Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

Study of the effect of eight weeks of Pilates training on C-reative 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 was 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 minute. 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
Iran (Islamic Republic of)

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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-reative 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 autoanalaizer 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
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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
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Other areas of specialty/work
Exercise Physiology
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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