

Clinical Trial Protocol

Iranian Registry of Clinical Trials

05 Jul 2026

Comparison of the effect of 8 weeks endurance, resistance and concurrent training on irisin, some glycemic indexes and the visceral fat to muscle mass ratio on sedentary obese women

Protocol summary

Study aim

The purpose of this study was to compare the effects of 8 weeks endurance, resistance and concurrent training on irisin, some glycemic indexes and visceral fatty acids ratios on the muscular mass of obese Inactive women.

Design

In this study, 33 obese women, chosen according to inclusion criteria, were randomly divided into three homogeneous groups including endurance training, resistance training, and concurrent training through random number table.

Settings and conduct

The subjects do exercise with 50 to 70% VO₂max for the endurance group and 60 to 80% of 1RM for the resistance group and the combination of both for concurrent group. The exercise will be done through 40-45 minute sessions in the gym, 3 sessions per week for 8 weeks.

Participants/Inclusion and exclusion criteria

All participants are non-active and obese women who participate after getting informed consent. They do not have a sports ban, no specific disease, not using a particular drug, and they must complete the training program.

Intervention groups

Interventions include endurance training, resistance training and concurrent training in three separate groups.

Main outcome variables

Before and after the training period, physical fitness indicators such as maximum oxygen consumption, body composition (BMI), fat percentage and visceral fat to muscle mass ratio are measured and blood profiles such as serum irisin, fasting glucose, insulin and insulin resistance is evaluated.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20171029037076N1**

Registration date: **2017-12-11, 1396/09/20**

Registration timing: **retrospective**

Last update: **2017-12-11, 1396/09/20**

Update count: **0**

Registration date

2017-12-11, 1396/09/20

Registrant information

Name

Zahra Niknam

Name of organization / entity

University of Tabriz

Country

Iran (Islamic Republic of)

Phone

+98 41 3386 6583

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Recruitment status

Recruitment complete

Funding source

Vice Chancellor for research, Tabriz University

Expected recruitment start date

2016-07-10, 1395/04/20

Expected recruitment end date

2016-09-08, 1395/06/18

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effect of 8 weeks endurance, resistance and concurrent training on irisin, some glycemic indexes and the visceral fat to muscle mass ratio on sedentary obese women

Public title

The effect of sport exercises on obese women

Purpose

Basic science

Inclusion/Exclusion criteria**Inclusion criteria:**

Obese women being Inactive Informed consent Not using any special drug

Exclusion criteria:

Failure to observe the training program Specific disease Physical injury

Age

From **30 years** old to **50 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **33**

Randomization (investigator's opinion)

Randomized

Randomization description

In this study, randomization of individuals was performed based on simple random numbers; which was using the random numbers table.

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 Tabriz University of Medical Sciences

Street address

No. 2, Central Building, Tabriz University of Medical Sciences, Golghast St, Tabriz

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5169993434

Approval date

2010-08-20, 1389/05/29

Ethics committee reference number

IR.TABZMED.REC.1395.927

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

Obesity

ICD-10 code

E66

ICD-10 code description

Obesity

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

Irisin

Timepoint

Before and after the initiation of the intervention (training)

Method of measurement

Specific kit

2**Description**

Fasting Glucose

Timepoint

Before and after the initiation of the intervention (training)

Method of measurement

Specific kit

3**Description**

Insulin

Timepoint

Before and after the initiation of the intervention (training)

Method of measurement

Specific kit

4**Description**

Insulin resistance

Timepoint

Before and after the initiation of the intervention (training)

Method of measurement

Using formula

5

Description

Visceral fat to muscle mass ratio

Timepoint

Before and after the initiation of the intervention (training)

Method of measurement

Using the impedance device and corresponding formulas

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: Endurance training with 50-70% maximal oxygen consumption through 40-45 minute sessions, 3 sessions per week, for 8 weeks.

Category

N/A

2

Description

Intervention group 2: Resistance training with 60-80% of 1RM through 40-45 minute sessions, 3 sessions per week, for 8 weeks.

Category

N/A

3

Description

Intervention group 3: Concurrent training with 50-70% maximal oxygen consumption in endurance training part and with 60-80% of 1RM in resistance training part through 40-45 minute sessions, 3 sessions per week, for 8 weeks.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Tabriz University

Full name of responsible person

Vahid Sari-Sarraf

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Faculty of Physical Education, Tabriz University, 29 Bahman Avenue, Tabriz

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice Chancellor for research of Tabriz University

Full name of responsible person

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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

Vice Chancellor for research of Tabriz 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

University of Tabriz

Full name of responsible person

Zahra Niknam

Position

Phd Candidate in Exercise Physiology

Latest degree

Master

Other areas of specialty/work

Others

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Web page address**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**Undecided - It is not yet known if there will be a plan to
make this available**Statistical Analysis Plan**Undecided - It is not yet known if there will be a plan to
make this available**Informed Consent Form**Undecided - It is not yet known if there will be a plan to
make this available**Clinical Study Report**

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable