

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 ± 6.52 years and body mass index 29.43 ± 3.66 kg/m²) 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

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Iran (Islamic Republic of)

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Email address

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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

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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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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