

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

22 Jun 2026

### The effect of 6 weeks of high-intensity interval training (HIIT) with supplementation of Omega-3 on serum levels of brain-derived neurotrophic factor (BDNF) in sedentary male students

#### Protocol summary

##### Study aim

The effect of 6 weeks of High-intensity interval training (HIIT) with omega-3 supplementation on serum levels of brain-derived neurotrophic factor (BDNF) was inactive male students.

##### Design

Clinical trials with the control group, Pragmatic, With parallel groups, Not blind and Randomized.

##### Settings and conduct

Place of research of Sistan and Baluchestan University, Physical Education Hall, Subjects in each intervention group belonging to that group, High-intensity interval training (40 Meter speeds back and forth), Usage of omega-3 supplementation (2 grams daily), Do both interventions (High-intensity interval training plus omega-3 consumption) Or intervention control group (Without physical activity and supplementation) they did.

##### Participants/Inclusion and exclusion criteria

log in: healthy, Completion of consent form, Lack of supplement or medication, Lack regular exercise, No smoking. No entry: Failure to complete the consent form, Taking medicine or supplement, Heart or respiratory disease, Being athlete.

##### Intervention groups

Control group: During this 6-week period, No activity or consumption will have any supplement. First Intervention group: High-Intensity interval training (40 m round trip speed for 6 weeks, 4 repetitions in the first week and 8 repetitions in the sixth week). Along with taking 2 grams of omega-3 jelly capsules made by Zahravi Iran Co. at breakfast and dinner 1 gram plus one glass of water for 6 weeks. Second Intervention group: High-Intensity interval training (40 m round trip speed for 6 weeks, 4 repetitions in the first week and 8 repetitions in the sixth week). Third Intervention group: with taking 2 grams of omega-3 jelly capsules made by Zahravi Iran Co. at breakfast and dinner 1 gram plus one glass of water for 6 weeks.

#### Main outcome variables

Increased serum BDNF, Improve body composition indicators, Improve Indicators Hematology and lipid profiles.

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20181227042149N1**  
Registration date: **2019-02-23, 1397/12/04**  
Registration timing: **retrospective**

Last update: **2019-02-23, 1397/12/04**

Update count: **0**

##### Registration date

2019-02-23, 1397/12/04

##### Registrant information

##### Name

sajjad karimi pour

##### Name of organization / entity

The University of Sistan & Baluchestan

##### Country

Iran (Islamic Republic of)

##### Phone

+98 54 3113 6456

##### Email address

sajad.karimi1819@gmail.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2018-09-23, 1397/07/01

##### Expected recruitment end date

2018-09-26, 1397/07/04

**Actual recruitment start date**

2018-09-23, 1397/07/01

**Actual recruitment end date**

2018-09-26, 1397/07/04

**Trial completion date**

2018-11-21, 1397/08/30

**Scientific title**

The effect of 6 weeks of high-intensity interval training (HIIT) with supplementation of Omega-3 on serum levels of brain-derived neurotrophic factor (BDNF) in sedentary male students

**Public title**

Effect of physical activity and supplementation on BDNF index

**Purpose**

Prevention

**Inclusion/Exclusion criteria****Inclusion criteria:**

Completion of consent form for cooperation in research work. Non-public physical education physical education male students that have 1 to select units. Subjects do not have regular physical activity during the last 6 months. At least 6 months before the start of the study, they did not use omega-3 supplements, antioxidants or certain medications. Lack of specific disease and having physical health of subjects. Non-use of cigarettes and tobacco.

**Exclusion criteria:**

Physical Education Students or Students who Have Elected Physical Education 2. Failure to complete the consent form for cooperation in the research project. Subjects with respiratory, cardiac or other diseases. Subjects use a specific drug or supplement 6 months before or at the present time. Subjects have regular activities such as walking, bodybuilding, soccer and ... in the last 6 months or now. Smoking or tobacco use.

**Age**

No age limit

**Gender**

Male

**Phase**

3

**Groups that have been masked**

*No information*

**Sample size**

Target sample size: **40**

Actual sample size reached: **32**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Simple random method, Simple random units (groups) are selected in lottery form, Then all the names of the people are in the envelopes and each of them is selected by lot.

**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**

Ethics committee of Sport Sciences Research Institute of Iran

**Street address**

No. 3, - Alley 5., - Miremad Street., Professor Motahhari Street

**City**

Tehran

**Province**

Tehran

**Postal code**

1587958711

**Approval date**

2018-06-25, 1397/04/04

**Ethics committee reference number**

IR.SSRC.REC.1397.238

**Health conditions studied****1****Description of health condition studied**

healthy people

**ICD-10 code****ICD-10 code description****Primary outcomes****1****Description**

Serum levels of Brain-derived neurotrophic factor (BDNF)

**Timepoint**

Measuring serum BDNF levels at the beginning of the study 24 hours before the start of the The first session of the training and at the end (6 weeks) 48 hours after the last training session.

