

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

25 Jun 2026

### Evaluation of the effectiveness of TDCS (Transcranial Direct Current Stimulation) in the treatment of hyposmia in patients with Covid-19

#### Protocol summary

##### Study aim

Evaluation of the effectiveness of TDCS (Transcranial Direct Current Stimulation) in the treatment of prolonged anosmia and hyposmia in patients with Covid-19

##### Design

Clinical trial without control group as a case series study on 10 patients.

##### Settings and conduct

Patients in the physical medicine ward of Hazrat Rasool Akram Hospital undergo four sessions of TDCS (Transcranial Direct Current Stimulation). Patients' sense of smell is measured by SIT (Smell Identification) Test before the intervention and one week after four TDCS sessions.

##### Participants/Inclusion and exclusion criteria

Age between 18 and 60 years Loss of sense of smell after Covid-19 (anosmia or hyposmia that has not improved for more than a month after the onset of symptoms and with routine treatment) Exclusion criteria also include cases in which the use of the TDCS method is contraindicated: 1. Pregnancy 2. History of chronic pain tolerance conditions 3. Seizures or family history of seizures 3. Implanted metal devices such as pacemakers, metal plate and wire 4. History of brain surgery

##### Intervention groups

Ten patients who develop a prolonged diminished or loss of sense of smell after Covid 19 disease receive four sessions of TDCS treatment. Patients' sense of smell is measured before the intervention and one week after the intervention, using the SIT test.

##### Main outcome variables

Olfactory sensitivity

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20180205038619N2**

Registration date: **2021-08-30, 1400/06/08**

Registration timing: **prospective**

Last update: **2021-08-30, 1400/06/08**

Update count: **0**

##### Registration date

2021-08-30, 1400/06/08

##### Registrant information

###### Name

Katayoun Moradi

###### Name of organization / entity

###### Country

Iran (Islamic Republic of)

###### Phone

+98 21 8896 6574

###### Email address

katayounmoradi69@gmail.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2021-09-10, 1400/06/19

##### Expected recruitment end date

2021-10-22, 1400/07/30

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Evaluation of the effectiveness of TDCS (Transcranial Direct Current Stimulation) in the treatment of hyposmia in patients with Covid-19

##### Public title

Evaluation of the effectiveness of TDCS (Transcranial Direct Current Stimulation) in the treatment of prolonged decreased of sense of smell in patients with Covid-19

2021-01-05, 1399/10/16

**Ethics committee reference number**  
IR.IUMS.REC.1399.1089

## Purpose

Treatment

## Inclusion/Exclusion criteria

### Inclusion criteria:

Age between 18 and 60 years Loss of sense of smell after Covid-19 (anosmia that has not improved for more than a month after the onset of symptoms and with routine treatment) Decreased of sense of smell after Covid-19 (anosmia that has not improved for more than a month after the onset of symptoms and with routine treatment)

### Exclusion criteria:

Pregnancy Seizures or family history of seizures Implanted metal devices such as pacemakers, metal plate and wire History of brain surgery

## Age

From **18 years** old to **60 years** old

## Gender

Both

## 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

Ethics committee of Iran University of Medical Sciences

##### Street address

Ethics committee, Iran University of Medical Sciences, Hemmat Highway, Tehran

##### City

Tehran

##### Province

Tehran

##### Postal code

1449614535

## Approval date

## Health conditions studied

### 1

#### Description of health condition studied

covid-19

#### ICD-10 code

B34.2

#### ICD-10 code description

Coronavirus infection, unspecified

## Primary outcomes

### 1

#### Description

Olfactory sensitivity

#### Timepoint

Patients are assessed before the intervention and one week after 4 sessions of TDCS.

#### Method of measurement

Participants' olfactory sensitivity will be measured by the Smell Identification Test (SIT) . In this method, 24 Iranianized odor such as rose, caffeine, saffron, etc. will be used and a score of 24 will be given, with a score of 19 to 24 being considered the normal range. A score of 14 to 18 is mild microsmia, a score of 10 to 13 is severe microsmia, and a score of 0 to 9 is anosmia.

