Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Determination of the effect of broccoli sprouts on biochemical markers of oxidative stress in serum in patients with type 2 diabetes

Protocol summary

Summary

Broccoli sprouts have shown beneficial effects on pathological conditions such as cadiovascular diseases. In the present study we aimed to examine the effect of consumption of broccoli sprouts on biomarkers of oxidative stress in patients with type 2 diabetes. Eighty patients (40 in each group) with type 2 diabetes will be recruited and randomly divided into two groups. Blood samples and 24-h dietary recall will be taken before intervention. Then, for two months participants in one group will receive 10 mg dried broccoli sprouts per day, and another group will receive the same amount of corn starch as placebo. At the end of the intervention, blood samples will be taken. Total antioxidant capacity, total oxidant status, malondialdehyde, and lipid peroxides will be measured in serum. Data will be analyzed with SPSS version 16.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2013070810190N3**
Registration date: **2013-07-17, 1392/04/26**
Registration timing: **prospective**

Last update:
Update count: **0**

Registration date

2013-07-17, 1392/04/26

Registrant information

Name

Masoumeh Akhlaghi

Name of organization / entity

Shiraz University of Medical Sciences

Country

Iran (Islamic Republic of)

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+98 71 1725 7288

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Recruitment status

Recruitment complete

Funding source

Shiraz University of Medical Sciences

Expected recruitment start date

2014-01-31, 1392/11/11

Expected recruitment end date

2014-09-30, 1393/07/08

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Determination of the effect of broccoli sprouts on biochemical markers of oxidative stress in serum in patients with type 2 diabetes

Public title

Effect of broccoli sprouts on markers of oxidation in type 2 diabetes

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion/exclusion:Inclusion: Patients with type 2 diabetes with at least 3 years from the onset of the disease. Exclusion criteria:Insulin therapy, taking especial medications such as hormones, hypoglycemic agents, and lipid lowering medications, vitamin and iron supplements, vitamin K antagonists, those with nephropathy, neuropathy, and cardiovascular disease, liver disease, cancers, autoimmune and inflammatory diseases, pregnant and lactating women, smokers, and those on especial diets, and those who make major

changes in their diet during intervention.

Age
From **30 years** old to **65 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **40**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Single blinded

Blinding description

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Shiraz University of Medical Sciences

Street address
Zand Blvd

City
Shiraz

Postal code

Approval date
2012-09-05, 1391/06/15

Ethics committee reference number
CT-9223

Health conditions studied

1

Description of health condition studied
Type 2 diabetes

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Total antioxidant capacity

Timepoint
At the beginning of study and at the end of intervention

Method of measurement
Biochemical analysis

2

Description
Total oxidant status

Timepoint
At the beginning of study and at the end of intervention

Method of measurement
Biochemical analysis

3

Description
Malondialdehyde

Timepoint
At the beginning of study and at the end of intervention

Method of measurement
Biochemical analysis

4

Description
Lipid peroxides

Timepoint
At the beginning of study and at the end of intervention

Method of measurement
Biochemical analysis

Secondary outcomes

1

Description
BMI

Timepoint
At the beginning and at the end of study

Method of measurement
Weighing

Intervention groups

1

Description
10 g per day dried broccoli sprouts. Broccoli sprouts are an agricultural product cultivated by Agriculture Division in Shiraz University. Sprouts are consumed once per day for two months. Participants are asked to consume the sprouts with yogurt or other dishes.

Category
Treatment - Drugs

2

Description
10 g/day corn starch colored with spinach powder. Participants are asked to consume the starch with yogurt or other dishes.

Category
Placebo

Recruitment centers

1

Recruitment center
Name of recruitment center
Physicians' offices
Full name of responsible person
Street address
City
Shiraz

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Research deputy of Shiraz University of Medical Sciences
Full name of responsible person
Dr. Gholam Reza Hatam
Street address
Central Building-Zand Street
City
Shiraz
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Research deputy of Shiraz University of Medical Sciences
Proportion provided by this source
100
Public or private sector
empty
Domestic or foreign origin
empty
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
empty

Person responsible for general inquiries

Contact
Name of organization / entity
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Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty

Analytic Code

empty

Data Dictionary

empty