**Method of measurement**

Blood serum sampling-Laboratory kit for serum human BDNF

**Secondary outcomes****1****Description**

Hematology Indicators

**Timepoint**

At the beginning of the study, 24 hours before the start

of the protocol and at the end of the protocol (6 weeks), 48 hours after the last session of the protocol

**Method of measurement**

American Sysmox Electron Microscope

**2**

**Description**

Weight

**Timepoint**

At the beginning of the study, 24 hours before the start of the protocol and at the end of the protocol (6 weeks), 48 hours after the last session of the protocol

**Method of measurement**

German Seca Digital Scale

**3**

**Description**

Blood pressure

**Timepoint**

At the beginning of the study, 24 hours before the start of the protocol and at the end of the protocol (6 weeks), 48 hours after the last session of the protocol

**Method of measurement**

Pressure gauge Japanese ALPK2

**4**

**Description**

Body fat percentage

**Timepoint**

At the beginning of the study, 24 hours before the start of the protocol and at the end of the protocol (6 weeks), 48 hours after the last session of the protocol

**Method of measurement**

Japan's Caliph Yagamy

**5**

**Description**

Maximum Oxygen Consumption

**Timepoint**

At the beginning of the study, 24 hours before the start of the protocol and at the end of the protocol (6 weeks), 48 hours after the last session of the protocol

**Method of measurement**

Test a mile running in the field

**6**

**Description**

Body mass index

**Timepoint**

Measuring serum BDNF levels at the beginning of the study, 24 hours before the start of the protocol and at the end of the protocol (6 weeks), 48 hours after the last session of the protocol

**Method of measurement**

Digital scales and gauges German Seca Model

**7**

**Description**

Waist to hip

**Timepoint**

At the beginning of the study, 24 hours before the start of the protocol and at the end of the protocol (6 weeks), 48 hours after the last session of the protocol

**Method of measurement**

Strip meter

**8**

**Description**

Lipid Profiles

**Timepoint**

At the beginning of the study, 24 hours before the start of the protocol and at the end of the protocol (6 weeks), 48 hours after the last session of the protocol

**Method of measurement**

Blood serum sampling, Special kits

**9**

**Description**

Dietary control of subjects

**Timepoint**

Once at the beginning of the research protocol (first week), again at the end of the week (Sixth week), three consecutive days(Includes two non-holiday days and one day end weekend)

**Method of measurement**

Using a 24-hour questionnaire, the dietary reminder was completed by the subjects, Calculated by the researcher by referring to the guidebook on nutritional value of Iranian diets

**Intervention groups**

**1**

**Description**

Control group: During this 6-week period, no activity will be involved, nor will any use be made.

**Category**

Prevention

**2**

**Description**

First Intervention group: High-Intensity interval training (40 m round trip speed for 6 weeks, 4 repetitions in the first week and 8 repetitions in the sixth week). Along with taking 2 grams of omega-3 jelly capsules made by Zahravi Iran Co. at breakfast and dinner1 gram plus one glass of water for 6 weeks.

**Category**

Prevention

**3**

**Description**

Second Intervention group: High-Intensity interval

training (40 m round trip speed for 6 weeks, 4 repetitions in the first week and 8 repetitions in the sixth week).

**Category**

Prevention

**4**

**Description**

Third Intervention group: with taking 2 grams of omega-3 jelly capsules made by Zahravi Iran Co. at breakfast and dinner 1 gram plus one glass of water for 6 weeks.

**Category**

Prevention

**Recruitment centers**

**1**

**Recruitment center**

**Name of recruitment center**

University of Sistan and Baluchestan

**Full name of responsible person**

Sajjad karimi pour

**Street address**

Nikbakht School of Engineering, University of Sistan and Baluchestan, University Boulevard

**City**

Zahdan

**Province**

Sistan-va-Balouchestan

**Postal code**

98798155

**Phone**

+98 54 3113 6456

**Email**

info@usb.ac.ir

**Sponsors / Funding sources**

**1**

**Sponsor**

**Name of organization / entity**

The University of Sistan and Baluchestan

**Full name of responsible person**

Sajjad karimi pour

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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**

The University of Sistan and Baluchestan

**Proportion provided by this source**

100

**Public or private sector**

Private

**Domestic or foreign origin**

Domestic

**Category of foreign source of funding**

*empty*

**Country of origin**

**Type of organization providing the funding**

Persons

**Person responsible for general inquiries**

**Contact**

**Name of organization / entity**

The University of Sistan and Baluchestan

**Full name of responsible person**

Sajjad karimi pour

**Position**

Student

**Latest degree**

Master

**Other areas of specialty/work**

Exercise Physiology

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**Person responsible for scientific inquiries**

**Contact**

**Name of organization / entity**

The University of Sistan and Baluchestan

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

The University of Sistan and Baluchestan

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Student

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**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**

Total data

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

6 months after the results are published

**To whom data/document is available**

Researchers working in academic institutions and scientific, People working in medicine and industry

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

For future research and any kind of analysis is allowed.

**From where data/document is obtainable**

Refer to postal address Nikbakht School of Engineering, University of Sistan and Baluchistan, University Boulevard- Zahedan- Sistan and Baluchestan for correspondence, Or email address

sajad.kerimi1819@gmail.com, Or call With mobile

number 09150369859, in the name of Sajjad Karimi pour to answer and receive the documents or data you want

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

After verifying the identity of the requesting person and the agreement of the professor's Help and Advisor also the relevant university, the main findings will be sent to the person.

**Comments**