

# 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% VO<sub>2</sub>max 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

##### Email address

zniknam@tabrizu.ac.ir

##### 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

**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

##### **Street address**

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

##### **City**

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gloryofleaves61@yahoo.com

## **Sponsors / Funding sources**

### 1

#### **Sponsor**

##### **Name of organization / entity**

Vice Chancellor for research of Tabriz University

##### **Full name of responsible person**

Dr Mohammad Moghaddam Vahed

##### **Street address**

Faculty of Physical Education & Sports Sciences, Tabriz University, 29 Bahman Ave, Tabriz

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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****Person responsible for scientific inquiries****Contact****Name of organization / entity**

Tabriz University of Medical Sciences

**Full name of responsible person**

Dr Vahid Sari-Sarraf

**Position**

PhD in Exercise Physiology

**Latest degree**

Specialist

**Other areas of specialty/work**

Immunology

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**Web page address****Person responsible for updating data****Contact****Name of organization / entity**

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**Position**

PhD Candidate in Exercise Physiology

**Latest degree**

Master

**Other areas of specialty/work**

Others

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**Fax****Email**

zniknam@tabrizu.ac.ir

**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