

Clinical Trial Protocol

Iranian Registry of Clinical Trials

03 Jul 2026

The effect of eight weeks aerobic exercise on endothelin-1, nitric oxide, malondialdehyde, serum 8 hydroxydeoxyguanosine and uric 8 hydroxydeoxyguanosine in elderly women

Protocol summary

Study aim

The present study was designed to see the effect of eight weeks aerobic exercise on endothelin-1, nitric oxide, malondialdehyde, serum 8 hydroxydeoxyguanosine and uric 8 hydroxydeoxyguanosine in elderly women.

Design

Clinical trial with control group, community based and pragmatic, with parallel groups, not blinded care, twenty-one sedentary women were randomly divided into two groups: sedentary control (n=10) and aerobic trained (n=11)

Settings and conduct

This clinical trial study was carried out by designing two experimental and control groups with pretest and post-test in Ferdowsi University of Mashhad

Participants/Inclusion and exclusion criteria

Inclusion Criteria: 1- Women aged 60-70 years; 2- Healthy without chronic diseases; 3- Do not do regular exercises in the last six months. Exclusion Criteria: 1- Less than 60 years old or older than 70 years; 2- Having any history of chronic diseases; 3- Doing regular exercise during the last six months.

Intervention groups

Subjects in aerobic training group underwent aerobic training for eight weeks, 3 sessions per week for 45-60 min. Subjects of this group doing aerobic training with intensity of 50-70% HRmax.

Main outcome variables

endothelin-1, nitric oxide, malondialdehyde, serum 8 hydroxydeoxyguanosine and uric 8 hydroxydeoxyguanosine

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20120129008863N6**

Registration date: **2018-03-15, 1396/12/24**

Registration timing: **retrospective**

Last update: **2018-03-15, 1396/12/24**

Update count: **0**

Registration date

2018-03-15, 1396/12/24

Registrant information

Name

Keyvan Hejazi

Name of organization / entity

Ferdowsi University of Mashhad

Country

Iran (Islamic Republic of)

Phone

+98 51 1768 6790

Email address

ke_he981@stu-mail.um.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2014-10-26, 1393/08/04

Expected recruitment end date

2015-10-23, 1394/08/01

Actual recruitment start date

2014-10-26, 1393/08/04

Actual recruitment end date

2015-10-23, 1394/08/01

Trial completion date

empty

Scientific title

The effect of eight weeks aerobic exercise on endothelin-1, nitric oxide, malondialdehyde, serum 8

hydroxydeoxyguanosine and uric 8
hydroxydeoxyguanosine in elderly women

Public title

The effect of eight weeks aerobic exercise on endothelin-1, nitric oxide, malondialdehyde, serum 8 hydroxydeoxyguanosine and uric 8 hydroxydeoxyguanosine in elderly women

Purpose

Health service research

Inclusion/Exclusion criteria

Inclusion criteria:

Women aged 60-70 years old Healthy without chronic diseases Do not do regular exercises in the last six months

Exclusion criteria:

Having any history of chronic diseases

Age

From **60 years** old to **70 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **21**

Actual sample size reached: **21**

Randomization (investigator's opinion)

Randomized

Randomization description

Use simple randomization method

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

Ferdowsi University of Mashhad

Street address

Paradise Daneshgah, Azadi Square, Faculty of Physical Education and Sport Sciences, Ferdowsi University of Mashhad, Mashhad, IRAN

City

Mashhad

Province

Razavi Khorasan

Postal code

91779-48979

Approval date

2014-10-26, 1393/08/04

Ethics committee reference number

32123/2

Health conditions studied

1

Description of health condition studied

Cardiovascular risk factor

ICD-10 code

I70

ICD-10 code description

Atherosclerosis

Primary outcomes

1

Description

Malondialdehyde

Timepoint

Eight weeks

Method of measurement

By collecting venous blood before and at the end of study and measuring serum levels of related factors using Enzyme-linked immunosorbent assay (ELISA)

2

Description

Endothelin-1

Timepoint

Eight weeks

Method of measurement

By collecting venous blood before and at the end of study and measuring serum levels of related factors using Enzyme-linked immunosorbent assay (ELISA)

3

Description

Nitric oxide

Timepoint

Eight weeks

Method of measurement

By collecting venous blood before and at the end of study and measuring serum levels of related factors using Enzyme-linked immunosorbent assay (ELISA)

4

Description

Serum 8 hydroxydeoxyguanosine

Timepoint

Eight weeks

Method of measurement

By collecting venous blood before and at the end of study and measuring serum levels of related factors using Enzyme-linked immunosorbent assay (ELISA)

5

Description

Uric 8 hydroxydeoxyguanosine

Timepoint

Eight weeks

Method of measurement

By collecting venous blood before and at the end of study and measuring serum levels of related factors using Enzyme-linked immunosorbent assay (ELISA)

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Subjects in aerobic training group underwent aerobic training for eight weeks, 3 sessions per week for 45-60 min. Subjects of this group doing aerobic training with intensity of 50-70% HRmax.

Category

Other

2

Description

Control group: Subjects of the control group did not have any regular physical activities during the period of study.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Ferdowsi University of Mashhad

Full name of responsible person

Mahdi Ghahremani Moghaddam

Street address

Paradise Daneshgah, Azadi Square, Faculty of Physical Education and Sport Sciences, Ferdowsi University of Mashhad, Mashhad

City

Mashhad

Province

Razavi Khorasan

Postal code

91779-48979

Phone

+98 51 3883 3910

Email

m.ghahremani@um.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Research Council of Ferdowsi University of Mashhad

Full name of responsible person

Mahdi Ghahremani Moghaddam

Street address

Paradise Daneshgah, Azadi Square, Faculty of Physical Education and Sport Sciences, Ferdowsi University of Mashhad, Mashhad

City

Mashhad

Province

Razavi Khorasan

Postal code

91779-48979

Phone

+98 51 3883 3910

Email

m.ghahremani@um.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Research Council of Ferdowsi University of Mashhad

Proportion provided by this source

100

Public or private sector

Public

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

Toos Institute of Higher Education

Full name of responsible person

Keyvan Hejazi

Position

Associate Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

Street address

Esteghlal Square, Faramarz Abbasi St. 2

City

Mashhad

Province

Razavi Khorasan

Postal code

9197913116

Phone

+98 51 3606 3044

Email
keyvanhejazi@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity
Toos Institute of Higher Education

Full name of responsible person
Keyvan Hejazi

Position
Associate Professor

Latest degree
Ph.D.

Other areas of specialty/work
Physiology

Street address
Esteghlal Square, Faramarz Abbasi St. 2

City
Mashhad

Province
Razavi Khorasan

Postal code
9197913116

Phone
+98 51 3606 3044

Email
keyvanhejazi@gmail.com

Person responsible for updating data

Contact

Name of organization / entity
Toos Institute of Higher Education

Full name of responsible person
Keyvan Hejazi

Position

Associate Professor

Latest degree
Ph.D.

Other areas of specialty/work
Physiology

Street address
Esteghlal Square, Faramarz Abbasi St. 2

City
Mashhad

Province
Razavi Khorasan

Postal code
9197913116

Phone
+98 51 3606 3044

Email
keyvanhejazi@gmail.com

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

In order to observe ethical principles in research, personal data and collected data from subjects will remain with the researcher.

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available