

Clinical Trial Protocol

Iranian Registry of Clinical Trials

20 Jul 2026

Investigating the separate and combined effects of resistance training and cucumber (cucumis sativus) juice consumption on diabetic, lipid, oxidative and hepatic indices status of women with type 2 diabetes

Protocol summary

Study aim

Investigating the separate and combined effects of resistance training and cucumber juice consumption on the status of diabetic, lipid, oxidative and liver indicators in women with type 2 diabetes

Design

A randomized and unblinded clinical trial with intervention and control groups by using 40 subjects.

Settings and conduct

About the tests for all intervention groups: in the first session, questionnaire and measurement of height, weight and body composition, in the second session, blood sampling with 48 hours of previous rest in a fasting state followed by at least 8 hours of night sleep, in the third session, the research protocol started. Resistance exercises were performed in the gymnasium of Razi University, Kermanshah. 48 hours after the last research session, blood sampling was done again.

Participants/Inclusion and exclusion criteria

Women with type 2 diabetes with an age range of 35-70 years, lack of regular sports activity in the past six months, having a health certificate from a doctor to do sports activities, no history of any cardiovascular disease, Kidney and cancer in the last 5 years, no use of insulin and no complications of diabetes, including diabetic foot ulcers. Criteria for not entering the research: inability to perform resistance exercises, pregnancy or breastfeeding, use of drugs or supplements (such as corticosteroids and anabolic hormones)

Intervention groups

Training and Placebo group, Training and Supplement group, Supplement group and Control group.

Main outcome variables

Biochemical markers of diabetic indices; lipid profile; oxidative indices and liver enzymes

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230419057962N1**

Registration date: **2023-05-23, 1402/03/02**

Registration timing: **retrospective**

Last update: **2023-05-23, 1402/03/02**

Update count: **0**

Registration date

2023-05-23, 1402/03/02

Registrant information

Name

Maryam Lotfi

Name of organization / entity

Razi university

Country

Iran (Islamic Republic of)

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+98 83 3429 6031

Email address

m.lotfi7344@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-12-06, 1401/09/15

Expected recruitment end date

2023-01-06, 1401/10/16

Actual recruitment start date

2022-12-06, 1401/09/15

Actual recruitment end date

2023-01-07, 1401/10/17

Trial completion date

Scientific title

Investigating the separate and combined effects of resistance training and cucumber (cucumis sativus) juice consumption on diabetic, lipid, oxidative and hepatic indices status of women with type 2 diabetes

Public title

Investigating the effects of performing resistance training and consuming cucumber juice in women with type 2 diabetes

Purpose

Other

Inclusion/Exclusion criteria**Inclusion criteria:**

Women with type 2 diabetes Not using Insulin and not having diabetes complications, including diabetic foot ulcers No history of any Cardiovascular, Kidney or Cancer disease in the last 5 years Lack of regular sports activity during the last six months Having a Health Certificate from a doctor to do sports activities

Exclusion criteria:

Inability to do resistance training Pregnancy or Breastfeeding Use of Drugs or Supplements (such as Corticosteroids and Anabolic hormones)

Age

From **35 years** old to **70 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **40**

Actual sample size reached: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

The current research is an experimental type with a pretest-posttest design and random assignment of research groups (three experimental groups and one control group). For this purpose, 40 women (35 to 70) years old with type 2 diabetes who had visited the Kermanshah Diabetes Treatment Research Center were selected and randomly divided into four groups of 10 including Training and Placebo group, Training and Supplement group, Supplement group and Control group were included.

