

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effects of long-term aerobic training on levels of high sensitivity-C reactive protein, glycosylated hemoglobin, Insulin, lipid parameters and glucose blood level in women with type 2 diabetes

Protocol summary

Summary

This study aimed to investigate the effects of eight weeks of aerobic training on levels of high sensitivity-C reactive protein (HS-CRP), glycosylated hemoglobin, insulin, lipid parameters, and blood glucose level in women with type 2 diabetes. The population of this study was diabetic women who referred to Diabetes Center in Mashhad Shahid Ghodsi's Health Center. Twenty two volunteers were selected following primary screening by age and status of the medicine they were receiving and were randomly assigned into two experimental and control groups. All participants in the study were women with type 2 diabetes whose disease lasted at least for two years and none of them had chronic kidney disease, thyroid disorder, increased blood pressure and coronary artery diseases. The subjects in the experimental group received eight weeks (three sessions per week) of aerobic exercise training with intensity of 60 percent of maximum heart rate. Subjects in the control group did not receive the intervention. Forty eight hours before the start of the study and also after the last training session, after 12 hours of fasting, 10 cc blood was collected from the patients' brachial vein in a resting position to measure biochemical parameters.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2012110611387N1**

Registration date: **2013-03-11, 1391/12/21**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2013-03-11, 1391/12/21

Registrant information

Name

Akram Alizadeh

Name of organization / entity

Ferdowsi University of Mashhad

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Iran (Islamic Republic of)

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+98 51 1878 9008

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Recruitment status

Recruitment complete

Funding source

Faculty of Physical Education Ferdowsi University of Mashhad

Expected recruitment start date

2012-05-01, 1391/02/12

Expected recruitment end date

2012-07-02, 1391/04/12

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of long-term aerobic training on levels of high sensitivity-C reactive protein, glycosylated hemoglobin, Insulin, lipid parameters and glucose blood level in women with type 2 diabetes

Public title

The effect of Aerobic Training on laboratory parameters in patients with type 2 diabetes

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria: diabetes, according to physician, willingness to participate in the study Exclusion criteria: patients with kidney, liver and respiratory therapy, patients treated with insulin, smoking, becoming exposed to severe stress (infections, diabetic foot surgery, severe emotional stress), depression and recreational drug use, risk of kidney stones having chronic kidney disease

Age

From **45 years** old to **55 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **20**

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

Vice Chancellor For Research, Ferdowsi University

Street address

Mashhad Ferdowsi University, Faculty of Physical Education and Sports Science, Azadi Square

City

Mashhad

Postal code

Approval date

2011-04-19, 1390/01/30

Ethics committee reference number

20661

Health conditions studied

1

Description of health condition studied

Type 2 diabetes

ICD-10 code

E10, E11,

ICD-10 code description

Diabetes mellitus

Primary outcomes

1

Description

Hs-CRP

Timepoint

Before and after the intervention

Method of measurement

Strengthened immune-turbidimetric for measuring two points with a photometer

2

Description

glycosylated hemoglobin

Timepoint

Before and after the intervention

Method of measurement

Colorimetry

Secondary outcomes

1

Description

Insulin

Timepoint

Before and after the intervention

Method of measurement

Radio Immune Assay

2

Description

Triglyceride

Timepoint

Before and after the intervention

Method of measurement

blood test (mg per deciliter)

3

Description

High-density lipoprotein (HDL)

Timepoint

Before and after the intervention

Method of measurement

blood test (mg per deciliter)

4

Description

Low-density lipoprotein (LDL)

Timepoint

Before and after the intervention

Method of measurement

blood test (mg per deciliter)

5

Description

Total cholesterol

Timepoint

Before and after the intervention

Method of measurement

blood test (mg per deciliter)

6

Description

Fasting Blood Sugar

Timepoint

Before and after the intervention

Method of measurement

blood test (mg per deciliter)

Intervention groups

1

Description

In control group: subjects were without training during eight weeks

Category

N/A

2

Description

In experimental group: The exercise program consisted of eight weeks of aerobic training (3 sessions per week) with 60% maximum heart rate of the subjects

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Shahid Ghodsi Health Centers of Mashhad

Full name of responsible person

Nahid Bijeh

Street address

College of Ferdowsi University of Mashhad, Faculty of Physical Education and Sport Sciences, Azadi square

City

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice Chancellor For Research, Ferdowsi University

Full name of responsible person

Nahid Bijeh

Street address

College of Ferdowsi University of Mashhad, Faculty of Physical Education and Sport Sciences, Azadi square

City

Mashhad

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, Ferdowsi 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

Faculty of Physical Education and Sport Science, Ferdowsi University of Mashhad

Full name of responsible person

Akram Alizadeh

Position

Master student

Other areas of specialty/work

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Ferdowsi University of Mashhad**Full name of responsible person**

Akram Alizadeh

Position

Master student

Other areas of specialty/work**Street address**College of Ferdowsi University of Mashhad, Faculty of
Physical Education and Sport Sciences, Azadi square**City****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*