# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

07 Nov 2026

## Comparison the effect of two combined turning and balance training protocols on some motor function indicators and quality of life in the elderly.

## Protocol summary

**Study aim**
Comparison of the effect of 12 weeks of two combined turning training and combined balance training protocols on static balance, dynamic balance, gait, turning, stair negotiation, quality of life and the fear of falling of the elderly.

**Design**
A comparative quasi-experimental study with two intervention groups, with parallel, randomized groups, on 40 elderly men

**Settings and conduct**
Participants in the study included 40 healthy elderly people who are selected as a sample using purposeful method and they are assigned into two turning and balance training groups randomly (n=20). Each group performs the relevant exercises for 12 weeks and 3 sessions of 60 minutes per week in the Sardaran Sports Complex located in Khorasgan belonging to education area 6 of Isfahan.

**Participants/Inclusion and exclusion criteria**
Inclusion criteria: Having age 60 or older, Lack of regular physical activity, Functional independence and the ability to perform daily life activities. Exclusion criteria: Mental disorders, Acute heart-respiratory diseases, acute joint diseases, hypertension and paralysis of a part of the body.

**Intervention groups**
First intervention group: balance training group - take part in a 60- minute balance training program of 3 sessions per week, lasting for 12 weeks (Exercise based on balance challenges to improve balance function). Second intervention group: turning training group - take part in a 60- minute turning training program of 3 sessions per week, lasting for 12 weeks (Exercises based on turning movements to improve turning function).

**Main outcome variables**
Static balance, dynamic balance, gait, turning, stair negotiation, quality of life, fear of falling

## General information

**Reason for update**

**Acronym**

**IRCT registration information**
IRCT registration number: **IRCT20180101038168N1**
Registration date: **2020-06-26, 1399/04/06**
Registration timing: **retrospective**

Last update: **2020-06-26, 1399/04/06**
Update count: **0**

**Registration date**
2020-06-26, 1399/04/06

**Registrant information**

**Name**
Mehdi Ghaderian

**Name of organization / entity**
University of Isfahan

**Country**
Iran (Islamic Republic of)

**Phone**
+98 31 3268 8075

**Email address**
m.ghaderiyan@spr.ui.ac.ir

**Recruitment status**
**Recruitment complete**

**Funding source**

**Expected recruitment start date**
2020-04-29, 1399/02/10

**Expected recruitment end date**
2020-05-30, 1399/03/10

**Actual recruitment start date**
empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

Comparison the effect of two combined turning and balance training protocols on some motor function indicators and quality of life in the elderly.

**Public title**

Comparison of the effect of turning and balance training on motor function and quality of life in the elderly.

**Purpose**

Supportive

**Inclusion/Exclusion criteria**

**Inclusion criteria:**

Having age 60 or older Lack of regular physical activity Functional independence and the ability to perform daily life activities

**Exclusion criteria:**

Mental disorders Acute heart-respiratory diseases Acute joint diseases Hypertension Paralysis of a part of the body

**Age**

From **60 years** old

**Gender**

Male

**Phase**

N/A

**Groups that have been masked**

*No information*

**Sample size**

Target sample size: **40**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Random allocation is done using a table of random numbers. To use the random number table, the framework of the statistical community is first specified and according to the two-digit statistical population, two-digit codes are given to the participants. The researcher accidentally starts moving from one point in the table to the left of the table. The point is selected by closing the eye and placing the tip of the pen on the table. Even numbers are considered for intervention group one and Odd numbers are considered for intervention group two.

**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**

Ethics committee of University of Isfahan

**Street address**

University of Isfahan, Azadi Square, Isfahan

**City**

Isfahan

**Province**

Isfehan

**Postal code**

۸۱۷۴۶۷۳۴۴۱

**Approval date**

2019-12-04, 1398/09/13

**Ethics committee reference number**

IR.UI.REC.1398.081

## Health conditions studied

**1**

**Description of health condition studied**

Elderly

**ICD-10 code**

R54

**ICD-10 code description**

Age-related physical debility

**2**

**Description of health condition studied**

Motor function indicators in the elderly

**ICD-10 code**

**ICD-10 code description**

**3**

**Description of health condition studied**

Quality of life in the elderly

**ICD-10 code**

**ICD-10 code description**

## Primary outcomes

**1**

**Description**

Static balance

**Timepoint**

Measurement at the beginning of the study (before the intervention begins) and after 12 weeks of exercise

**Method of measurement**

Measure the center of pressure excursion using the force plate device

**2**

**Description**

Dynamic balance

**Timepoint**

Measurement at the beginning of the study (before the intervention begins) and after 12 weeks of exercise

**Method of measurement**
Measuring the center of mass position in relation to base of support and the average rate of stopping and vertical loading rate using the motion analysis device and force plate while walking

**3**

**Description**
Gait function
**Timepoint**
Measurement at the beginning of the study (before the intervention begins) and after 12 weeks of exercise
**Method of measurement**
Measurement of joint angular position, center of pressure changes and ground reaction force parameters while walking using motion analysis system and force plate

