurements will be taken at the beginning of the study and again after 6 weeks of training.
Method of measurement
3D motion analysis system

3

Description
Quality of life in older adults
Timepoint
The assessment will be conducted at the beginning of

the study and after 6 weeks of training, again.

Method of measurement

LEIPAD Elderly Quality of Life Questionnaire

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Falling Safely Train (FAST), including rolling movements to optimally distribute impact forces applied by the ground and changing trunk and knee angles to reduce acceleration during a fall. 6 weeks of training, 2 sessions per week, 45 minutes of training per session

Category

Prevention

2

Description

Control group: This group does not receive any intervention and only takes the pre-test and post-test.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Dr. Masoud Mokhtari's Specialized Orthopedic Clinic

Full name of responsible person

Dr. Masoud Mokhtari

Street address

No. 76, Farahzadi Blvd, Book Crossroads, Saadat Abad

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The kharazmi university

Full name of responsible person

Seyed Sadredin Shojaedin

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Grant name

Grant code / Reference number

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

Yes

Title of funding source

The kharazmi university

Proportion provided by this source

100

Public or private sector

Private

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

The Kharazmi university

Full name of responsible person

Fatemeh Khosravani

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

physical trainer

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Person responsible for scientific inquiries

Contact

Name of organization / entity
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Full name of responsible person
Seyed Sadredin Shojaedin

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Professor

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Corrective exercises

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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
To protect participant privacy

Study Protocol
No - There is not a plan to make this available

Statistical Analysis Plan
No - There is not a plan to make this available

Informed Consent Form
No - There is not a plan to make this available

Clinical Study Report
No - There is not a plan to make this available

Analytic Code
Not applicable

Data Dictionary
No - There is not a plan to make this available