Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 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)

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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 scienece
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
City
Tabriz
Province
East Azarbaijan
Postal code
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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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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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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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