**4**

**Description**
Turning function
**Timepoint**
Measurement at the beginning of the study (before the intervention begins) and after 12 weeks of exercise
**Method of measurement**
Measurement of joint angular position , center of pressure changes, coefficient of friction and ground reaction force parameters while turning using motion analysis system and force plate

**5**

**Description**
Stair negotiation function
**Timepoint**
Measurement at the beginning of the study (before the intervention begins) and after 12 weeks of exercise
**Method of measurement**
Measurement of joint angular position, center of pressure changes and ground reaction force parameters while stepping up and down using motion analysis system and force plate

**6**

**Description**
Quality of life
**Timepoint**
Measurement at the beginning of the study (before the intervention begins) and after 12 weeks of exercise
**Method of measurement**
Quality of Life Scale (CASP-19)

**7**

**Description**
Fear of falling
**Timepoint**
Measurement at the beginning of the study (before the intervention begins) and after 12 weeks of exercise
**Method of measurement**
Falls Efficacy Scale-International (FES-I)

## Secondary outcomes

empty

## Intervention groups

**1**

**Description**
First intervention group: balance training group - take part in a 60- minute balance training program of 3 sessions per week, lasting for 12 weeks (exercise based on balance challenges in static positions, including different types of standing on one leg, two legs, weight transfer in different directions, on stable and unstable surfaces and dynamic situations include a variety of weight transfer movements with a change in base of support, a variety of walks in different conditions and paths, and a step movement in different directions) to improve balance performance in challenging situations for the elderly, including standing, walking, turning and stair negotiation and preventing falls in these situations.
**Category**
Prevention

**2**

**Description**
Second intervention group: turning training group - take part in a 60- minute turning training program of 3 sessions per week, lasting for 12 weeks (exercises based on turning challenges in static positions include standing types with turning component along with rotational weight transfer, and dynamic positions include various types of turning movements at different degrees on hard and soft surfaces with changes in base of support, walking on turning and spiral paths and turning step movements) to improve turning performance in challenging situations for the elderly including standing, walking, turning and stair negotiation, and preventing falls in these situations.
**Category**
Prevention

## Recruitment centers

**1**

**Recruitment center**
**Name of recruitment center**
Isfahan Municipality Experience Garden
**Full name of responsible person**
Fahimeh Sadat Kadkhodai
**Street address**
Parking No. 5, Ghadir Garden, Allameh Amini St.
**City**
Isfahan
**Province**
Isfehan
**Postal code**
8158714131
**Phone**

+98 31 3267 0295
**Email**
info@esfahanfarhang.ir

## Sponsors / Funding sources

### 1

**Sponsor**
**Name of organization / entity**
University of Isfahan
**Full name of responsible person**
Rasoul Roknizadeh
**Street address**
First Floor, Central Library Building, University of Isfahan, Azadi Square.
**City**
Isfahan
**Province**
Isfehan
**Postal code**
۸۱۷۴۶۷۳۴۴۱
**Phone**
+98 31 3793 2171
**Fax**
**Email**
research.deputy@dean.ui.ac.ir
**Grant name**
**Grant code / Reference number**
**Is the source of funding the same sponsor organization/entity?**
Yes
**Title of funding source**
University of Isfahan
**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**
University of Isfahan
**Full name of responsible person**
Mehdi Ghaderian
**Position**
PhD candidate
**Latest degree**
Master
**Other areas of specialty/work**
Sport injuries & corrective exercises
**Street address**
No 18, Masuod deadlock, Ohod Blvd, East Hasht Behesh Ave.
**City**
Isfahan
**Province**
Isfehan
**Postal code**
8157957876
**Phone**
+98 31 3268 8075
**Fax**
**Email**
mehdighaderiyan67@gmail.com

## Person responsible for scientific inquiries

**Contact**
**Name of organization / entity**
University of Isfahan
**Full name of responsible person**
Mehdi Ghaderian
**Position**
PhD candidate
**Latest degree**
Master
**Other areas of specialty/work**
Sport injuries & corrective exercises
**Street address**
No 18, Masuod deadlock, Ohod Blvd, East Hasht Behesh Ave.
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Isfehan
**Postal code**
8157957876
**Phone**
+98 31 3268 8075
**Fax**
**Email**
mehdighaderiyan67@gmail.com

## Person responsible for updating data

**Contact**
**Name of organization / entity**
University of Isfahan
**Full name of responsible person**
Mehdi Ghaderian
**Position**
PhD candidate
**Latest degree**
Master
**Other areas of specialty/work**
Sport injuries & corrective exercises
**Street address**
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**Postal code**

8157957876

**Phone**

+98 31 3268 8075

**Fax**

**Email**

mehdighaderiyan67@gmail.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**

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**

Undecided - It is not yet known if there will be a plan to make this available

**Analytic Code**

Undecided - It is not yet known if there will be a plan to make this available

**Data Dictionary**

Undecided - It is not yet known if there will be a plan to make this available