

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 Jul 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 TDCS 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)

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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

PhD., PT, Associate Professor

Other areas of specialty/work

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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