Blinding (investigator's opinion)

Not blinded

Blinding description**Placebo**

Used

Assignment

Factorial

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

The ethics committee in biomedical research of Razi university

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University Ave., Taqbastan

City

Kermanshah

Province

Kermanshah

Postal code

۶۷۱۴۴۱۴۹۷۱

Approval date

2021-12-29, 1400/10/08

Ethics committee reference number

IR.RAZI.REC.1400.092

Health conditions studied**1****Description of health condition studied**

Type 2 diabetes

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Biochemical markers of diabetic indicators

Timepoint

48 hours before the start of the research (pre-test) and 48 hours after the last protocol implementation session (post-test)

Method of measurement

Blood sampling and evaluation of samples by laboratory kits

2**Description**

Biochemical markers of lipid profile

Timepoint

48 hours before the start of the research (pre-test) and 48 hours after the last protocol implementation session (post-test)

Method of measurement

Blood sampling and evaluation of samples by laboratory kits

3**Description**

Biochemical markers of oxidative indices

Timepoint

48 hours before the start of the research (pre-test) and

48 hours after the last protocol implementation session (post-test)

Method of measurement

Blood sampling and evaluation of samples by laboratory kits

4

Description

Biochemical markers of liver indices

Timepoint

48 hours before the start of the research (pre-test) and 48 hours after the last protocol implementation session (post-test)

Method of measurement

Blood sampling and evaluation of samples by laboratory kits

Secondary outcomes

1

Description

Height measurement

Timepoint

48 hours before the start of the protocol

Method of measurement

Yagami model gauge made in Japan

2

Description

Weight measurement

Timepoint

48 hours before the start of the protocol

Method of measurement

1. Beurer digital scale, model PS07, made in Germany, with an accuracy of 0.1 kg

3

Description

Body composition measurement

Timepoint

48 hours before the start of the protocol

Method of measurement

Zeus 9.9 plus body composition analyzer made in South Korea

Intervention groups

1

Description

Intervention groups: first group: (training and placebo group) , second group: (training and supplement group) , third group: supplement group, fourth group: control group. The first group: received eight weeks of resistance training along with 240 ml of placebo. The second group: eight weeks of resistance training and received 240 ml of cucumber juice. The third group received 240 ml of cucumber juice for eight weeks. The

control group received 240 ml of placebo for eight weeks. The research protocol lasted eight weeks (24 sessions). For the preparation of the placebo, edible green dye (retg, an authorized synthetic liquid edible dye, manufactured by the Yellow Line factory, under the standard of the Food and Drug Organization (I.R.I. FDO)) was used.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Diabetes Research Center of Kermanshah Province

Full name of responsible person

Mehrali Rahimi

Street address

Diabetes Research Center of Kermanshah Province, Shahid Beheshti Boulevard

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Razi university of Kermanshah

Full name of responsible person

Mustafa Mostafai

Street address

University Ave., Taq Bostan., Razi University., Kermanshah

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b.mostafaei@razi.ac.ir

Web page address

<https://are.razi.ac.ir/deputy-of-research>

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Razi university of Kermanshah

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

Razi University of Kermanshah

Full name of responsible person

Maryam Lotfi

Position

Phd student of Exercise Physiology

Latest degree

Master

Other areas of specialty/work

Exercise Physiology

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Person responsible for scientific inquiries

Contact

Name of organization / entity

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Full name of responsible person

Maryam Lotfi

Position

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Person responsible for updating data

Contact

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Full name of responsible person

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Web page address

<https://razi.ac.ir/>

Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Not applicable

Title and more details about the data/document

After collecting the data by the researcher, it is the responsibility of the researcher to analyze the data. The data of the participants will be analyzed without mentioning their names, and after the data analysis, an article about the research data will be printed. The data

file of the participants will be kept by the researcher and the results of the data analysis will be The article format will be printed. The informed consent form of the participants will be placed with the researcher and if needed, the journal or relevant authorities will be informed. The study protocol and clinical study report will be published in the form of an article. The codes used in the analysis (code of ethics) will be written in the article.

When the data will become available and for how long

After publishing the article

To whom data/document is available

The referees of the journal in which the article is to be published

Under which criteria data/document could be used

For further review and close monitoring of published data

From where data/document is obtainable

Applicants (reviewers of the journal) can contact the main researcher of the research through the postal address: Kermanshah., Taqbestan., University Ave., Razi University., Kermanshah, or send an email to the email address m.lotfi7344@gmail.com, or contact the main researcher of the research (Maryam Lotfi) through correspondence with the number 00989032215055 to receive the desired documents or data.

What processes are involved for a request to access data/document

The referees of the desired journal can send an email to the main researcher and request that the data of the protocol be served to them(in order to publish an article in the desired magazine).

Comments