## Secondary outcomes

empty

## Intervention groups

### 1

#### Description

The intervention group will receive a direct current of 2 mA for 20 minutes. In all patients, the anode electrode is located on the left DLPFC region and the cathode electrode is located on the right DLPFC region. The excitation current will be generated by a direct current generator with a maximum current of 4 mA (NeuroStim2 dual channel device). To transmit current, a 35 cm square electrode covered with 0.9% saline-impregnated sponge will be used.

#### Category

Treatment - Other

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Hazrat Rasul Akram Hospital

**Full name of responsible person**

Naseh Yousefi

**Street address**

Hazrat Rasul Akram Hospital, Niyayesh St, Satarkhan Ave

**City**

Tehran

**Province**

Tehran

**Postal code**

1445613131

**Phone**

+98 21 6435 1000

**Fax**

+98 21 6650 2248

**Email**

nasehusefi@gmail.com

**Web page address**<https://hrmc.iums.ac.ir/>**Sponsors / Funding sources****1****Sponsor****Name of organization / entity**

Iran University of Medical Sciences

**Full name of responsible person**

Dr. Seyed Ali Javad Mousavi

**Street address**

5th floor, Headquarters, Iran University of Medical Sciences, Hemmat Highway, Tehran

**City**

tehran

**Province**

Tehran

**Postal code**

1449614535

**Phone**

+98 21 8214 1201

**Email**

admins@iums.ac.ir

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

Yes

**Title of funding source**

Iran 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**

Iran University of Medical Sciences

**Full name of responsible person**

Katayoun Moradi

**Position**

Associate Professor of Physical Medicine and Rehabilitation

**Latest degree**

Specialist

**Other areas of specialty/work**

Physical Medicine

**Street address**

Department of Physical Medicine and Rehabilitation, Firuzgar Hospital, Valiasr Square, Tehran

**City**

Tehran

**Province**

Tehran

**Postal code**

1593747811

**Phone**

+98 21 8214 1229

**Email**

katayounmoradi69@gmail.com

**Person responsible for scientific inquiries****Contact****Name of organization / entity**

Iran University of Medical Sciences

**Full name of responsible person**

Katayoun Moradi

**Position**

Associate Professor of Physical Medicine and Rehabilitation

**Latest degree**

Specialist

**Other areas of specialty/work**

Physical Medicine

**Street address**

Department of Physical Medicine and Rehabilitation, Firuzgar Hospital, Valiasr Square, Tehran

**City**

Tehran

**Province**

Tehran

**Postal code**

1593747811

**Phone**

+98 21 8214 1229

**Email**

katayounmoradi69@gmail.com

**Person responsible for updating data****Contact****Name of organization / entity**

Iran University of Medical Sciences

**Full name of responsible person**

Katayoun Moradi

**Position**

Associate Professor of Physical Medicine and Rehabilitation

**Latest degree**

Specialist

**Other areas of specialty/work**

Physical Medicine

**Street address**

Department of Physical Medicine and Rehabilitation, Firuzgar Hospital, Valiasr Square, Tehran

**City**

Tehran

**Province**

Tehran

**Postal code**

1593747811

**Phone**

+98 21 8214 1229

**Email**

katayounmoradi69@gmail.com

**Sharing plan****Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

**Study Protocol**

Yes - There is a plan to make this available

**Statistical Analysis Plan**

Yes - There is a plan to make this available

**Informed Consent Form**

Yes - There is a plan to make this available

**Clinical Study Report**

Yes - There is a plan to make this available

**Analytic Code**

Yes - There is a plan to make this available

**Data Dictionary**

Yes - There is a plan to make this available

**Title and more details about the data/document**

All the patient's data can be shared with privacy in regard to patients name

**When the data will become available and for how long**

Start accessing 6 months after publishing the results.

**To whom data/document is available**

For scholars working in academic centers

**Under which criteria data/document could be used**

It can be analyzed and printed by other people by mentioning the source

**From where data/document is obtainable**

Dr. Katayoun Moradi katayounmoradi69@gmail.com

**What processes are involved for a request to access data/document**

Upon authentication, data is provided to the individual.

**Comments**