

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 Jun 2026

Effect of 6 months aerobic exercise training on markers of bone metabolism in middle-aged women

Protocol summary

Summary

The purpose of this study was to examine the effects of 6-Month aerobic exercise training on markers of bone metabolism in middle-aged women. A total of 19 healthy middle-aged female university workers were randomly assigned into aerobic exercise training or control group. The exercise protocol included aerobic (endurance) exercise training for 6 months and 3 sessions per week and every session lasted to 60 minutes and with intensity of 55-65 percent of heart rate reserve. Primary outcome measure was aerobic training.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201010034859N1**
Registration date: **2010-10-24, 1389/08/02**
Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2010-10-24, 1389/08/02

Registrant information

Name

Nahid Bijeh

Name of organization / entity

Ferdowsi University of Mashhad

Country

Iran (Islamic Republic of)

Phone

+98 51 3880 5405

Email address

bijeh@ferdowsi.um.ac.ir

Recruitment status

Recruitment complete

Funding source

Deputy Research, Ferdowsi University of Mashhad

Expected recruitment start date

2007-07-23, 1386/05/01

Expected recruitment end date

2007-10-23, 1386/08/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of 6 months aerobic exercise training on markers of bone metabolism in middle-aged women

Public title

Effect of exercise training on bone metabolism

Purpose

Diagnostic

Inclusion/Exclusion criteria

Inclusion criteria: Healthy, No drug based on the Health questionnaire, Non-menopausal, No participating in any exercise program. Exclusion criteria: Presence of any illness, menopause, drug consumption, smoking, participating in any exercise program

Age

From **37 years** old to **47 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **19**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Double blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ferdowsi University of Mashhad

Street address

Azadi Square

City

Mashhad

Postal code

9177948979

Approval date

empty

Ethics committee reference number

1686

Health conditions studied

1

Description of health condition studied

Osteoporosis

ICD-10 code

M81.8

ICD-10 code description

Other osteoporosis

Primary outcomes

1

Description

aerobic exercise training

Timepoint

Pre-exercise and post-exercise

Method of measurement

Aerobic power

Secondary outcomes

1

Description

parathyroid hormone

Timepoint

48 hours before exercise program and 48 hours after the

last session after 6 months exercise

Method of measurement

Blood sample

2

Description

bone-alkaline phosphatase

Timepoint

48 hours before exercise program and 48 hours after the last session after 6 months exercise

Method of measurement

Blood sample

3

Description

Calcium

Timepoint

48 hours before exercise program and 48 hours after the last session after 6 months exercise

Method of measurement

Blood sample

Intervention groups

1

Description

The exercise protocol included aerobic (endurance) exercise training lasted to 6 months and 3 sessions per week and every session lasted to 60 minutes and with intensity of 55-65 percent of heart rate reserve

Category

Other

2

Description

control:Lack of exercise participation

Category

Diagnosis

Recruitment centers

1

Recruitment center

Name of recruitment center

Ferdowsi University of Mashhad

Full name of responsible person

Nahid Bijeh

Street address

Physical education faculty, Ferdowsi University of Mashhad

City

Mashhad

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Deputy Research Ferdowsi University of Mashhad

Full name of responsible person

Nahid Bijeh

Street address

Physical education faculty, Ferdowsi University of Mashhad

City

Mashhad

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Deputy Research Ferdowsi University of Mashhad

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**

Physical Education Faculty, Ferdowsi University of Mashhad

Full name of responsible person

Nahid Bijeh

Position

PhD

Other areas of specialty/work**Street address**

Physical Education Faculty, Ferdowsi University of Mashhad

City

Mashhad

Postal code

9177948979

Phone

+98 51 1883 3910

Fax

+98 51 1882 9580

Email

bijeh@ferdowsi.um.ac.ir

Web page address

Person responsible for scientific inquiries

Contact**Name of organization / entity**

Ferdowsi University of Mashhad

Full name of responsible person

Nahid Bijeh

Position

PhD, Physical Education Faculty, Ferdowsi University of Mashhad

Other areas of specialty/work**Street address**

Physical education faculty ferdowsi university of mashhad

City

Mashhad

Postal code

9177948979

Phone

+98 51 1883 3910

Fax

+98 51 1882 9580

Email

bijeh@ferdowsi.um.ac.ir

Web page address

Person responsible for updating data

Contact**Name of organization / entity**

Physical Education Faculty, Ferdowsi University of Mashhad

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Web page address

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

Data Dictionary

empty