Clinical Trial Protocol
Iranian Registry of Clinical Trials

21 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

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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 commitie 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
Blvd. Ghods, Mashahir Square, Semnan

City
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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
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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
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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