

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Effect of powdered sumac (*Rhus coriaria* L) on glycemic control and insulin resistance in patients with type 2 diabetes.

#### Protocol summary

##### Summary

The purpose of this study was to investigate the effect of sumac powder on the status of blood glucose 2 hours after a meal, hemoglobin A1C, insulin resistance, serum homocysteine, and HS-CRP in type II diabetic patients. In this randomized, controlled clinical trial, 60 patients with Type II diabetes and eligible applicants are selected for the study. Patients about to get crushed powder 6 g daily for 3 months. After the 3-month intervention period, fasting and 2-hour postprandial serum glucose, hemoglobin A1C, insulin resistance, beta-cell function, serum Homocysteine, and HS-CRP between the two groups will be compared levels.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT2014050410826N9**  
Registration date: **2014-06-14, 1393/03/24**  
Registration timing: **registered\_while\_recruiting**

Last update:

Update count: **0**

##### Registration date

2014-06-14, 1393/03/24

##### Registrant information

##### Name

Azadeh Nadjarzadeh

##### Name of organization / entity

Shahid Sadoughi University of Medical Sciences

##### Country

Iran (Islamic Republic of)

##### Phone

+98 912 202 2817

##### Email address

azadnajarzadeh@ssu.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

Research Council of Yazd University of Medical Sciences

##### Expected recruitment start date

2014-05-17, 1393/02/27

##### Expected recruitment end date

2014-07-23, 1393/05/01

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Effect of powdered sumac (*Rhus coriaria* L) on glycemic control and insulin resistance in patients with type 2 diabetes.

##### Public title

Effect of sumac powder on type 2 diabetes

##### Purpose

Treatment

##### Inclusion/Exclusion criteria

Inclusion criteria: individuals between 30 and 60 years of their diabetes diagnosed diabetes center and at least 3 years of getting passed; lack of disorders and diseases of the liver and biliary and renal disorders; no professional athletes; not taking antioxidant supplements, selenium, zinc, beta carotene, omega-3 and at least 3 months before the study began; no alcohol; the willingness of patients to participate in the study; refusing to participate in other research projects; no change in dose or type of medication; do not use insulin. Exclusion criteria: those who consume less than 80 percent were crushed packages; people who have changed the type and dose of your medication; the patient's unwillingness to continue the study; start taking any antioxidant supplement; recent receiving insulin; to become

pregnant during the study; diseases of liver and biliary and renal dysfunction during the study.

#### Age

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

#### Gender

Both

#### Phase

N/A

#### Groups that have been masked

*No information*

#### Sample size

Target sample size: **60**

#### Randomization (investigator's opinion)

Randomized

#### Randomization description

#### 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

Research Ethics Committee of the Medical University of Yazd

##### Street address

Yazd University of Medical Sciences, Daneshjoo blv.

##### City

Yazd

##### Postal code

8916189165

#### Approval date

2013-12-08, 1392/09/17

#### Ethics committee reference number

17/1/171485/پ

## Health conditions studied

### 1

#### Description of health condition studied

Type 2 Diabetes

#### ICD-10 code

E11

#### ICD-10 code description

Non-insulin-dependent diabetes mellitus

## Primary outcomes

### 1

#### Description

Fasting blood sugar

#### Timepoint

Before the intervention and after the intervention (3 months later)

#### Method of measurement

Glucose oxidase method

### 2

#### Description

Glycosylated hemoglobin

#### Timepoint

Before the intervention and after the intervention (3 months later)

#### Method of measurement

Spectrophotometric

### 3

#### Description

Insulin

#### Timepoint

Before the intervention and after the intervention (3 months later)

#### Method of measurement

IRMA

### 4

#### Description

Insulin Resistance

#### Timepoint

Before the intervention and after the intervention (3 months later)

#### Method of measurement

$(\text{glucose} \times \text{insulin})/22.5$

### 5

#### Description

Blood sugar levels two hours after a meal

#### Timepoint

Before the intervention and after the intervention (3 months later)

#### Method of measurement

Glucose oxidase method

### 6

#### Description

Beta-cell function

#### Timepoint

Before the intervention and after the intervention (3 months later)

#### Method of measurement

The amount of beta-cell function =  $(\text{Fasting insulin} \times 20) / (\text{fasting glucose} - 3.5)$

## Secondary outcomes

## 1

### Description

Added at 2016-11-29: HS-CRP

### Timepoint

Added at 2016-11-29: At the beginning and the end of study period

### Method of measurement

Added at 2016-11-29: 10 ml blood sample

## Intervention groups

## 1

### Description

Control group:take 2 cup low-fat yogurt daily without sumac for 3 months with lunch and dinner

### Category

Placebo

## 2

### Description

Intervention group: Daily for 3 months, 6 grams of powdered sumac two servings (1 sachet 3 grams with lunch and one sachet 3 grams with dinner) was mixed with low-fat yogurt are used.

### Category

Treatment - Drugs

## Recruitment centers

## 1

### Recruitment center

#### Name of recruitment center

Ardakan Diabetes Center(Clinic Mehr)

#### Full name of responsible person

Mohammad Reza Fatahi Ardakani

#### Street address

Alley Civil Registration office, Beheshti Boulevard

#### City

Ardakan

## Sponsors / Funding sources

## 1

### Sponsor

#### Name of organization / entity

Research Council of Yazd University of Medical Sciences

#### Full name of responsible person

Fatemeh Ezzedini Ardekani

#### Street address

Maxillofacial Radiology, Faculty of Dentistry, Imam Street

#### City

Yazd

#### Grant name

#### Grant code / Reference number

#### Is the source of funding the same sponsor

### organization/entity?

Yes

### Title of funding source

Research Council of Yazd 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

Yazd University of Medical Sciences

#### Full name of responsible person

Azadeh Najarzadeh

#### Position

Nutrition PhD, Assistant Professor

#### Other areas of specialty/work

#### Street address

Nutrition Department- Faculty of Health-Imam Reza Educational Research Center-Student Boulevard

#### City

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+98 35 1624 0691

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azadnajarzadeh@ssu.ac.ir

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## Person responsible for scientific inquiries

### Contact

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#### Full name of responsible person

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Nutrition PhD

#### Other areas of specialty/work

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## Person responsible for updating data

### Contact

**Name of organization / entity**

Yazd University of Medical Sciences

**Full name of responsible person**

Mohammad Reza Fattahi Ardekani

**Position**

Graduate student in Nutrition and Health Sciences

**Other areas of specialty/work**

**Street address**

No. 52, Alley No. 97, Hafez Street.

**City**

Ardakan

**Postal code**

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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*