# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

22 Nov 2026

## Comparison of motor-cognitive dual task training and virtual reality based training effects on the attentional demands of gait initiation in older adults

## Protocol summary


**Summary**

The main purpose of this study is to find which type of treatment (cognitive-motor intervention or virtual reality method) is more effective to improve the postural control of older adults. It is estimated 20 healthy older adults are sufficient for this study. The inclusion criteria for healthy older adults are the following: Age ≥ 65 years old, be free from any severe cardiopulmonary disease, neurological disorder, musculoskeletal impairment or any history of falls in the prior 6 months. Subjects are excluded from either group if had any dizziness, fatigue, vigorous physical activity or stress before testing. After baseline evaluation, subjects are randomly allocated to one of the two groups: (1) cognitive-motor dual-task training, (2) virtual reality based training. Cognitive-motor dual-task training is balance training while simultaneously engaging in a secondary cognitive task. Virtual reality based training is balance training in a virtual environment using programs of Wii fit. Participants in these groups are attended 12-16 sessions, 3 sessions per week, and 60 minutes per session. The outcome measurements take place at 3 time points: (1) before initiation of intervention (baseline), (2) after completion of training, (3) 8 weeks after completion of training. The outcome measurements are initial swing step time, initial stance step time, initial swing step time variability, initial stance step time variability, verbal reaction time, verbal reaction accuracy, and attention allocation index of these parameters.


## General information

**Acronym**

**IRCT registration information**

IRCT registration number: **IRCT2015052022341N1**
Registration date: **2015-05-26, 1394/03/05**
Registration timing: **retrospective**
Last update:
Update count: **0**

**Registration date**

2015-05-26, 1394/03/05

**Registrant information**


**Name**

Roya Khanmohammadi

**Name of organization / entity**

Tehran University of Medical Sciences

**Country**

Iran (Islamic Republic of)

**Phone**

+98 21 7768 5088

**Email address**

rkhanmohammadi@razi.tums.ac.ir


**Recruitment status**

**Recruitment complete**


**Funding source**

Tehran University of Medical Sciences


**Expected recruitment start date**

2013-08-23, 1392/06/01

**Expected recruitment end date**

2015-05-26, 1394/03/05

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

Comparison of motor-cognitive dual task training and virtual reality based training effects on the attentional demands of gait initiation in older adults

**Public title**

Comparison of motor-cognitive dual task training and

virtual reality based training effects on the attentional demands of gait initiation in older adults

**Purpose**
Treatment

**Inclusion/Exclusion criteria**
Inclusion criteria: Age ≥ 65 years old; BBS score >40; TUG score ≤20; ABC score ≥50%; MMSE score ≥24; HADS- depress subscale score ≤7; Have no severe cardiopulmonary disease, neurological disorder and musculoskeletal impairment; Have no history of falls in the prior 6 months Exclusion criteria: had vigorous physical activity before testing; had dizziness, fatigue, and stress during testing

**Age**
From **65 years** old

**Gender**
Both

**Phase**
N/A

**Groups that have been masked**
*No information*

**Sample size**
Target sample size: **20**

**Randomization (investigator's opinion)**
Randomized

**Randomization description**

**Blinding (investigator's opinion)**
Single 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 of Tehran University of Medical Sciences

