Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

The effect of neural modulation on verbal fluency skill in healthy individuals

Protocol summary

Study aim

General purpose: Investigating the effect of neural modulation on verbal fluency in healthy people Specific purposes: 1- Investigating the effect of neural modulation on the improvement of phonemic verbal fluency skills in healthy people Investigating the effect of neural modulation on the improvement of semantic verbal fluency skills in healthy people.

Design

A clinical trial with a control group, a single intervention, a blind strain, randomized on 30 healthy people. A table of random numbers will be used for randomization.

Settings and conduct

For blinding one strain, when we want to perform unrealistic radiation on the cerebral cortex of people in the control group, we will turn off the light irradiation device and continue our work without the person noticing. The location of the study will be the Brain and Cognitive Laboratory, Faculty of Rehabilitation Sciences, Tabriz University of Medical Sciences.

Participants/Inclusion and exclusion criteria

Entry requirements: 1- Age range 18-40 years 2- General health of the participants 3- Mastery of Persian language Non-entry conditions: 1- History of neurological, psychological diseases and speech and language disorders

Intervention groups

The considered groups include intervention and control groups. People in the intervention group will be exposed to near-infrared light, and the control group will not be exposed to real radiation.

Main outcome variables

1- Phonemic verbal fluency score in healthy people before and after the intervention 2-Semantic verbal fluency score in healthy people before and after the intervention

General information

Reason for update

Acronym

NMVFS

IRCT registration information

IRCT registration number: **IRCT20221109056449N1**
Registration date: **2023-04-24, 1402/02/04**
Registration timing: **retrospective**

Last update: **2023-04-24, 1402/02/04**
Update count: **0**

Registration date

2023-04-24, 1402/02/04

Registrant information

Name

faezeh hemmati

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 41 3334 6284

Email address

faezehhemmati95@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-12-03, 1401/09/12

Expected recruitment end date

2023-04-01, 1402/01/12

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
The effect of neural modulation on verbal fluency skill in healthy individuals

Public title
Investigating the effect of near-infrared light radiation on the cerebral cortex and verbal fluency in healthy people
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Participants should have good general health. Participants should be between 18-40 years old. The participants should have natural comprehension and expression skills in Persian language.
Exclusion criteria:
Participants must have a history of neurological, psychological diseases and language and speech disorders.
Age
From **18 years** old to **40 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Participant

Sample size
Target sample size: **30**
Randomization (investigator's opinion)
Randomized
Randomization description
The participants will be divided into two intervention and control groups by a simple random assignment method, and we will use the random number table tool for this.
Blinding (investigator's opinion)
Single blinded
Blinding description
For blinding of one strain, after people are placed in the intervention and control groups, we will not tell them which group they are in, and the near-infrared light radiation is performed in the intervention group. In the control group, so that the participant does not notice, after one second of radiation, we turn off the device and pretend that radiation is taking place.
Placebo
Not used
Assignment
Single
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of Tabriz University of Medical Sciences
Street address
Tabriz University of Medical Sciences, Golgasht Street, Tabriz
City
Tabriz
Province
East Azarbaijan
Postal code
5166616471
Approval date
2021-09-13, 1400/06/22
Ethics committee reference number
IR.TBZMED.REC.1400.582

Health conditions studied

1

Description of health condition studied
Verbal Fluency In Healthy People
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Semantic And Phonemic Verbal Fluency Score In Healthy People
Timepoint
Measuring phonemic and semantic verbal fluency scores at the beginning of the study and after near-infrared light irradiation.
Method of measurement
Verbal Fluency Test

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: an intervention group and a control group (comparison). The intervention group will receive one dose of near-infrared light with a wavelength of 850 nm and an energy of 60 m J for 10 minutes.
Category
Rehabilitation

2

Description
Control group: People in the control group will be exposed to near-infrared light, but after one second, the device will turn off without them noticing, and it will continue for 10 minutes.

Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Tabriz University of Medical Sciences
Full name of responsible person
Faezeh Hemmati
Street address
No. 26, Mohajeri Alley., Chaiknar., Tabriz
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Tabriz University of Medical Sciences
Full name of responsible person
Dr.Parviz Shahabi
Street address
Research and Technology Vice-Chancellor., Third Floor., Central Building No. 2, Tabriz University of Medical Sciences, Golgasht St., Tabriz
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parvizshahabi@gmail.com
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Tabriz University of Medical Sciences
Proportion provided by this source
100
Public or private sector
Public
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact
Name of organization / entity
Tabriz University of Medical Sciences
Full name of responsible person
Ali Jahan
Position
Associate Professor
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Other areas of specialty/work
Neuroscience
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD
Due to the confidentiality of participants' information

Study Protocol
Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available

Analytic Code
Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available