

Clinical Trial Protocol

Iranian Registry of Clinical Trials

05 Aug 2026

The comparison of Brain wave (EEG) pattern changes during mindfulness meditation between experts and novices

Protocol summary

Summary

Mindfulness meditation (MM) is the method for physical and mental health. It has positive effects on stress reduction, emotional self-regulation, self-awareness and attention. The recent studies show that MM causes changes in brain activation and structure. The main aim of this research is the investigation of electroencephalography (EEG) pattern changes during mindfulness meditation. Individuals within 30-60 years old who have been selected by the General Health Questionnaire (GHQ-28) and do not use alcohol, cigarette, hookah and psychiatric medication will participate in this research. The participants' brain waves will be recorded using 32 channel EEG device whilst gentle events expressed by subjects are video captured for qualitative assessment of successful mental strategies. Moreover, the heart rate, respiration and electrooculography (EOG) of participants will be recorded. The participants are a group of 34 people divided into 3 groups: The expert mediators group (6 men- 6 women) for 3 sessions, novices group (6 men- 6 women) for 2 sessions. Signal recordings will be performed for these two groups 5 minutes before and after the meditation and 30 min during the meditation. There is a control group of 10 people (5 men-5 women) which will have their brain signals recorded in rest situation for 1 session, forty minutes. We predict that the alpha waves should be increased and spread from occipital lobe to the frontal lobe and we can detect theta waves in last minutes of meditation in experts group. The final goal is to devise specific innovative neurofeedback intervention protocols and transcranial alternating current stimulation (tACS) to support mindfulness practitioners and help people to be healthy and happy.

General information

Acronym

-

IRCT registration information

IRCT registration number: **IRCT2016102930569N1**

Registration date: **2017-01-01, 1395/10/12**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2017-01-01, 1395/10/12

Registrant information

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Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Investigator

Expected recruitment start date

2016-10-10, 1395/07/19

Expected recruitment end date

2017-03-20, 1395/12/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The comparison of Brain wave (EEG) pattern changes during mindfulness meditation between experts and

novices	2016-10-08, 1395/07/17
Public title The investigation of EEG pattern changes during mindfulness meditation	Ethics committee reference number IR.IUMS.REC.1395.9302111
Purpose Other	Health conditions studied
Inclusion/Exclusion criteria Inclusion criteria: individuals within 30-60 years old. The participants have been shortlisted using a General Health Questionnaire (GHQ-28). Individuals who do not consume alcohol; do not smoke cigarette; and hookah; and are not under psychiatric medication; can participate in this research. The experts carry out 10-20 min meditation routine every day whilst the other groups do not do any meditation. Exclusion criteria: individuals cannot participate in the study if they are not healthy according to the GHQ-28 questionnaire; or if they consume alcohol; or smoke cigarette; and hookah; or are under psychiatric medication. In case of the group 2 and 3, if the individuals practice meditation they cannot participate in the study.	1 Description of health condition studied Correspondence between brain waves and mindfulness meditation in experts and novices
Age From 65 years old to 35 years old	ICD-10 code -
Gender Both	ICD-10 code description -
Phase N/A	Primary outcomes
Groups that have been masked <i>No information</i>	1 Description Brain Signals
Sample size Target sample size: 34	Timepoint 5 min before and after the meditation and during the meditation
Randomization (investigator's opinion) Not randomized	Method of measurement EEG device
Randomization description	Secondary outcomes empty
Blinding (investigator's opinion) Not blinded	Intervention groups
Blinding description	1 Description There will be no intervention in control groups.
Placebo Not used	Category Other
Assignment Parallel	2 Description The subjects in novice group will be trained in mindfulness meditation technique.
Other design features -	Category Other
Secondary Ids empty	3 Description The subjects in expert group have known the mindfulness meditation technique and will do that.
Ethics committees	Category Other
1 Ethics committee Name of ethics committee Iran University of Medical Science Street address Shahid Hemmat Highway City Tehran Postal code Approval date	Recruitment centers
	1 Recruitment center

Name of recruitment center
National Brain Mapping Lab

Full name of responsible person
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Sponsors / Funding sources

1

Sponsor

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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

Institute for Cognitive Science Studies

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