

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Investigation of Resonance Effect Caused by Exposure of Local extremely low frequency Magnetic Field on Brain Signals

Protocol summary

Summary

Background and Objectives: Some studies have investigated the effects of extremely low frequency magnetic fields (ELF-MFs) on brain signals. Few researchers have reported that human subjects exposed to magnetic fields exhibit changes in brain signals at the frequency of stimulation. In most of investigation, researchers usually take advantage of a uniform field which encompasses the head. The aim of present study was to expose different parts of the brain to ELF-MFs locally and to investigate variation of brain signal and resonance effect. Method: Local ELF-MFs with 3, 5, 10, 17 and 45Hz frequencies and 240 μ T intensity was applied on five points (T3, T4, Cz, F3 and F4) of participants scalp Separately in 10-20 system. At the end, relative power over this points in common frequency bands and at the frequency of magnetic fields was evaluated by paired t-test.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201102155839N1**

Registration date: **2011-04-12, 1390/01/23**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2011-04-12, 1390/01/23

Registrant information

Name

seyed ali shafiei darabi

Name of organization / entity

Tarbiat modares university

Country

Iran (Islamic Republic of)

Phone

+98 82883839

Email address

shafiei-a@modares.ac.ir

Recruitment status

Recruitment complete

Funding source

Tarbiat Modares University

Expected recruitment start date

2008-01-01, 1386/10/11

Expected recruitment end date

2010-10-01, 1389/07/09

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Investigation of Resonance Effect Caused by Exposure of Local extremely low frequency Magnetic Field on Brain Signals

Public title

Effect of Extremely Low Frequency Weak Local Magnetic Fields on the Brain Signals to Purpose Using in the Neurofeedback Systems

Purpose

Basic science

Inclusion/Exclusion criteria

Inclusion criteria: The participants were right-handed, age between from 20 to 32y, must be mel Exclusion criteria: have positive history for epilepsy, chronic pain or psychological disorders leading to take long-term medication

Age

From **20 years** old to **32 years** old

Gender

Male

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **10**

Randomization (investigator's opinion)
N/A

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Tarbiat Modares University

Street address
Tarbiat Modares University, Tehran, Iran

City
Tehran

Postal code

Approval date
2009-08-15, 1388/05/24

Ethics committee reference number
150/32315

Health conditions studied

1

Description of health condition studied
healthy subject participated in this study

ICD-10 code

ICD-10 code description

2

Description of health condition studied
effect of extremely low frequency magnetic field upon
health university students

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
variation in brain signals

Timepoint
during and 10min after exposure of magnetic field

Method of measurement
recording brain signals by EEG instrument

2

Description
variation in brain signals

Timepoint
10min after Magnetic field exposure

Method of measurement
recording brain signal by EEG instrument

Secondary outcomes

empty

Intervention groups

1

Description
Intervention Group: ELF magnetic field exposure on scalp
of healthy participants

Category
Other

2

Description
Control Group: there wasn't any magnetic field

Category
Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center
Tarbiat Modares University

Full name of responsible person

Street address

City
Tehran

2

Recruitment center

Name of recruitment center
Tarbiat Modares University

Full name of responsible person

Street address

City
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tarbiat Modares University

Full name of responsible person

Seyed Ali Shafiei Darabi

Street address

Tarbiat Modares University, Tehran, Iran

City

Tehran

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Tarbiat Modares University

Proportion provided by this source**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

2

Sponsor

Name of organization / entity

Tarbiat Modares University

Full name of responsible person

Seyed Ali Shafiei Darabi

Street address

Medical Physics Faculty, Tarbiat Modares University, Tehran, Iran

City

Tehran

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Tarbiat Modares University

Proportion provided by this source**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

Tarbiat Modares University

Full name of responsible person

Seyed Ali Shafiei Darabi

Position

Ph.D Student

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Person responsible for scientific inquiries

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Prof

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Position**Other areas of specialty/work****Street address****City****Postal code****Phone****Fax****Email**

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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