Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Effects of Sensory Retraining on Recovery of the Hemiplegic Upper Liimb in Stroke Patients (A Single-System Design)

Protocol summary

Summary

Objectives: The sensory deficit is one of the most frequent consequences of stroke. These deficits may have negative impacts on recovery of the upper extremity in these patients but frequently are ignored and most rehabilitative interventions in stroke patients are focused on motor recovery. The aim of the present study is to investigate the effects of sensory retraining on the sensorimotor recovery of the hemiplegic upper extremity in chronic stroke patients. Design: A Single-System (A-B) study Setting and Conduct: Five chronic stroke patients will be recruited. These patients will be assessed in the baseline phase until reaching a stable pattern in changes. Then the treatment phase will begin and they will be delivered a sensory retraining program for six weeks. During this phase, they will be assessed on three days intervals, too. Participants Including Major Eligibility Criteria: Chronic stroke patients who have only one experience of stroke; are unable to detect normal sensory threshold at least in one of median, ulnar or radial innervated areas; have no history of other neurological or orthopedic conditions; are in stage 4 or higher according to Brunnstrom's recovery stages; have ability to transfer at least one block of Box and Block test will be included. Intervention: Based on sensory retraining principles and according to each participant’s abilities, the intervention will begin with detection and localization of constant and moving touch and will be continued by more complex tasks, such as graphesthesia and stereognosis. Main Outcome Measures: Upper extremity function (Fugl-Meyer Assessment and Motricity Index) and hand dexterity (Box and Block Test)

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017082617301N4**

Registration date: **2017-09-17, 1396/06/26**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2017-09-17, 1396/06/26

Registrant information

Name

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Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Iran University of Medical sciences

Expected recruitment start date

2010-12-06, 1389/09/15

Expected recruitment end date

2011-07-15, 1390/04/24

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of Sensory Retraining on Recovery of the Hemiplegic Upper Liimb in Stroke Patients (A Single-System Design)

Public title

Effect of Sensory Retraining in Chronic Stroke Patients

Purpose
Treatment
Inclusion/Exclusion criteria
Major inclusion criteria: having only one experience of stroke (at least 6 months ago); inability to detect normal sensory threshold (monofilament 2/31) at least in one of median, ulnar or radial innervated areas; no history of other neurological or orthopedic conditions; stage 4 or higher according to Brunnstrom's stages; ability to transfer at least one block of Box and Block test; Major exclusion criteria: Participants were excluded if they have inappropriate collaboration with the program.
Age
From **24 years** old to **64 years** old
Gender
Both

Phase
2-3
Groups that have been masked
No information
Sample size
Target sample size: **5**
Randomization (investigator's opinion)
N/A
Randomization description
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Single
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of Iran University of Medical Sciences
Street address
School of Rehabilitation, Shahid Shahnazari Street, Madar Square, Mirdamad Blvd, Tehran
City
Tehran
Postal code
Approval date
2010-11-02, 1389/08/11
Ethics committee reference number
165

Health conditions studied

1

Description of health condition studied
Stroke
ICD-10 code
I64
ICD-10 code description
Stroke, not specified as haemorrhage or infarction

Primary outcomes

1

Description
Hand Dexterity
Timepoint
On three days interval
Method of measurement
Box and Block Test

2

Description
Motor function
Timepoint
On three days interval
Method of measurement
Fugl-Meyer assessment and Motoricity Index

Secondary outcomes

1

Description
sensory function
Timepoint
On three days interval
Method of measurement
Semmes-Weinstein Monofilaments

Intervention groups

1

Description
This will be a single subject study with an intervention group without a control group. intervention will be include noninvasive sensory stimulation with the aim of improving the individuals ability to detect tactile and proprioceptive stimulation.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Shafayahyaeian Hospital
Full name of responsible person
Dr Azad

Street address
Mojahedin Street, Shohada Square, Tehran
City
Tehran

2

Recruitment center
Name of recruitment center
Shahid Jalayipour Complex Rehabilitation Center
Full name of responsible person
Dr Azad
Street address
Next to Akbarabadi Hospital, Atashneshani Street, Mowlavi Street, Tehran
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Vice Chancellor for Research, Iran university of medical sciences
Full name of responsible person
Dr Azad
Street address
School of Rehabilitation, Shahid Shahnazari Street, Madar Square, Mirdamad Blvd, Tehran
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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, Iran 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

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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