

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

28 Jun 2026

### The effect of high intensity interval training and L-Arginine supplementation on serum level of Irisin and percent of body fat in obese and overweight men

#### Protocol summary

##### Summary

(1) Objectives: The aim of this study was to investigate the effect of high intensity interval training (HIIT) and L-Arginine (L-Arg) supplementation on serum level of Irisin and percent of body fat in obese and overweight subjects. (2) Design: 40 healthy obese and overweight young men volunteers (mean age  $24.58 \pm 6.52$  years and body mass index  $29.43 \pm 3.66$  kg/m<sup>2</sup>) were selected and they randomly assigned into 4 groups of HIIT, supplementation with L-Arg, L-Arg+HIIT and control. (3) Setting and conduct: Blood sampling and measurement of body fat percent was done 24 hours before and 48 hours after exercise training program and supplementation. (4) Being obese or overweight, lack of risk of cardiovascular and renal diseases were the main inclusion criteria. (5) Intervention: The training program consisted of 6 weeks of HIIT training (3 days/week). L-Arg supplementation consumed orally 6 gr/day. (6) Main outcome measures: It is expected that interventions are effective in improving obesity.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT2016041327365N1**

Registration date: **2016-05-08, 1395/02/19**

Registration timing: **retrospective**

Last update:

Update count: **0**

##### Registration date

2016-05-08, 1395/02/19

##### Registrant information

##### Name

Sadegh Cheragh Birjandi

##### Name of organization / entity

University of Birjand

##### Country

Iran (Islamic Republic of)

##### Phone

+98 56 3220 2032

##### Email address

s.birjandi@post.birjand.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

General Administration of Sport and Youth of South Khorasan

##### Expected recruitment start date

2015-02-04, 1393/11/15

##### Expected recruitment end date

2015-04-09, 1394/01/20

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

The effect of high intensity interval training and L-Arginine supplementation on serum level of Irisin and percent of body fat in obese and overweight men

##### Public title

The effect of high intensity interval training and L-Arginine on Brown adipose tissue

##### Purpose

Treatment

##### Inclusion/Exclusion criteria

Inclusion criteria: being obese or overweight, lack of risk of cardiovascular and renal diseases, avoiding the use of tobacco and alcohol, and lipid-lowering and blood sugar

drugs without using any dietary supplement including L-Arg. Exclusion criteria: not wanting to continue collaborating subjects during the study or practice and any damage during execution of training.

#### Age

From **21 years** old to **35 years** old

#### Gender

Male

#### Phase

N/A

#### Groups that have been masked

*No information*

#### Sample size

Target sample size: **40**

#### Randomization (investigator's opinion)

Randomized

#### Randomization description

#### Blinding (investigator's opinion)

Single blinded

#### Blinding description

#### Placebo

Used

#### Assignment

Parallel

#### Other design features

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Ethics committee of University of Birjand

##### Street address

University of Birjand, Birjand-Zahedan road 5Km,  
Birjand, South Khorasan State

##### City

Birjand

##### Postal code

97175-615

#### Approval date

2015-01-21, 1393/11/01

#### Ethics committee reference number

321

## Health conditions studied

### 1

#### Description of health condition studied

obesity

#### ICD-10 code

E66.0

#### ICD-10 code description

Obesity due to excess calories

## Primary outcomes

### 1

#### Description

Irisin

#### Timepoint

24 hours before intervention, 48 hours after intervention

#### Method of measurement

Human Elisa Kit

### 2

#### Description

Fat percent

#### Timepoint

24 hours before intervention, 48 hours after intervention

#### Method of measurement

Body analyzer

## Secondary outcomes

empty

## Intervention groups

### 1

#### Description

Intervention group 1: High intensity training, 3 times per week, for 6 weeks accompanied by corn starch as placebo

#### Category

Treatment - Other

### 2

#### Description

Intervention group 2: High intensity training 3 times per week for 6 weeks accompanied by L-Arginine consumption 6 gr/day for 6 weeks

#### Category

Treatment - Other

### 3

#### Description

Intervention group 3: L-Arginine consumption, 6 gr/day for 6 weeks.

#### Category

Treatment - Drugs

### 4

#### Description

Control group: Corn starch consumption as placebo 6 gr/day for 6 weeks

#### Category

Placebo

## Recruitment centers

## 1

### Recruitment center

**Name of recruitment center**

Islamic Azad University Birjand branch

**Full name of responsible person**

Kazem Cheragh Birjandi (Phd student, teacher)

**Street address**

Islamic Azad University Birjand branch, Ghaffari Avenue, Birjand

**City**

Birjand

## Sponsors / Funding sources

## 1

### Sponsor

**Name of organization / entity**

South Khorasan general Administration of Sport and Youth

**Full name of responsible person**

Zeynab Nezamdoost

**Street address**

Shahid Beheshti avenue 28, Birjand, South Khorasan

**City**

Birjand

**Grant name**

-

**Grant code / Reference number**

-

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

Yes

**Title of funding source**

South Khorasan general Administration of Sport and Youth

**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**

University of Birjand

**Full name of responsible person**

Marziyeh Saghebjoo

**Position**

Phd, . Associate Professor in Exercise Physiology

**Other areas of specialty/work****Street address**

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## Person responsible for scientific inquiries

### Contact

**Name of organization / entity**

University of Birjand

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Sadegh Cheragh Birjandi

**Position**

Phd student

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## Person responsible for updating data

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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*