

Clinical Trial Protocol

Iranian Registry of Clinical Trials

15 Jul 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

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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

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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

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Research and Technology Vice-Chancellor., Third Floor., Central Building No. 2, Tabriz University of Medical Sciences, Golgasht St., Tabriz

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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

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

Latest degree

Ph.D.

Other areas of specialty/work

Neuroscience

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Person responsible for scientific inquiries**Contact****Name of organization / entity**

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Person responsible for updating data

Contact

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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