

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Jun 2026

Effect of Eight Weeks Anaerobic Interval Training on Irisin, Insulin and Lipid Profiles in Elderly Men

Protocol summary

Study aim

The purpose of this study is to investigate the effect of eight weeks' anaerobic interval training on the Irisin, Insulin and lipid profiles of elderly men

Design

In this quasi-experimental pre-test/post-test study, in a public call with a special form and confirmation of attendance by a physician, 26 healthy men in Semnan who are voluntarily will be selected and participated in the present study. The subjects using NCCS PASS11 software, Procedure menu, DOE submenu, will be randomly divided into two groups of anaerobic interval training and the control group.

Settings and conduct

26 healthy men in Semnan who are voluntarily will be selected and participated in the present study.

Participants/Inclusion and exclusion criteria

The inclusion criteria is as follows: age range 58-70 years the ability to execute the training protocol, being committed to the program, Exclusion criteria were: regular physical activity at last 6 months ago (<1 session/week), taking alcohol and smoking and certain medications in the last 3 months (steroid drugs such as cortisol, nandrolone and ...).

Intervention groups

The intervention group perform anaerobic interval training, which included 10 repetitions of 20 seconds running, 70-80% heart rate and 80 second active rest between repetitions for eight weeks and six sessions per week. Exercise intensity will be determined by heart rate and controlled by the researcher using polar-pulse meter. In order to comply with the Overload Principle, one repetition to be added to the volume of exercise each week until the eighth week when the repetitions reached 17 times in each session. Control group will be conditions as same as intervention group.

Main outcome variables

plasma levels of irisin;

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180912041018N1**

Registration date: **2018-10-13, 1397/07/21**

Registration timing: **registered_while_recruiting**

Last update: **2018-10-13, 1397/07/21**

Update count: **0**

Registration date

2018-10-13, 1397/07/21

Registrant information

Name

Rouhollah Haghshenas

Name of organization / entity

Semnan

Country

Iran (Islamic Republic of)

Phone

+98 23 3336 3494

Email address

rhm@semnan.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-09-23, 1397/07/01

Expected recruitment end date

2018-10-22, 1397/07/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of Eight Weeks Anaerobic Interval Training on Irisin, Insulin and Lipid Profiles in Elderly Men

Public title

Effect of Eight Weeks Anaerobic Interval Training on Irisin, Insulin and Lipid Profiles in Elderly Men

Purpose

Basic science

Inclusion/Exclusion criteria

Inclusion criteria:

Being committed to the program Age range 58-70 years Ability to execute the training protocol Committed to doing the program

Exclusion criteria:

perform regular exercise in 45 days ago are taking certain medications in the last 3 months (Steroid drugs such as cortisone, nandrolone and ...) smoking and alcohol consumption Having acute illness (acute articular disease and bone softness, bone fractures)

Age

From **58 years** old to **70 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

The subjects using NCCS PASS11 software, Procedure menu, DOE submenu, will be randomly divided into two groups

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 semnan university of medical sciences

Street address

Standard Square

City

Semnan

Province

Semnan

Postal code

35131-19111

Approval date

2017-07-12, 1396/04/21

Ethics committee reference number

IR.SEMUMS.REC.1396.98

Health conditions studied

1

Description of health condition studied

aging

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Irisin serum level

Timepoint

before the start of the exercise protocol and 48 hours after the last exercise session, 5 ml of blood samples were taken from the ventricle of the left arm while sitting and after 12 o'clock fasting.

Method of measurement

To measure serum levels of Irisin, a special human-grade Irisin kit for the crystalline made in China was used with sensitivity of 0.1 μm and according to ELISA method and in accordance with the instructions for the kit.

Secondary outcomes

1

Description

Lipid profiles

Timepoint

before the start of the exercise protocol and 48 hours after the last exercise session, 5 ml of blood samples were taken from the ventricle of the left arm while sitting and after 12 o'clock fasting.

Method of measurement

Lipid profiles (LDL, HDL and FBS) were also measured using Pars Azmon kit.

Intervention groups

1

Description

Intervention group: The intervention group performed anaerobic interval training, which included 10 repetitions of 20 seconds running, 70-80% heart rate and 80 second active rest between repetitions for eight weeks and six sessions per week. Exercise intensity was determined by heart rate and controlled by the researcher using polar-pulse meter. The subjects initially began to warm up and

stretch for seven minutes, and at the end they cooled down for five to ten minutes. In order to comply with the Overload Principle, one repetition was added to the volume of exercise each week until the eighth week when the repetitions reached 17 times in each session.

Category

Rehabilitation

2**Description**

The control group was under routine care and had similar conditions to the intervention group without participating in the exercise protocol.

Category

Lifestyle

Recruitment centers**1****Recruitment center****Name of recruitment center**

Semnan University of Medical Sciences

Full name of responsible person

Rouhollah Haghshenas

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Standard Square

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Email

rhm@semnan.ac.ir

Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Semnan University

Full name of responsible person

ali haghghi

Street address

Standard Square, Deputy of Research and Technology of Semnan University

City

Semnan

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Semnan

Postal code

35131-19111

Phone

+98 23 3365 4138

Email

Research.VC@semnan.ac.ir

Web page address

<http://research.semnan.ac.ir/index.aspx?fkeyid=&siteid=3&pageid=3555>

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

Yes

Title of funding source

Semnan University

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**

Semnan University

Full name of responsible person

Rouhollah Haghshenas

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

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

Semnan University

Full name of responsible person

Rouhollah Haghshenas

Position

Assistant professor

Latest degree

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Other areas of specialty/work

Physiology

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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

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

Only the information of original outcome to be shared.

When the data will become available and for how long

6 month after published paper.

To whom data/document is available

Resercher

Under which criteria data/document could be used

For writing review article

From where data/document is obtainable

rhm@semnan.ac.ir

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

After receiving mail

Comments

Person responsible for updating data

Contact

Name of organization / entity

Semnan University

Full name of responsible person

Rouhollah Haghshenas

Position

Assistance Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

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