Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

The effects of Apple Cider and White Vinegars on Glycemic Response and Appetite in healthy subjects

Protocol summary

Summary

The purpose of this study was to investigate the effects of apple cider and white vinegars on glycemic response and appetite in healthy subjects. A total of 30 healthy volunteers with normal body mass indices (19-25 kg/m2) and without drug therapy participated in this cross-over study after obtaining informed consent. The subjects came to the laboratory in the morning after an overnight fast. A fasting blood sample was taken by EasyGluco glucose monitoring system (finger-stick) and the subject's feeling of hunger/satiety was rated using a subjective rating scale (VAS) before the meal serving. The test meal consisting 200 grams potatoes (weighed without skin) containing 50 grams available carbohydrate cooked on the morning of the test day. Subjects were randomly divided into two groups taking the test meal with either 30 ml of white or apple cider vinegars. Test meal will be consumed in 10-14 minutes and blood samples were obtained at 30, 90, 120 minutes after starting to eat. The feeling of hunger/satiety was also rated at, 30, 90, and 120 min after the meal. The tests were repeated with different kind of interventions two weeks after the first trial.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT138706141197N1**
Registration date: **2010-04-24, 1389/02/04**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2010-04-24, 1389/02/04

Registrant information

Name

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Name of organization / entity

Faculty of Health & Nutrition, Tabriz UniV. of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Nutritional Research center

Expected recruitment start date

2009-10-23, 1388/08/01

Expected recruitment end date

2010-03-20, 1388/12/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effects of Apple Cider and White Vinegars on Glycemic Response and Appetite in healthy subjects

Public title

The effects of Apple Cider and White Vinegars on Glycemic Response and Appetite in healthy subjects

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria: signing informed consent, healthy volunteer, age 20-40 years, normal BMI indices,
Exclusion criteria: receiving insulin or antihyperglycemic drugs or appetizers, smoking, and presence of

gastrointestinal disorders

Age

From **20 years** old to **40 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

N/A

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Crossover

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

The Research Ethics Committee of Tabriz University of Medical Sciences

Street address

Tabriz University of Medical Sciences

City

Tabriz

Postal code

Approval date

2010-02-23, 1388/12/04

Ethics committee reference number

8816

Health conditions studied

1

Description of health condition studied

healthy subjects

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Accuracy and precision of the Easy-Gluco and Accuchek (self blood glucose monitoring machines) with laboratory methods

Timepoint

beginning of the trial

Method of measurement

Blood sampling with glucose monitoring system (finger-stick) and laboratory methods

2

Description

Glycemic response

Timepoint

At the baseline and 30, 90, and 120 minutes after taking white and apple cider vinegars

Method of measurement

Blood sampling with glucose monitoring system(finger-stick)

3

Description

Appetite

Timepoint

At the baseline and 30, 90, and 120 minutes after taking white and apple cider vinegars

Method of measurement

VAS Questionnaire

4

Description

Daily Fat

Timepoint

The day before, the trial day and the day after taking white and apple cider vinegars

Method of measurement

24 hour dietary recall

5

Description

Total Daily Calorie

Timepoint

The day before, the trial day and the day after taking white and apple cider vinegars

Method of measurement

24 hour dietary recall

6

Description

daily taken charbohydrates

Timepoint

The day before, the trial day, and the day after taking white and apple cider vinegars

Method of measurement

24 hour dietary recall

7

Description

Daily protein

Timepoint

The day before, the trial day and the day after taking white and apple cider vinegars

Method of measurement

24 hour dietary recall

Secondary outcomes

1

Description

Insulin response and appetite control

Timepoint

Monitoring during the trial

Method of measurement

Blood sampling with glucose monitoring system(finger-stick) and VAS Questionnaire

Intervention groups

1

Description

30 mL of white vinegar supplementation

Category

Prevention

2

Description

30 mL of Apple cider vinegar supplementation

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Health and Nutrition Faculty ,Tabriz University of Medical Sciences

Full name of responsible person

Dr. Reza Mahdavi

Street address

Tabriz University of Medical Sciences

City

Tabriz

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Nutritional Research center

Full name of responsible person

Dr. Alireza Ostad Rahemi

Street address

Health and Nutrition Faculty,Tabriz University of Medical Sciences

City

Tabriz

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Nutritional Research center

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

Nutritional Research center of Tabriz university of medical science

Full name of responsible person

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Position

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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