

Clinical Trial Protocol

Iranian Registry of Clinical Trials

30 Jun 2026

Hormonal Adaptations to Endurance Training Versus Resistance in Postmenopausal Obese Women

Protocol summary

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Summary

This study examined the effects of resistance and endurance training on serum leptin and adiponectin levels and insulin resistance index in sedentary postmenopausal obese women. For this purpose; 24 sedentary menopausal obese (BMI ≥ 30.53 Kg/m²) women (mean aged 52.25 ± 3 years old) randomly assigned to endurance and resistance training and control groups, studied before and after 10 weeks of resistance (40-60% of one-repetition maximum) and swimming endurance training (40-60% of maximal heart rate), 3 days per week. Leptin and adiponectin levels, HOMA-IR and anthropometric measurements were assessed before and after training.

Recruitment status

Recruitment complete

Funding source

investigator

Expected recruitment start date

2008-06-21, 1387/04/01

Expected recruitment end date

2009-01-20, 1387/11/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2012090210709N1**

Registration date: **2013-06-28, 1392/04/07**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2013-06-28, 1392/04/07

Registrant information

Name

Najmeh Rezaeian

Name of organization / entity

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Country

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Phone

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Email address

Scientific title

Hormonal Adaptations to Endurance Training Versus Resistance in Postmenopausal Obese Women

Public title

exercise training and adipokines

Purpose

Health service research

Inclusion/Exclusion criteria

Inclusion criteria: 45-60 years old women; postmenopausal; obese (BMI > 30 kg/m²); healthy (without no history of diabetes, cardiovascular and neurological diseases); sedentary Exclusion criteria: women younger than 45 and older than 60; non-menopausal; not obese; with disease effecting on process and result of study; athletes

Age

From **45 years** old to **60 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 24

Randomization (investigator's opinion)

Randomized

Randomization description

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

Alzahra University

Street address

Alzahra University, Deh Vanak, Tehran

City

Tehran

Postal code

-

Approval date

2009-06-15, 1388/03/25

Ethics committee reference number

25/3/88 / 456 / ٥ د

Health conditions studied

1

Description of health condition studied

Insulin resistance

ICD-10 code

E10, E11,

ICD-10 code description

Diabetes mellitus, Obesity and other hyperalimentation

Primary outcomes

1

Description

leptin

Timepoint

before and after 48 hours after

Method of measurement

elisa

2

Description

adiponectin

Timepoint

before and 48 hours after training

Method of measurement

elisa

Secondary outcomes

1

Description

insulin resistance index (HOMA-IR)

Timepoint

before and 48 hours after training

Method of measurement

Fasting serum glucose concentrations were measured by glucose oxidase method using a Beckman Glucose Analyzer (Beckman Instruments, Irvine, CA). Insulin was measured by radioimmunoassay with commercial kits (Immuno Nucleo, Stillwater, MN). The homeostasis model assessment of insulin resistance (HOMA-IR) was calculated using the HOMA-IR equation: [fasting insulin (μ U/mL) \times fasting glucose (mmol/L)/ 18]/ 22.5

Intervention groups

1

Description

The endurance training group: Subjects participated in 10 weeks of endurance swimming training/ walking in water (pool) at an intensity corresponding to 40-60% of maximal heart rate, 3 days per week.

Category

Lifestyle

2

Description

control group: without Intervention

Category

Lifestyle

3

Description

The resistance training group: subjects participated in 10 weeks of resistance training, 3 days per week, including: three sets (with 60-90 second rest intervals) of 10 to 12 repetitions, at an intensity corresponding to 40- 60% of one-repetition maximum.

Category

Lifestyle

Recruitment centers

1

Recruitment center

Name of recruitment center

Tavanir sports complex

Full name of responsible person

Street address
City
Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Vice Chancellor for Research of Alzahra University

Full name of responsible person
Dr Ensieh Zahedi

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Alzahra University, Dehvanak, Tehran

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Tehran

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 Alzahra University

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity
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Full name of responsible person
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Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

