

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Investigating the effects of combined aerobic-resistance exercise training on levels of Chemerin and Omentin in men with type 2 diabetes

Protocol summary

Study aim

Determination of the effects of combined aerobic-resistance exercise training on levels of Chemerin and Omentin in men with type 2 diabetes

Design

Clinical trial with two groups (intervention and control), Parallel, Pragmatic, Randomized

Settings and conduct

This study will be conducted to evaluate the effects of combined aerobic-resistance exercise training on levels of Chemerin and Omentin in men with type 2 diabetes in the Diabetes Clinic of Vasey Hospital in Sabzevar. Patients will be randomly assigned to the intervention (combined aerobic-resistance exercise) and control group. The response to treatment is evaluated using Luminescence quantitative and ELISA methods for the study groups.

Participants/Inclusion and exclusion criteria

Inclusion Criteria: Lack of cardiovascular, musculoskeletal, and metabolic disorders limiting exercise, Lack of high blood pressure, Lack of regular exercise activity in the last 6 months, Not receiving insulin. Exclusion Criteria: Inability to perform exercises, Having regular sports activities rather than research exercises.

Intervention groups

Intervention group: The training group will undergo combined aerobic-resistance exercise training with distinct intensity for 12 weeks, three sessions a week. Each training session will include 5 to 10 minutes of warm-up, 45 minutes of resistance training, 30 minutes of aerobic training, respectively. Control group: control subjects also only perform their routine activities. In order to measure the biochemical variables, the blood sampling is performed after 12 hours of fasting and in two steps before the start of the training program and after 12 weeks. Subjects are asked to do no severe activity for two days prior to blood sampling.

Main outcome variables

Determine the levels of Chemerin and Omentin

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20181006041252N11**

Registration date: **2019-05-21, 1398/02/31**

Registration timing: **retrospective**

Last update: **2019-05-21, 1398/02/31**

Update count: **0**

Registration date

2019-05-21, 1398/02/31

Registrant information

Name

Mohammad Sahebkar

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 51 4401 8337

Email address

sahebkar@medsab.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2015-04-13, 1394/01/24

Expected recruitment end date

2015-06-14, 1394/03/24

Actual recruitment start date

2015-04-13, 1394/01/24

Actual recruitment end date

2015-06-14, 1394/03/24

Trial completion date

2015-06-14, 1394/03/24

Scientific title

Investigating the effects of combined aerobic-resistance exercise training on levels of Chemerin and Omentin in men with type 2 diabetes

Public title

Effects of combined aerobic-resistance exercise training on levels of Chemerin and Omentin in men with type 2 diabetes

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Lack of cardiovascular, musculoskeletal, and metabolic disorders limiting exercise
Lack of high blood pressure
Lack of regular exercise activity in the last 6 months
Not receiving insulin

Exclusion criteria:

Inability to perform exercises
Having regular sports activities rather than research exercises

Age

From **30 years** old to **60 years** old

Gender

Male

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: **24**

Actual sample size reached: **24**

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization was conducted based on a permutation block by a statistical consultant using random allocation software and the output sequences A and B are available to the researcher. Accordingly, 6 blocks were allocated to patients, in each block, 2 from A treatment group, 2 from the B treatment group were placed. Eventually, after completing the blocks group A was trained with combined aerobic-resistance exercise, Group B does not receive any special treatment (control). First, we determine all sixsome modes in which two individuals are assigned to group A and two to group B. Then we assign one of the digits 1 to 6 to each of the sixsome combinations (which includes thirty-six modes). In the next step, we must randomly select 6 blocks of six and write their combinations in succession. For this we have to make 6 samplings with replacement from a six-member community; 6 times, choose a random number between 1 and 6 and this process will continue until the end of the sampling and the difference between the two groups will not exceed a maximum of two (half the size of the block).

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 Sabzevar University of Medical Sciences

Street address

Sabzevar University of Medical Sciences, Tohid Blvd, Sabzevar city

City

Sabzevar

Province

Razavi Khorasan

Postal code

9617913114

Approval date

2015-04-13, 1394/01/24

Ethics committee reference number

IR.MEDSAB.REC.1394.2

Health conditions studied

1

Description of health condition studied

Type 2 diabetes

ICD-10 code

E08

ICD-10 code description

Diabetes mellitus due to underlying condition

Primary outcomes

1

Description

Determine the levels of chemerin

Timepoint

At the beginning of the study (before the intervention) and 12 weeks after the start of the training program

Method of measurement

Use of Luminescence quantitative and ELISA methods

2

Description

Determine the level of omentin

Timepoint

At the beginning of the study (before the intervention) and 12 weeks after the start of the training program

Method of measurement

Use of Luminescence quantitative and ELISA methods

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: The training group will undergo combined aerobic-resistance exercise training with distinct intensity for 12 weeks, three sessions a week. Each training session will include 5 to 10 minutes of warm-up, 45 minutes of resistance training, 30 minutes of aerobic training, respectively. In order to measure the biochemical variables, the blood sampling is performed after 12 hours of fasting and in two steps before the start of the training program and after 12 weeks. Subjects are asked to do no severe activity for two days prior to blood sampling.

Category

Treatment - Other

2

Description

Control group: control subjects also only perform their routine activities. In order to measure the biochemical variables, the blood sampling is performed after 12 hours of fasting and in two steps before the start of the training program and after 12 weeks. Subjects are asked to do no severe activity for two days prior to blood sampling.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Diabetes Clinic of Sabzevar University of Medical Sciences

Full name of responsible person

Dr. Mehdi Zarei

Street address

Vasei Hospital, Tohid Blvd., Sabzevar Town

City

Sabzevar

Province

Razavi Khorasan

Postal code

9613873136

Phone

+98 51 4401 1014

Email

Zarei.m8716@yahoo.com

Web page address

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Sabzevar University of Medical Sciences

Full name of responsible person

Dr. Fereshte Ghorat

Street address

Sabzevar University of Medical Sciences, Tohid Blvd., Sabzevar Town

City

Sabzevar

Province

Razavi Khorasan

Postal code

9617913114

Phone

+98 51 4401 8319

Email

Drghorat@gmail.com

Grant name

Grant code / Reference number

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

No

Title of funding source

Sabzevar University of Medical Sciences

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

Sabzevar University of Medical Sciences

Full name of responsible person

Dr. Mehdi Zarei

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Medicine

Street address

Sabzevar University of Medical Sciences, Tohid Blvd., Sabzevar Town

City

Sabzevar

Province

Razavi Khorasan

Postal code

9617913114

Phone

+98 51 4401 1604

Email

Zarei.m8716@yahoo.com

Person responsible for scientific inquiries**Contact****Name of organization / entity**

Sabzevar University of Medical Sciences

Full name of responsible person

Dr. Mehdi Zarei

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Medicine

Street address

Sabzevar University of Medical Sciences, Tohid Blvd.,
Sabzevar Town

City

Sabzevar

Province

Razavi Khorasan

Postal code

9617913114

Phone

+98 51 4401 1604

Email

Zarei.m8716@yahoo.com

Person responsible for updating data**Contact****Name of organization / entity**

Sabzevar University of Medical Sciences

Full name of responsible person

Dr. Mehdi Zarei

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Medicine

Street address

Sabzevar University of Medical Sciences, Tohid Blvd.,
Sabzevar Town

City

Sabzevar

Province

Razavi Khorasan

Postal code

9617913114

Phone

+98 51 4401 1604

Email

Zarei.m8716@yahoo.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

No more information

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

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available