

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparision of Eccentric & Concentric Exercises on balance in Patients with Hemiparesis

Protocol summary

Summary

The purpose of this study is to evaluate and compare the effects of eccentric exercise and concentric exercise on postural sway in hemiparetic patients. 36 hemiparetic patients that over 20 years of age, with a history of at least 6 months of suffering from hemiparesis are randomly and not blind divided into two groups. The treatment program included an eight-week (3 time per week) eccentric exercises on a treadmill for one group and an eight-week concentric exercises for the other group in the study. The eccentric exercises are carry out by running on a treadmill at 4° negative slope (downhill). The concentric exercises, however, are conduct by running at 4 degree slope (uphill) on the treadmill. The treatment exercises do with a comfortable treadmill speed for 15 minutes (plus 5 minutes warm-up and 5 minutes cool-down period) for each participant. Displacement and velocity of displacement, Before and after of intervention, in Anteroposterior and Mediolateral directions in both groups of hemiparetic patients are measure and compare.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201504154485N4**

Registration date: **2015-11-04, 1394/08/13**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2015-11-04, 1394/08/13

Registrant information

Name

Abdolhamid Hajjhasani

Name of organization / entity

Semnan University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 23 1444 1522

Email address

hajjhasani@sem-ums.ac.ir

Recruitment status

Recruitment complete

Funding source

Semnan University of Medical Sciences vice chancello for research

Expected recruitment start date

2015-08-11, 1394/05/20

Expected recruitment end date

2016-01-10, 1394/10/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparision of Eccentric & Concentric Exercises on balance in Patients with Hemiparesis

Public title

Effects of Eccentric & Concentric Exercises On Postural Sway in Patients with Hemiparesis

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion Criteria: Subjects with over 20 years of age, with a history of at least 6 months of suffering from hemiparesis, They are all able to run on the treadmill.

Exclusion Criteria: Subjects with cognitive impairment, a history of involvement of both hemispheres, cerebellum injuries or other neurological or orthopedic complications

affecting the feet

Age

From **20 years** old to **60 years** old

Gender

Both

Phase

2

Groups that have been masked

No information

Sample size

Target sample size: **36**

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Not blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features

Sealed envelope

Secondary Ids

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics Committee of Semnan University of Medical Sciences

Street address

5 Kilometers of Damghan road

City

Semnan

Postal code**Approval date**

2015-06-15, 1394/03/25

Ethics committee reference number

ir.semums.rec.1394.34

Health conditions studied**1****Description of health condition studied**

Hemiparalysis

ICD-10 code

G-81

ICD-10 code description

Hemiplegia, unspecified

Primary outcomes**1****Description**

Postural Sway

Timepoint

Before and after of intervention

Method of measurement

Force plate

2**Description**

Displacement of center of pressure

Timepoint

Before and after of intervention

Method of measurement

Force plate

3**Description**

Velocity of center of pressure

Timepoint

Before and after of intervention

Method of measurement

Force plate

Secondary outcomes

empty

Intervention groups**1****Description**

Eccentric exercises 8 weeks (3 time per week and 20 minutes per session) downhill or uphill running protocol on the treadmill

Category

Rehabilitation

2**Description**

Concentric exercises 8 weeks (3 time per week and 20 minutes per session) downhill or uphill running protocol on the treadmill

Category

Rehabilitation

Recruitment centers**1****Recruitment center****Name of recruitment center**

Neuromuscular Rehabilitation Center Research of Semnan University of Medical Sciences

Full name of responsible person**Street address**

5 Kilometers of Damghan road, Semnan

City

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Semnan University of Medical Sciences Vice chancello for research

Full name of responsible person

Dr Mohamad reza Askari

Street address

5 Kilometers of Damghan road, Semnan

City

Semnan

Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Semnan University of Medical Sciences Vice chancello for research

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

Semnan University of Medical Sciences

Full name of responsible person

Abdolhamid Hajjhasani

Position

PhD of Physiotherapy, Assistant professor

Other areas of specialty/work
Street address

5 Kilometers of Damghan road, semnan

City

Semnan

Postal code
Phone

+98 23 3365 4180

Fax
Email

hajjhasani41@yahoo.com

Web page address

Person responsible for scientific

inquiries

Contact
Name of organization / entity

Semnan University of Medical Sciences

Full name of responsible person

Abdolhamid Hajjhasani

Position

Assistant professor, PhD of Physiotherapy

Other areas of specialty/work
Street address

5 Kilometers of Damghan road, Semnan

City

Semnan

Postal code
Phone

+98 23 3365 4180

Fax
Email

hajjhasani41@yahoo.com

Web page address

Person responsible for updating data

Contact
Name of organization / entity

Semnan University of Medical Sciences

Full name of responsible person

Abdolhamid Hajjhasani

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Street address

5 Kilometers of Damghan road, Semnan

City

Semnan

Postal code
Phone

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Fax
Email
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