Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Short Term Effects of Transcranial Light Therapy on Motor Performance in Healthy People

Protocol summary

Study aim
The short term effects of transcranial light therapy on motor performance in healthy people will be assessed.

Design
In this research, 68 healthy student will be chosen from the Faculty of Rehabilitation, Tabriz University of Medical Sciences and randomly divided into two groups of sham and two groups of intervention.

Settings and conduct
The study will be done in the Faculty of Rehabilitation, Tabriz University of Medical Sciences. Participants in the intervention groups will receive 5min transcranial LASER on C3 and C4 of brodman regions. In sham groups, we will use filter to prevent LASER absorption. Motor performance of the participants will be assessed by finger tapping test immediately before and after transcranial light therapy. Participants won't know which groups they will assign. That is randomly.

Participants/Inclusion and exclusion criteria
Right handedness healthy people within age 18-30, without history of orthopedic or neurologic disorders in upper extremities

Intervention groups
We have 4 groups. Two intervention groups and two sham groups. Participants in intervention groups will receive 5min transcranial LASER on C3 and C4 of brodman region. In sham groups, we will use filter to prevent LASER absorption. Motor performance of the participants will be assessed by finger tapping test immediately before and after the transcranial light therapy.

Main outcome variables
Number of taps in motor task

General information

Reason for update

Acronym
TLT

IRCT registration information
IRCT registration number: **IRCT20180110038293N1**
Registration date: **2018-01-25, 1396/11/05**
Registration timing: **prospective**

Last update: **2018-01-25, 1396/11/05**
Update count: **0**

Registration date
2018-01-25, 1396/11/05

Registrant information

Name
Atefeh Fekri Sustani

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 13 4222 3421

Email address
atefehfekri@yahoo.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2018-02-20, 1396/12/01

Expected recruitment end date
2018-03-21, 1397/01/01

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Short Term Effects of Transcranial Light Therapy on Motor Performance in Healthy People

Public title

Effects of Transcranial Light Therapy on Motor Performance

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Right-handedness 18-30 years old

Exclusion criteria:

Uncorrected visual impairment Upper extremity neurologic or orthopedic disorders Sleep disorder Left handedness pregnancy History of epilepsy Having a regular manual activity involving high dexterity (such as playing the piano) Taking medication affecting the neural system History of neurological or psychological disorders

Age

From **18 years** old to **30 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **68**

Randomization (investigator's opinion)

Randomized

Randomization description

Simple random allocation will use to assign the participants into the two real and two sham groups, using a sealing envelope.

Blinding (investigator's opinion)

Single blinded

Blinding description

At the beginning of the session, we will explain to the participants that they voluntarily enter to this study and randomly may assign in the real or sham groups. We emphasis that they won't know about which group they are.

Placebo

Used

Assignment

Parallel

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

Valieasr, North Tavanir, Before Golpark Square

City

Tabriz

Province

East Azarbaijan

Postal code

5157635411

Approval date

2017-11-14, 1396/08/23

Ethics committee reference number

IR.TBZMED.REC.1396.706

Health conditions studied

1

Description of health condition studied

Healthy people

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Number of taps in Finger tapping test

Timepoint

Measurement the number of taps in Finger tapping test immediately before and after transcranial light therapy

Method of measurement

Computer Software

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: We will use LASER Lumix3 instrument with 808nm wavelength, continuous waves, circle cross section (3.14cm2), PD=250mw/cm2, ED=60J/cm2. LASER applicator will contact with participants skull skin in C3 point connected to primary motor cortex and It will be radiated for 5 min.

Category

Treatment - Devices

2

Description

Intervention group 2: We will use LASER Lumix3 instrument with 808nm wavelength, continuous waves, circle cross section (3.14cm2), PD=250mw/cm2, ED=60J/cm2. LASER applicator will contact with participants skull skin in C4 point connected to primary motor cortex and It will be radiated for 5 min.

Category

Treatment - Devices

3

Description
Control group 1: The usage protocol and LASER instrument is similar to first intervention group. Main difference is placing a LASER filter between applicator and participants' skin that prevent from LASER absorption.
Category
Treatment - Devices

4

Description
Control group 2: The usage protocol and LASER instrument is similar to first intervention group. Main difference is placing a LASER filter between applicator and participants' skin that prevent from LASER absorption.
Category
Treatment - Devices

Recruitment centers

1

Recruitment center
Name of recruitment center
Faculty of Rehabilitation, Tabriz University of Medical Science
Full name of responsible person
Mir Ali Eteraf Oskouei
Street address
Valieasr, North Tavanir, Before Golpark Square
City
Tabriz
Province
East Azarbaijan
Postal code
5157635411
Phone
+98 41 3331 1293
Fax
+98 41 3333 4647
Email
eterafoskouei@tbzmed.ac.ir

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
معاونت پژوهشی دانشگاه علوم پزشکی تبریز
Full name of responsible person
Mir Ali Eteraf Oskouei
Street address
Valieasr, North Tavanir, Before Golpark Square
City
Tabriz
Province
East Azarbaijan
Postal code
5157635411
Phone
+98 41 3333 4647
Email
eterafoskouei@tbzmed.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
معاونت پژوهشی دانشگاه علوم پزشکی تبریز
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
Atefeh Fekri Sustani
Position
Physiotherapist, MSc Student
Latest degree
Bachelor
Other areas of specialty/work
Physiotherapy
Street address
43. Yas 11, Kuye Sustan, Shaghayegh Street
City
Lahijan
Province
Guilan
Postal code
4414876771
Phone
+98 13 4222 3421
Fax
Email
atefehfekri@yahoo.com

Person responsible for scientific inquiries

Contact
Name of organization / entity
Tabriz University of Medical Sciences
Full name of responsible person
Mir Ali Eteraf Oskouei
Position
Full Professor

Latest degree
Ph.D.
Other areas of specialty/work
Physiotherapy
Street address
Valieasr, North Tavanir, Before Golpark Square
City
Tabriz
Province
East Azarbaijan
Postal code
5157635411
Phone
+98 41 3331 1392
Email
eterafoskouei@tbzmed.ac.ir

Person responsible for updating data

Contact
Name of organization / entity
Tabriz University of Medical Sciences
Full name of responsible person
Atefeh Fekri Sustani
Position
Physiotherapist, MSc Student
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43. Yas 11, Kuye Sustan, Shaghayegh Street
City
Lahijan
Province
Guilan
Postal code
4414876771
Phone
+98 13 4222 3421
Fax
Email
atefehfekri@yahoo.com

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
No information is available.
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
Not applicable