Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Development and Evaluation of the Effectiveness of Fall-Proof Multicomponent Circuit Training on Physical Function, Balance, and Functional Ability in Older Adults with a History of Falls

Protocol summary

Study aim

Investigating the effects of multi-component circuit training for fall prevention on the physical performance (aerobic endurance—via the six-minute walk test—and lower-limb strength and endurance) of older adults with a history of falls. Investigating the effects of multi-component circuit training for fall prevention on static and dynamic balance and postural control in older adults with a history of falls. Investigating the effects of multi-component circuit training for fall prevention on functional gait cycle parameters (timing, walking speed, step width, and step length), functional independence, fear of falling, and fall risk in older adults with a history of falls. Examining the sustainability of the effects of multi-component circuit training for fall prevention on physical performance, balance, and functional ability in older adults during the follow-up phase (8 weeks post-intervention).

Design

Controlled clinical trial

Settings and conduct

Elderly women visiting centers for the elderly in Tehran

Participants/Inclusion and exclusion criteria

Female; age range: 60–75 years Normal BMI Absence of unstable medical conditions within the past 6 months Absence of significant visual or hearing impairments Absence of significant cognitive impairment Participants must be able to walk independently for at least 6 meters without assistive devices Mini-Mental State Examination (MMSE) score of 24 or higher Absence of any acute illness contraindicating the study's exercise regimen including cardiovascular, dermatological, metabolic, respiratory, or infectious diseases

Intervention groups

The experimental group will undergo the "Foolproof" circuit training regimen. The control group will engage in their usual daily physical activities

Main outcome variables

Balance assessment: static and dynamic balance, and postural control Functional ability: gait cycle parameters

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20160815029373N9**
Registration date: **2026-10-13, 1405/07/21**
Registration timing: **prospective**

Last update: **2026-10-13, 1405/07/21**
Update count: **0**

Registration date

2026-10-13, 1405/07/21

Registrant information

Name

Parisa Sedaghati

Name of organization / entity

Guilan University

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Recruitment status

recruiting

Funding source

Expected recruitment start date

2026-10-23, 1405/08/01

Expected recruitment end date

2027-03-21, 1406/01/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Development and Evaluation of the Effectiveness of Fall-Proof Multicomponent Circuit Training on Physical Function, Balance, and Functional Ability in Older Adults with a History of Falls

Public title

The Effectiveness of Fall-Prevention Exercises on the Functional Ability of the Elderly

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

The participants are elderly women aged 60 to 75 attending elderly care centers in Tehran They have a history of at least one fall in the past 12 months, do not suffer from severe mobility limitations or chronic diseases, and are capable of walking independently.

Exclusion criteria:

History of lower-limb injury or surgery, or neuromuscular disorders No history of falls in the past year Onset of an acute mental or physical illness during the intervention

Age

From **60 years** old to **75 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

Not randomized

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Research Ethics Committee in Biomedical Sciences, University of Guilan

Street address

University of Guilan, 8th kilometer of the Qazvin-Rasht Road

City

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Province

Guilan

Postal code

4199843653

Approval date

2026-08-28, 1405/06/06

Ethics committee reference number

IR.GUILAN.REC.1405.081

Health conditions studied

1

Description of health condition studied

Old Age

ICD-10 code

ICD-10 code description

R54

Primary outcomes

1

Description

Balance assessment

Timepoint

At the start of the study and 8 weeks later

Method of measurement

Berg Balance Scale and Timed Up and Go Test

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Fall-Proof Multicomponent Circuit Training

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Tehran City Elderly Care Center

Full name of responsible person

Somayeh Ahmadabadi

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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Iran National Science Foundation (INSF)
Full name of responsible person
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Phone
+98 21 8800 3981
Email
pr@insf.org
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Iran National Science Foundation (INSF)
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
Other

Person responsible for general inquiries

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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
Undecided - It is not yet known if there will be a plan to make this available
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Not applicable
Analytic Code
No - There is not a plan to make this available
Data Dictionary
Not applicable