

Clinical Trial Protocol

Iranian Registry of Clinical Trials

09 Jun 2026

The effect of interval training and high-intensity resistance training on some serum myokine and physical fitness factors in overweight and obese men

Protocol summary

Study aim

This study aimed to investigate the effect of interval training and high-intensity resistance training on some serum myokine and physical fitness factors in overweight and obese men.

Design

The eight-week training program, including HIIT training with a maximum heart rate of 95-85% and high-intensity resistance training, was performed in a circular session of 80-85 RM for three sessions per week. The sample size was obtained by G power software according to the effect size of 0.27, power of 80.0% and alpha of 0.05 equal to 30 people. These individuals were randomly selected and randomly assigned to three groups: HIIT training (10 people), high-intensity resistance training group (10 people), and control group (10 people). Blood sampling and physical indicators were performed before and after the training period.

Settings and conduct

The place to study in the gym in Bardaskan. Subjects will be present at the gym (5 pm).

Participants/Inclusion and exclusion criteria

30 men with the criterion of not having a history of cardiovascular disease, diabetes, hypertension, liver, hypothyroidism Thyroid and physical injury and orthopaedic problems, as well as regular exercise in the six months leading up to the study.

Intervention groups

High-intensity intermittent exercise group: A 20-meter distance in 30 seconds of running back and forth with 85-95% maximum heart rate running and then 30 seconds of walking. High-intensity resistance training group: Subjects performed leg presses, chest presses, chest thighs, forearms, forearms, forearms, boats and long stretches with 85-80% intensity, a maximum repetition in a circle with 8- 6 repetitions and 60-60 seconds of rest between each movement. Resting

between each round of circles was 120 seconds. The control group did not intervene.

Main outcome variables

Irisin; fibroblast growth factor 21

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200412047049N1**

Registration date: **2020-04-17, 1399/01/29**

Registration timing: **retrospective**

Last update: **2020-04-17, 1399/01/29**

Update count: **0**

Registration date

2020-04-17, 1399/01/29

Registrant information

Name

morteza hajinia

Name of organization / entity

Hakim sabzevari

Country

Iran (Islamic Republic of)

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+98 51 5543 4348

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m.hajinia1361@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-06-15, 1398/03/25

Expected recruitment end date

2019-08-31, 1398/06/09

Actual recruitment start date

2019-06-15, 1398/03/25

Actual recruitment end date

2019-08-31, 1398/06/09

Trial completion date

2019-08-31, 1398/06/09

Scientific title

The effect of interval training and high-intensity resistance training on some serum myokine and physical fitness factors in overweight and obese men

Public title

The effect of training on myokine

Purpose

Prevention

Inclusion/Exclusion criteria**Inclusion criteria:**

Overweight and obese men 30 to 45 years old

Exclusion criteria:

No history of cardiovascular disease, diabetes, high blood pressure, liver, thyroid hypothyroidism and physical damage, orthopedic problems Lack of regular exercise in the six months leading up to the time

Age

From **30 years** old to **45 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **50**

Actual sample size reached: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

The simple random method, the ball-throwing method was used. Each name removed from the container was placed in the interval, resistance training groups, and control.

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 in Research, Hakim Sabzevari

University

Street address

Andisheh Town - End of Andisheh 5

City

Sabzevar

Province

Razavi Khorasan

Postal code

9613711111

Approval date

2020-01-21, 1398/11/01

Ethics committee reference number

IR.HSU.REC.1399.003

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

Obesity and overweight

ICD-10 code

E66.0

ICD-10 code description

Obesity due to excess calories

Primary outcomes**1****Description**

IRISIN

Timepoint

Baseline and after eight weeks

Method of measurement

Eliza Laboratory Method

2**Description**

FGF21

Timepoint

Baseline and after eight weeks

Method of measurement

Eliza Laboratory Method

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

VO2MAX

Timepoint

Baseline and after eight weeks

Method of measurement

Rockport test

2**Description**

Body mass index

Timepoint

Baseline and after eight weeks

Method of measurement

Digital scale and meter

3

Description

Body fat percentage

Timepoint

Baseline and after eight weeks

Method of measurement

Caliper

4

Description

Anaerobic power

Timepoint

Baseline and after eight weeks

Method of measurement

Rast test

5

Description

Muscle strength

Timepoint

Baseline and after eight weeks

Method of measurement

Leg press and bench press

Intervention groups

1

Description

Intervention group: High intensity interval training group : A distance of 20 meters in 30 seconds as a round trip with 85-95% of maximum heart rate and then 30 seconds of walking.

Category

Lifestyle

2

Description

Intervention group: High intensity resistance training group : Subjects performed leg presses, chest presses, back thighs, forearms, forearms, back, arms, boats, and sit-ups with an intensity of 85-80% of a maximum repetition in a circle with 6-8 repetitions and 60-30 seconds. Resting between each round of circles was 120 seconds.

Category

Lifestyle

3

Description

Control group: The control group did not intervene.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Shafa Laboratory

Full name of responsible person

Dr. Hassan Jabbari

Street address

Central square, Pasazh pzhskan

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Hakim Sabzevari University

Full name of responsible person

Dr. Amir Hossein Haghighi

Street address

Sabzevar, Tohid Shahr, Sabzevar Hakim University

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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

Hakim Sabzevari 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

Hakim Sabzevari University

Full name of responsible person

Morteza Hajinia

Position

PHD student

Latest degree

Master

Other areas of specialty/work

Physiology

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Full name of responsible person

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Position

Associate Professor, Faculty of Sports Sciences,
Hakim Sabzevari University

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Other areas of specialty/work

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Latest degree

Master

Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

The information is confidential

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

No - There is not 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

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

The consent form will be provided as an appendix to the
dissertation

When the data will become available and for how long

6 months after printing the results

To whom data/document is available

Everyone has access to the data

Under which criteria data/document could be used

No plagiarism

From where data/document is obtainable

Contact Author / Supervisor

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

One week after sending the request to the e-mail and the
applicant's commitment not to use the data directly

Comments