

Clinical Trial Protocol

Iranian Registry of Clinical Trials

25 Oct 2026

A Comparative Study of the Efficacy of Repetitive Transcranial Magnetic Stimulation (rTMS) at 1 Hz and 0.5 Hz in Improving Symptoms of Patients with Obsessive-Compulsive Disorder

Protocol summary

Study aim

To compare the efficacy of repetitive transcranial magnetic stimulation at 1 and 0.5 hertz in improving symptoms of obsessive compulsive disorder.

Design

Single blind randomized parallel group clinical trial in 80 patients; block randomization.

Settings and conduct

The study will be conducted at Khorshid Hospital in Isfahan; patients will enter after informed consent; the outcome assessor will be blinded to group allocation.

Participants/Inclusion and exclusion criteria

Patients aged 18 to 65 years with treatment resistant obsessive compulsive disorder; psychiatrist confirmed diagnosis; non response to pharmacotherapy and cognitive behavioral therapy; non inclusion, uncontrolled psychiatric disorder, epilepsy, neurological disease, major medical illness, contraindication to magnetic stimulation, metallic object in the head or neck, no consent.

Intervention groups

Two active intervention groups; 1 hertz and 0.5 hertz; 10 sessions every other day for 3 weeks.

Main outcome variables

Change in total Yale Brown Obsessive Compulsive Scale score from before to after intervention.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20211121053132N4**

Registration date: **2026-04-15, 1405/01/26**

Registration timing: **prospective**

Last update: **2026-04-15, 1405/01/26**

Update count: **0**

Registration date

2026-04-15, 1405/01/26

Registrant information

Name

Ali Shariat

Name of organization / entity

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-04-21, 1405/02/01

Expected recruitment end date

2026-06-21, 1405/03/31

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

A Comparative Study of the Efficacy of Repetitive Transcranial Magnetic Stimulation (rTMS) at 1 Hz and 0.5 Hz in Improving Symptoms of Patients with Obsessive-Compulsive Disorder

Public title

Comparison of Two Types of Brain Magnetic Stimulation for Improving Symptoms in Patients with Obsessive-Compulsive Disorder

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Patients with a diagnosis of obsessive-compulsive disorder confirmed by a psychiatrist based on DSM-5 criteria inadequate response to at least two selective serotonin reuptake inhibitors (SSRIs) and clomipramine (each administered for at least 6 weeks), non-response to cognitive behavioral therapy (CBT).

Exclusion criteria:

uncontrolled psychiatric comorbidities such as major depression or anxiety disorders, significant active medical conditions, history of epilepsy or other neurological disorders, contraindications to transcranial magnetic stimulation (including metallic implants in the head or neck), unwillingness to participate in the study.

Age

From **18 years** old to **65 years** old

Gender

Both

Phase

2

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **80**

Randomization (investigator's opinion)

Randomized

Randomization description

Participants will allocate to the two treatment groups using block randomization with a block size of 2. The possible allocation sequences will be AB and BA. For each block, one sequence will select using a random number table, and participants will assign accordingly in the order of enrollment to ensure balance between groups.

Blinding (investigator's opinion)

Single blinded

Blinding description

In this study, the outcome assessor (Y-BOCS evaluator) will blind to group allocation. Due to the nature of the intervention,

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Isfahan University of Medical

Sciences

Street address

Hezar Jerib Avenue

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Isfahan

Province

Isfahan

Postal code

8174673461

Approval date

2025-12-01, 1404/09/10

Ethics committee reference number

IR.MUI.MED.REC.1404.353

Health conditions studied

1

Description of health condition studied

Obsessive-compulsive disorder

ICD-10 code

F42

ICD-10 code description

Obsessive-compulsive disorder

Primary outcomes

1

Description

Change in total score of the Yale Brown Obsessive Compulsive Scale

Timepoint

At baseline before the intervention and at the end of the study after completion of the tenth treatment session

Method of measurement

Yale Brown Obsessive Compulsive Scale administered through interview and scored by the evaluator

Secondary outcomes

1

Description

Total score of the Yale Brown Obsessive Compulsive Scale at baseline

Timepoint

At baseline before the intervention

Method of measurement

Yale Brown Obsessive Compulsive Scale administered through interview and scored by the evaluator

2

Description

Total score of the Yale Brown Obsessive Compulsive Scale at the end of the study

Timepoint

At the end of the study after completion of the tenth treatment session

Method of measurement

Yale Brown Obsessive Compulsive Scale administered

through interview and scored by the evaluator

Intervention groups

1

Description

Intervention group: Participants in this group receive repetitive transcranial magnetic stimulation at a frequency of 1 hertz. The intervention consists of 10 treatment sessions every other day over 3 weeks. In each session, stimulation is delivered at 100 percent of motor threshold, with 15 trains and 100 pulses per train, using the Super Rapid 2 device, with the coil positioned over the dorsolateral prefrontal cortex.

Category

Treatment - Devices

2

Description

Intervention group: Intervention group: Participants in this group receive repetitive transcranial magnetic stimulation at a frequency of 0.5 hertz. The intervention consists of 10 treatment sessions every other day over 3 weeks. In each session, stimulation is delivered at 100 percent of motor threshold, with 15 trains and 100 pulses per train, using the Super Rapid 2 device, with the coil positioned over the dorsolateral prefrontal cortex.

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

Khorshid Hospital

Full name of responsible person

Ali Shariat

Street address

Khorshid Hospital, Ostandari street, Isfahan.

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8145833117

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Esfahan University of Medical Sciences

Full name of responsible person

Gholamreza Asgari

Street address

Building No. 4, Vice Chancellor for Research and Technology, Hezar Jarib Avenue , Isfahan University of Medical Sciences and Health Services,

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research@mui.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Esfahan 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

Esfahan University of Medical Sciences

Full name of responsible person

Gholamreza Asgari

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Nutrition

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Esfahan University of Medical Sciences

Full name of responsible person

Gholamreza Asgari

Position

Associated professor

Latest degree

Ph.D.

Other areas of specialty/work

Nutrition

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Other areas of specialty/work

Psychiatrics

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this 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

Undecided - It is not yet known if there will be a plan to make this available

Person responsible for updating data

Contact

Name of organization / entity

Esfahan University of Medical Sciences

Full name of responsible person

Ali Shariat

Position

Assistant Professor

Latest degree

Specialist