

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### The effect of cerebellum trans-cranial direct current stimulation (tDCS) on static and dynamic postural stability in older adult individuals

#### Protocol summary

##### Summary

The purpose of the present study was to investigate the efficiency of trans-cranial direct current stimulation (TDCS) application over the cerebellum region on postural stability in healthy older adults. This study has clinical trial design. Participants will be randomly allocated in two groups included; Group I who received 20 minutes TDCS over the cerebellum region and Group II who served as placebo group (mounted TDCS electrodes over the cerebellum region without any TDCS currents for 2 minutes). The healthy older participants with 60-75 years will be included. Participants who have history of neurological diseases or musculoskeletal disorders, severe perceptual and memorial problems, brain diseases, visual and auditory problems, lower extremity pathology and range of motion limitation will be excluded. All participants will be asked to stand on each static and dynamic level of Byodex Balance System platform for 30-second, before and after receiving TDSC treatment. Accordingly, the anterior/posterior, medial/lateral and overall stability indexes will be analyzed before and after TDCS treatment.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT2016010121294N3**

Registration date: **2016-04-03, 1395/01/15**

Registration timing: **prospective**

Last update:

Update count: **0**

##### Registration date

2016-04-03, 1395/01/15

##### Registrant information

**Name**

Fatemeh Ehsani

##### Name of organization / entity

Semnan University of Medical Sciences

##### Country

Iran (Islamic Republic of)

##### Phone

+98 23 3365 4180

##### Email address

f.ehsani@semums.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

Vice chancellor for research, Semnan University of Medical Sciences, Semnan, Iran

##### Expected recruitment start date

2016-04-30, 1395/02/11

##### Expected recruitment end date

2016-09-30, 1395/07/09

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

The effect of cerebellum trans-cranial direct current stimulation (tDCS) on static and dynamic postural stability in older adult individuals

##### Public title

The effect of cerebellum trans-cranial direct current stimulation (tDCS) on postural stability in older adult individuals

##### Purpose

Treatment

##### Inclusion/Exclusion criteria

Inclusion criteria: Participants who have 60-75 years old will be concluded. Exclusion criteria: Participants had no history of neurological diseases or musculoskeletal

disorders; Adults with severe perceptual and memory problems evidenced by Mini Mental Status Examination (MMSE) scores of less than 21; having neurological disease, especially Parkinson and Alzheimer's; having visual or auditory problems; having lower extremity pathology and range of motion limitations will be excluded from the study.

#### **Age**

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

#### **Gender**

Both

#### **Phase**

2

#### **Groups that have been masked**

*No information*

#### **Sample size**

Target sample size: **30**

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

Randomized

#### **Randomization description**

#### **Blinding (investigator's opinion)**

Single blinded

#### **Blinding description**

#### **Placebo**

Used

#### **Assignment**

Parallel

#### **Other design features**

### **Secondary Ids**

empty

### **Ethics committees**

#### 1

##### **Ethics committee**

###### **Name of ethics committee**

Ethics committee of Semnan university of medical science

###### **Street address**

5 kilometer in Damghan Road, Semnan Iran

###### **City**

Semnan

###### **Postal code**

###### **Approval date**

2016-03-05, 1394/12/15

###### **Ethics committee reference number**

IR.SEMUMS.REC.1394.189

### **Health conditions studied**

#### 1

##### **Description of health condition studied**

healthy older adults

##### **ICD-10 code**

-

##### **ICD-10 code description**

-

### **Primary outcomes**

#### 1

##### **Description**

Static stability indexes

##### **Timepoint**

Before and after receiving TDCS intervention

##### **Method of measurement**

Byodex Balance System

### **Secondary outcomes**

#### 1

##### **Description**

Dynamic postural indexes

##### **Timepoint**

Before and after receiving TDCS

##### **Method of measurement**

Byodex Balance System

### **Intervention groups**

#### 1

##### **Description**

Intervention group: Before and after receiving TDCS intervention, the participants will be asked to stand on static and dynamic levels of Byodex Balance System for 30-second. In TDCS intervention, anodal and cathodal electrodes will be positioned on cerebellum and ipsi-lateral deltoid muscle, respectively. Stimulation will be used with 2 Mili Ampere intensity for 20-minute.

##### **Category**

Rehabilitation

#### 2

##### **Description**

Control group: Before and after receiving sham-TDCS intervention, the participants will be asked to stand on static and dynamic levels of Byodex Balance System for 30-second. In sham-TDCS intervention, anodal and cathodal electrodes will be positioned on cerebellum and ipsi-lateral deltoid muscle, respectively. Stimulation will be used with 2 Mili Ampere intensity for 2-minute.

##### **Category**

Other

### **Recruitment centers**

#### 1

##### **Recruitment center**

###### **Name of recruitment center**

Neuromuscular Rehabilitation Research Center

###### **Full name of responsible person**

Fatemeh Ehsani

###### **Street address**

Bldv. Ghods, Mashahir Square, Semnan

**City**  
Semnan

## Sponsors / Funding sources

### 1

#### Sponsor

**Name of organization / entity**  
Vice Chancellor for research of Semnan University of  
Medical Sciences

**Full name of responsible person**  
Dr. Ali Rashidipoor

**Street address**  
Vice Chancellor for research of Semnan University of  
Medical Sciences, Blvd. Basig, Semnan

**City**  
Semnan

#### Grant name

#### Grant code / Reference number

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

**Title of funding source**  
Vice Chancellor for research of Semnan University of  
Medical Sciences

**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**  
Neuromuscular Rehabilitation Research Center

**Full name of responsible person**  
Fatemeh Ehsani

**Position**  
Ph.D., PT, Associate Professor

**Other areas of specialty/work**

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## Person responsible for scientific

## inquiries

#### Contact

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## Person responsible for updating data

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## 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*