

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

27 Jun 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 / m<sup>2</sup>. 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, perptin, 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 / m<sup>2</sup>

### 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**

Mashhad

**Province**

Razavi Khorasan

**Postal code**

9596116856

**Phone**

+98 51 3843 6558

**Email**

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

**City**

Mashhad

**Province**

Razavi Khorasan

**Postal code**

9596116856

**Phone**

+98 51 3880 5403

**Email**

bige@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

**Street address**

Paradis Daneshgah, Azadi Square

**City**

Mashhad

**Province**

Razavi Khorasan

**Postal code**

9596116856

**Phone**

+98 51 3880 5403

**Email**

rmohammadrahimi@mail.um.ac.ir

**Person responsible for scientific 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

**Street address**

Azadi Squer

**City**

Mashhad

**Province**

Razavi Khorasan

**Postal code**

9596116856

**Phone**

+98 51 3880 5403

**Email**

rmohammadrahimi@mail.um.ac.ir

**City**

Mashhad

**Province**

Razavi Khorasan

**Postal code**

9596116856

**Phone**

+98 51 3880 5403

**Email**

rmohammadrahimi@mail.um.ac.ir

**Person responsible for updating data****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

**Street address**

Azadi Squire

**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