Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Comparison of the effect of aerobic interval training, resistance training and combined training on glucose homeostasis, preptin, osteocalcin and adiponectin in obese inactive men

Protocol summary

Study aim
Comparison of the effect of aerobic interval training, resistance training and combined training on glucose homeostasis, serum levels of preptin, osteocalcin and adiponectin in obese sedentary men

Design
Of the eligible population, 44 people voluntarily selected as samples and randomly divided into four groups of 11 (aerobic interval training; resistance training; aerobic interval training + resistance training; and Control).

Settings and conduct
The study was conducted as a public-call and announcement in the city of Mashhad for all individuals, and individuals contacted and have gotten information by the telephone number provided in the announcement for initial coordination (meeting time and get more information).

Participants/Inclusion and exclusion criteria
Obese men 1- Subjects are in the age range of 50-38 years. 2- The BMI of the subjects is between 35-30 kg / m2. 3. The percentage of body fat in the subjects is equal to and above 25%. 4- Subjects do not have regular exercise during the last 6 months.

Intervention groups
aerobic interval training; resistance training; aerobic interval training + resistance training; and Control

Main outcome variables
Fasting insulin, fasting glucose, insulin resistance, glycosylated hemoglobin, perpitin, osteocalcin, adiponectin, maximum oxygen intake, body mass index, body fat percentage, waist to hip ratio

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20170102031720N3**
Registration date: **2018-12-02, 1397/09/11**
Registration timing: **retrospective**

Last update: **2018-12-02, 1397/09/11**
Update count: **0**

Registration date
2018-12-02, 1397/09/11

Registrant information

Name

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 51 3880 3000

Email address
rmohammadrahimi@mail.um.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2018-10-07, 1397/07/15

Expected recruitment end date
2018-11-11, 1397/08/20

Actual recruitment start date
2018-10-07, 1397/07/15

Actual recruitment end date
2018-11-11, 1397/08/20

Trial completion date
2018-11-16, 1397/08/25

Scientific title
Comparison of the effect of aerobic interval training, resistance training and combined training on glucose homeostasis, preptin, osteocalcin and adiponectin in obese inactive men

Public title
Investigation of the effect of different exercises on glucose homeostasis
Purpose
Supportive
Inclusion/Exclusion criteria
Inclusion criteria:
Subjects do not have regular exercise during the past 6 months Body mass index is between 30-35 kg / m2
Exclusion criteria:
Having orthopedic problems People with heart failure
Age
From **38 years** old to **50 years** old
Gender
Male

Phase
N/A
Groups that have been masked

- Participant
- Outcome assessor
- Data and Safety Monitoring Board

Sample size
Target sample size: **44**
Actual sample size reached: **44**
Randomization (investigator's opinion)
Randomized
Randomization description
Simple randomization, block
Blinding (investigator's opinion)
Double blinded
Blinding description
Participants, Outcome Assessment and DSMB are unaware of the allocation of study groups.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Ferdowsi University of Mashhad
Street address
Mashhad, Azadi Square, Paradise Daneshgah, Faculty of Sport Sciences
City
Mashhad
Province
Razavi Khorasan
Postal code
9596116856
Approval date
2018-09-22, 1397/06/31
Ethics committee reference number
IR.MUMS.REC.1397.203

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
Preptin, sample blood
Timepoint
Before and after intervention
Method of measurement
laboratory kit

2

Description
Osteocalcin, Blood sampling
Timepoint
Before and after intervention
Method of measurement
Laboratory kit

3

Description
Adiponectin, blood sampling
Timepoint
Before and after intervention
Method of measurement
laboratory kit

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group 1: aerobic interval training; 3 session per week for 12 weeks(36 sessions) with intensity of 30-80% heart rate reserve
Category
Rehabilitation

2

Description

Intervention group 2: resistance training; 3 session per week for 12 weeks with 40-80% 1RM.

Category

Prevention

3

Description

Intervention group 3: aerobic interval training + resistance training; the training of two groups in the form of a meeting among

Category

Rehabilitation

4

Description

Control group: had no activity during the course of the study and were inactive (inactive lifestyle).

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Medical Diagnostic Center

Full name of responsible person

Dr. Majid Sezavar

Street address

No 15, Aref 5, Aref St, Ahmadabad

City

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9596116856

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+98 51 3843 6558

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drsezavarlab@yahoo.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Ferdowsi University of Mashhad

Full name of responsible person

Dr. Nahid Bizhe

Street address

Paradis Daneshgah, Azadi Square

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bigeh@um.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Ferdowsi University of Mashhad

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

Ferdowsi University of Mashhad

Full name of responsible person

Gholam Rasul Mohammad Rahimi

Position

PhD Student

Latest degree

Master

Other areas of specialty/work

Physiology

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Person responsible for updating data

Contact
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available
Study Protocol
No - There is not a plan to make this available
Statistical Analysis Plan
No - There is not a plan to make this available
Informed Consent Form
No - There is not a plan to make this available
Clinical Study Report
No - There is not a plan to make this available
Analytic Code
Not applicable
Data Dictionary
Not applicable