

Clinical Trial Protocol

Iranian Registry of Clinical Trials

03 Jul 2026

Study of the effect of eight weeks of Pilates training on C-reactive protein, insulin resistance and body composition in middle-age obese women

Protocol summary

Study aim

The purpose of this study was to investigate the effect of eight weeks of Pilates training on C-reactive protein, insulin resistance and body composition in middle-age obese women.

Design

In a randomized clinical trial design, twenty obese middle-aged women were randomly classified into two control and experimental groups.

Settings and conduct

All training sessions were performed under the supervision of an experienced physical trainer, and were conducted at the Mahabad Islamic Azad University athletic and fitness center in 2016.

Participants/inclusion and exclusion criteria

Some of the inclusion criteria were obese middle-aged women with aged 35-50 years and without chronic diseases. Moreover, the criteria of exclusion were existence of any damage and uncontrolled intake of any supplement or drug.

Intervention groups

The experimental group participated in Pilates training three sessions a week for eight weeks, that each session lasting for 60 minutes. While, control group did not do any special exercise.

Main outcome variables

For all subjects, body composition indexes, insulin resistance and C-reactive protein were assessed prior to and after training program.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20120806010512N8**

Registration date: **2018-05-10, 1397/02/20**

Registration timing: **retrospective**

Last update: **2018-05-10, 1397/02/20**

Update count: **0**

Registration date

2018-05-10, 1397/02/20

Registrant information

Name

Sirvan Atashak

Name of organization / entity

Islamic Azad University-Mahabad Branch

Country

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2016-12-21, 1395/10/01

Expected recruitment end date

2017-03-15, 1395/12/25

Actual recruitment start date

2016-12-21, 1395/10/01

Actual recruitment end date

2017-03-15, 1395/12/25

Trial completion date

empty

Scientific title

Study of the effect of eight weeks of Pilates training on C-reactive protein, insulin resistance and body composition in middle-age obese women

Public title

The effect of Pilates training on cardiovascular risk factors in obese women

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria:

aged 25-35years body mass index (BMI) equal or greater to 30 No current chronic health problems

Exclusion criteria:

Individuals with history of acute or chronic health conditions such as cardiovascular or other diseases those who used any drug medication

Age

From **35 years** old to **50 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **20**

Actual sample size reached: **20**

Randomization (investigator's opinion)

Randomized

Randomization description

Simple randomization with flip the coin

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 the Mahabad Islamic Azad University

Street address

Islamic Azad University, Mahabad Branch, university Street

City

Mahabad

Province

West Azarbaijan

Postal code

5913933137

Approval date

2016-10-01, 1395/07/10

Ethics committee reference number

94/ IR.IAU.MAHABAD.REC.09210

Health conditions studied

1

Description of health condition studied

cardiovascular disease risk factors

ICD-10 code

Z50.1

ICD-10 code description

other physical therapy

Primary outcomes

1

Description

C-reactive Protein level

Timepoint

At the beginning of the study and prior of training and after training program

Method of measurement

The C-reactive Protein level was measured with the autoanalyzer and Diagnostics Biochem kites.

2

Description

insulin resistance index

Timepoint

At the beginning of the study and prior of training and after training program

Method of measurement

Insulin resistance was calculated via the homeostasis model assessment index (HOMA-IR) formula.

Secondary outcomes

1

Description

body composition indices

Timepoint

At the beginning of the study and prior of training and after training program

Method of measurement

The Waist to hip ratio (WHR) was calculated as waist circumference divided by that of the hip and Fat density (fat mass) was predicted from the skin-fold measurements taken using a caliper at the triceps, abdominal, and super iliac sites.

Intervention groups

1

Description

Intervention group: The experimental group participated in Pilates training three sessions a week for eight weeks, that each session lasting for 60 minute

Category

Lifestyle

2

Description

Control group: In the control group, participants were advised to maintain their normal lifestyle during the study and did not do any special exercise

Category

Lifestyle

Recruitment centers

1

Recruitment center

Name of recruitment center

Islamic Azad University, Mahabad Branch

Full name of responsible person

Dr Sirvan Atashak

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Islamic Azad University of Mahabad

Full name of responsible person

Dr. Worya Karimi

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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

Islamic Azad University of Mahabad

Proportion provided by this source

100

Public or private sector

Private

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

Islamic Azad University of Mahabad

Full name of responsible person

Dr Sirvan Atashak

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Exercise Physiology

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Person responsible for scientific inquiries

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

There are no such data in the present study

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

Not applicable

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable