

# 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

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##### 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

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##### Email

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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

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

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## Person responsible for scientific inquiries

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## Person responsible for updating data

### Contact

**Name of organization / entity**  
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**Position**

Associate Professor

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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

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