**Street address**
Central Organization of Tehran University of Medical Sciences, Qods St., Keshavarz Blvd.

**City**
Tehran

**Postal code**

**Approval date**
2013-08-03, 1392/05/12

**Ethics committee reference number**
130/888/92/د

## Health conditions studied

### 1

**Description of health condition studied**
elderly

**ICD-10 code**
G31.1

**ICD-10 code description**
Senile degeneration of brain, not elsewhere classified

## Primary outcomes

### 1

**Description**
Initial swing step time

**Timepoint**
before training, after completion of training, 8 weeks after completion of training

**Method of measurement**
foot switch sensor- software of Biometrics DataLog

### 2

**Description**
Initial stance step time

**Timepoint**
before training, after completion of training, 8 weeks after completion of training

**Method of measurement**
foot switch sensor- software of Biometrics DataLog

### 3

**Description**
Initial swing step time variability

**Timepoint**
before training, after completion of training, 8 weeks after completion of training

**Method of measurement**
foot switch sensor- excel software

### 4

**Description**
Initial stance step time variability

**Timepoint**
before training, after completion of training, 8 weeks after completion of training

**Method of measurement**
foot switch sensor- excel software

### 5

**Description**
Verbal reaction time

**Timepoint**
before training, after completion of training, 8 weeks after completion of training

**Method of measurement**
Recorder - Sound Forge Pro

**6**

**Description**
Verbal reaction accuracy
**Timepoint**
before training, after completion of training, 8 weeks after completion of training
**Method of measurement**
Recorder - Sound Forge Pro

**7**

**Description**
Attention allocation index
**Timepoint**
before training, after completion of training, 8 weeks after completion of training
**Method of measurement**
excel software

## Secondary outcomes

empty

## Intervention groups

**1**

**Description**
Balance training while simultaneously engaging in a secondary cognitive task. Participants in this group are attended 12-16 sessions, 3 sessions per week, and 60 minutes per session.
**Category**
Behavior

**2**

**Description**
Balance training in a virtual environment using programs of Wii fit. Participants in this group are attended 12-16 sessions, 3 sessions per week, and 60 minutes per session.
**Category**
Behavior

## Recruitment centers

**1**

**Recruitment center**
**Name of recruitment center**
Rehabilitation Faculty
**Full name of responsible person**
Roya Khanmohammadi
**Street address**
Tehran-enghelab street- piche shemiran- Physical Therapy Department
**City**
Tehran

## Sponsors / Funding sources

**1**

**Sponsor**
**Name of organization / entity**
Rehabilitation Faculty
**Full name of responsible person**
Dr. Saeed Talebian
**Street address**
Tehran-enghelab street- piche shemiran- Physical Therapy Department
**City**
Tehran
**Grant name**
**Grant code / Reference number**
**Is the source of funding the same sponsor organization/entity?**
Yes
**Title of funding source**
Rehabilitation Faculty
**Proportion provided by this source**
100
**Public or private sector**
*empty*
**Domestic or foreign origin**
*empty*
**Category of foreign source of funding**
*empty*
**Country of origin**
**Type of organization providing the funding**
*empty*

## Person responsible for general inquiries

**Contact**
**Name of organization / entity**
Rehabilitation Faculty, Tehran University of Medical Sciences
**Full name of responsible person**
Roya Khanmohammadi
**Position**
Phd student
**Other areas of specialty/work**
**Street address**
Tehran-enghelab street- piche shemiran- Physical Therapy Department
**City**
Tehran
**Postal code**
**Phone**
+98 21 7753 3939
**Fax**
**Email**
rkhanmohammadi@razi.tums.ac.ir
**Web page address**

## Person responsible for scientific inquiries

**Contact**
**Name of organization / entity**

Rehabilitation Faculty, Tehran University of Medical Sciences

**Full name of responsible person**

Dr. Saeed Talebian

**Position**

Professor

**Other areas of specialty/work**

**Street address**

Tehran-enghelab street- piche shemiran- Physical Therapy Department

**City**

Tehran

**Postal code**

**Phone**

+98 21 7753 3939

**Fax**

**Email**

Talebian@sina.tums.ac.ir

**Web page address**

## Person responsible for updating data

**Contact**

**Name of organization / entity**

Rehabilitation Faculty, Tehran University of Medical Sciences

**Full name of responsible person**

Roya Khanmohammadi

**Position**

Phd student

**Other areas of specialty/work**

**Street address**

Tehran- enghelab street- piche shemiran- Rehabilitation faculty- Physical Therapy Department

**City**

Tehran

**Postal code**

**Phone**

+98 21 7768 5088

**Fax**

**Email**

rkhanmohammadi@razi.tums.ac.ir

**Web page address**

## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**

*empty*

**Study Protocol**

*empty*

**Statistical Analysis Plan**

*empty*

**Informed Consent Form**

*empty*

**Clinical Study Report**

*empty*

**Analytic Code**

*empty*

**Data Dictionary**

*empty*