

Clinical Trial Protocol

Iranian Registry of Clinical Trials

29 Jun 2026

The Effect Of 8 Weeks Combined Training (Aerobic-Resistance) At Home With Quinoa Seed Supplementation On Total Antioxidant Capacity And Appetite In Women With Type 2 Diabetes

Protocol summary

Study aim

Determining the effect of 8 weeks of combined training (aerobic-resistance) at home with quinoa seed supplementation on total antioxidant capacity and appetite in women with type 2 diabetes

Design

Exercise plus supplement group and supplement group consume 25 grams/day of cooked quinoa seeds in the morning for 8 weeks. Exercise plus supplement group perform combined exercise 3 days in week for 8 weeks. Combined exercise: 5-10 minutes warm-up, then main exercise that includes 30 minutes of resistance training and after that; 30 minutes of aerobic training that includes walking. The control group also engages in their normal daily activities for 8 weeks.

Settings and conduct

Exercise plus supplement group and supplement group consume 25 grams/day of cooked quinoa seeds in the morning for 8 weeks. Exercise plus supplement group perform combined exercise 3 days in week for 8 weeks. Combined exercise: 5-10 minutes warm-up, then main exercise that includes 30 minutes of resistance training and after that; 30 minutes of aerobic training that includes walking. The control group also engages in their normal daily activities for 8 weeks.

Participants/Inclusion and exclusion criteria

Less than ten years Suffering type 2 diabetes, A1c level between 6.4 to 10, Don't use insulin, No regular exercise, No pregnancy, No quinoa seed allergy, 35-65 years old

Intervention groups

Exercise plus supplement group and supplement group consume 25 grams/day of cooked quinoa seeds in the morning for 8 weeks. Exercise plus supplement group perform combined exercise 3 days in week for 8 weeks. Combined exercise: 5-10 minutes warm-up, then main exercise that includes 30 minutes of resistance training and after that; 30 minutes of aerobic training that

includes walking. The control group also engages in their normal daily activities for 8 weeks.

Main outcome variables

Total antioxidant capacity; Appetite

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200804048306N1**

Registration date: **2021-04-13, 1400/01/24**

Registration timing: **retrospective**

Last update: **2021-04-13, 1400/01/24**

Update count: **0**

Registration date

2021-04-13, 1400/01/24

Registrant information

Name

nillofar moradi

Name of organization / entity

The razi university of kermanshah

Country

Iran (Islamic Republic of)

Phone

+98 83 3429 5590

Email address

n.moradi@stu.razi.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-03-14, 1399/12/24

Expected recruitment end date

2021-03-17, 1399/12/27

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effect Of 8 Weeks Combined Training (Aerobic-Resistance) At Home With Quinoa Seed Supplementation On Total Antioxidant Capacity And Appetite In Women With Type 2 Diabetes

Public title

The Effect Of 8 Weeks Combined Training (Aerobic-Resistance) At Home With Quinoa Seed Supplementation On Total Antioxidant Capacity And Appetite In Women With Type 2 Diabetes

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

The present study will be conducted by quasi-experimental research method and pre-test-post-test design, one-sided blind and random selection. In this randomized one-blind design with a 15% probability 36 women with type 2 diabetes (35-65 years) in Kermanshah will be selected as a statistical sample. After obtaining permission from the ethics committee of Razi University of Kermanshah and after being called to the Diabetes Center, participants who have been suffering from diabetes for less than ten years will be called. Inclusion criteria include: less than ten years of type 2 diabetes at the discretion of the treating physician, A1c level between 6.4 to 10, no insulin use, no regular exercise, no pregnancy, no allergy to quinoa seeds, age 35-64 years. All subjects are explained the goals and nature of the research and individuals participate in the research voluntarily. Subjects are assured that the information will remain confidential and that the information will be used solely for the purposes of this study. Subjects can leave the study any time that they want.

Exclusion criteria:

Exclusion criteria include: use of insulin during the study, hospitalization during the study, intolerance to exercise (expression of discomfort, severe lethargy, imbalance and confusion), cardiovascular disease, lack of regular participation Exercises, foot ulcers and complications in the legs during the study.

