

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

17 Jun 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

##### Name

Tiam Hosseinian

##### Name of organization / entity

ICSS

##### Country

Iran (Islamic Republic of)

##### Phone

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##### Email address

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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

## Public title

The investigation of EEG pattern changes during mindfulness meditation

## Purpose

Other

## 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.

## Age

From **65 years** old to **35 years** old

## Gender

Both

## Phase

N/A

## Groups that have been masked

*No information*

## Sample size

Target sample size: **34**

## Randomization (investigator's opinion)

Not randomized

## Randomization description

## Blinding (investigator's opinion)

Not blinded

## Blinding description

## Placebo

Not used

## Assignment

Parallel

## Other design features

-

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Iran University of Medical Science

##### Street address

Shahid Hemmat Highway

##### City

Tehran

##### Postal code

##### Approval date

2016-10-08, 1395/07/17

## Ethics committee reference number

IR.IUMS.REC.1395.9302111

## Health conditions studied

### 1

#### Description of health condition studied

Correspondence between brain waves and mindfulness meditation in experts and novices

#### ICD-10 code

-

#### ICD-10 code description

-

## Primary outcomes

### 1

#### Description

Brain Signals

#### Timepoint

5 min before and after the meditation and during the meditation

#### Method of measurement

EEG device

## Secondary outcomes

empty

## Intervention groups

### 1

#### Description

There will be no intervention in control groups.

#### Category

Other

### 2

#### Description

The subjects in novice group will be trained in mindfulness meditation technique.

#### Category

Other

### 3

#### Description

The subjects in expert group have known the mindfulness meditation technique and will do that.

#### Category

Other

## Recruitment centers

### 1

#### Recruitment center

**Name of recruitment center**

National Brain Mapping Lab

**Full name of responsible person**

Parivash Purabbasi

**Street address**National Brain Mapping Lab, College of Engineering,  
After Jalal Al Ahmad Highway, North Kargar Ave.,  
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**Web page address****Sponsors / Funding sources****1****Sponsor****Name of organization / entity**

Institute for Cognitive Science Studies

**Full name of responsible person**

Mrs. Ghasemi

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Square, 4th Phase, Pardis New City, Tehran, Iran.**City**

Pardis

**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****Contact****Name of organization / entity**

Institute for Cognitive Science Studies

**Full name of responsible person**

Tiam Hosseinian

**Position**

Master of Cognitive Science-Cognitive Psychology

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Pazhouheshkadeh Blvd., Safir Omid Blvd, Edalat  
Square, 4th Phase, Pardis New City, Tehran, Iran.**City****Person responsible for scientific inquiries****Contact****Name of organization / entity**

Birjand University of Medical Science

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**Web page address****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*