Age

From **35 years** old to **65 years** old

Gender

Female

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **36**

Randomization (investigator's opinion)

Randomized

Randomization description

This research is of quasi-experimental type with pre-test and post-test design. The statistical population of this study is women in the age range of 35 to 65 years and with type 2 diabetes in Kermanshah, who will be selected by clinical trials. According to the corona conditions, the sample size will be estimated at 36 people: then the subjects will be divided into 3 groups using simple random sampling, including: the first group: quinoa supplement (12 people); The second group: quinoa supplementation and resistance-aerobic exercise (12 people); Third group: control (12 people) will be divided. None of the subjects will be aware of the status of supplementation and groupings. The researcher numbers the names of the subjects and puts the numbers in an envelope and another person enters the names and puts them in 3 groups, respectively.

Blinding (investigator's opinion)

Single blinded

Blinding description

This research is of quasi-experimental type with pre-test and post-test design. The statistical population of this study is women in the age range of 35 to 65 years and with type 2 diabetes in Kermanshah, who will be selected by clinical trials. According to the corona conditions, the sample size will be estimated at 36 people: then the subjects will be divided into 3 groups using simple random sampling, including: the first group: quinoa supplement (12 people); The second group: quinoa supplementation and resistance-aerobic exercise (12 people); Third group: control (12 people) will be divided. None of the subjects will be aware of the status of supplementation and groupings. The researcher numbers the names of the subjects and puts the numbers in an envelope and another person enters the names and puts them in 3 groups, respectively.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

National Ethics Committee in Biomedical Research

Street address

Karmandan Street, Station 4

City

kermanshah

Province

Kermanshah

Postal code

6715769751

Approval date

2021-03-13, 1399/12/23

Ethics committee reference number

1399.006IR.RAZI.REC

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**

Antioxidants are compounds that are able to protect biological systems against the harmful effects of reactive oxygen species and oxygen. In fact, antioxidants play an important role in inhibiting the active species of oxygen and nitrogen and preventing their formation. The involvement of reactive oxygen species, oxygen, nitrogen and chlorine in the pathology of many diseases, including type 2 diabetes, has been well established. Therefore, the effect of quinoa seeds and exercise on total antioxidant capacity and appetite in people with type 2 diabetes is investigated.

Timepoint

2 months

Method of measurement

By blood measurements

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention group: The exercise plus supplement group and the supplement group will consume 25 grams/day of cooked quinoa seeds with a snack in the morning and from 10 to 11 o'clock for 8 weeks.

Category

Other

2**Description**

Intervention group: Exercise plus supplement group also performs combined training (aerobic-resistance) 3 days in week for 8 weeks. The combined training program includes: 5-10 minutes warm-up (stretching and kinetic movements), the main body of the combined training includes 30 minutes of resistance training and then 30

minutes of aerobic training, which includes walking at a preferred speed. Resistance exercises will be done 8 to 12 repetitions in 3 sets (the first week 8 repetitions for body adaptation, the second and third weeks 10 repetitions and finally the fourth to eighth weeks 12 repetitions) with 60 second rest intervals between each set.

Category

Other

3**Description**

Control group: The control group also engages in their normal daily activities for 8 weeks.

Category

Other

Recruitment centers**1****Recruitment center****Name of recruitment center**

Taleghani Diabetes Center of Kermanshah

Full name of responsible person

Nillofar moradi

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karmandan Street, Station 4

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kermanshah

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Phone

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Email

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Kermanshah University of Medical Sciences

Full name of responsible person

Dr. Elham Niromand

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Grant name

Grant code / Reference number
Is the source of funding the same sponsor organization/entity?

No

Title of funding source

Razi University

Proportion provided by this source

100

Public or private sector

Private

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Other

Person responsible for general inquiries

Contact

Name of organization / entity

Razi University of Kermanshah

Full name of responsible person

Nillofar moradi

Position

Student

Latest degree

Master

Other areas of specialty/work

Physiology

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Razi University of Kermanshah

Full name of responsible person

Nillofar moradi

Position

Student

Latest degree

Master

Other areas of specialty/work

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Person responsible for updating data

Contact

Name of organization / entity

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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

There is no more information

Study Protocol

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

Statistical Analysis Plan

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

Informed Consent Form

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

Clinical Study Report

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

Analytic Code

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

Data Dictionary

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