Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Investigating the short-term effects of apple vinegar consumption on systolic and diastolic blood pressure, pulse pressure and heart rate in healthy subjects

Protocol summary

Study aim
Determination the short-term effects of apple vinegar consumption on the systolic and diastolic blood pressure, heart rate and pulse pressure in healthy subjects

Design
A clinical trial with a control group will be used and randomization will be done on the basis of random blocks.

Settings and conduct
Volunteers are selected based on the criteria for entering the study. On the day of the test, 4 hours after breakfast, the control group receives 200 cc of water while the test groups receive specific doses of 5% vinegar (22, 28 and 34 g vinegar), which are raised to 200 cc by adding water. Blood pressure is measured by a pressure indicator and heart rate on the basis of the electrocardiogram before receiving vinegar and with 15-minute intervals after receiving vinegar for 120 minutes using the same method. This study will be conducted at the cardiovascular Research Center of Guilan University of Medical Sciences.

Participants/Inclusion and exclusion criteria
Inclusion criteria of study are: Healthy people with no history of allergy to vinegar, no smoking, having a body mass index between 18.5 to 29.9 Kg/m2. Exclusion criterion of study is: unwillingness of individuals to cooperate with the study procedure.

Intervention groups
The control group will receive single dose of 200 cc of mineral water. The intervention group 1 will receive single dose of 22 grams of 5% traditional apple vinegar whose volume is raised to 200 cc by adding water, the intervention group 2 will receive single dose of 28 grams of 5% traditional apple vinegar whose volume is raised to 200 cc by adding water, the intervention group 3 will receive single dose of 32 grams of 5% traditional apple vinegar whose volume is raised to 200 cc by adding water.

Main outcome variables
Reduction of systolic and diastolic blood pressure

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20171203037724N1**
Registration date: **2018-10-13, 1397/07/21**
Registration timing: **prospective**

Last update: **2018-10-13, 1397/07/21**
Update count: **0**

Registration date
2018-10-13, 1397/07/21

Registrant information

Name
Shirin Parvinroo

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 13 3348 6470

Email address
shirin.parvinroo@gums.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2018-10-22, 1397/07/30

Expected recruitment end date
2019-01-20, 1397/10/30

Actual recruitment start date
empty

Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Investigating the short-term effects of apple vinegar consumption on systolic and diastolic blood pressure, pulse pressure and heart rate in healthy subjects

Public title
Investigating apple vinegar effects on blood pressure in healthy subjects
Purpose
Prevention
Inclusion/Exclusion criteria
Inclusion criteria:
20 to 60 years healthy people No history of allergy to vinegar No digestive problems such as reflux and stomach problems No smoking a body mass index between 18.5 to 29.9 Kg/m2
Exclusion criteria:
Unwillingness of individuals to cooperate with the study procedure
Age
From **20 years** old to **60 years** old
Gender
Both

Phase
2
Groups that have been masked
No information
Sample size
Target sample size: **40**
Randomization (investigator's opinion)
Randomized
Randomization description
Randomization method and description: Randomization method is based on gradual referrals and having inclusion criteria and interest in participating in the study. Randomization unit: individual Randomization layers: gender Randomization Tool: Random Allocation Software The method of creating a random sequence: Sequence Allocation concealment: Selection sequence of samples is divided into four groups of women (20) and men (20) that are kept in sealed letters at the Cardiovascular Diseases Research Center of Heshmat Hospital at Rasht and are opened at the beginning of the study each morning and closed at night from outset of the study. Based on the sex of the samples and having the criteria for entering the sequencing, the samples are placed in one of the four groups (low dose - moderate dose- high dose and control).
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
Ethics committee of Guilan University of Medical Sciences
Street address
Deputy of Research and Technology of Guilan University of Medical Sciences, opposite 17th Shahrivar Hospital, Shahid Siadati St., Namjoo Blv.
City
Rasht
Province
Guilan
Postal code
41446-66949
Approval date
2018-06-11, 1397/03/21
Ethics committee reference number
IR.GUMS.REC.1397.102

Health conditions studied

1

Description of health condition studied
Blood pressure
ICD-10 code
I10
ICD-10 code description
Essential (primary) hypertension

Primary outcomes

1

Description
Reduction of systolic and diastolic blood pressure
Timepoint
Ṣystolic and diastolic blood pressure will be measured before intervention and with 15-minute intervals after intervention up to 120 minutes.
Method of measurement
Systolic and diastolic blood pressure will be measured by a digital sphygmomanometer.

Secondary outcomes

1

Description
Pulse pressure
Timepoint
Before intervention and with 15-minute intervals after intervention up to 120 minutes
Method of measurement

Difference of systolic and diastolic blood pressure

2

Description
Heart rate
Timepoint
Before intervention and end of intervention
Method of measurement
Electrocardiogram

Intervention groups

1

Description
The intervention group 1 will receive single dose of 22 grams of 5% traditional apple vinegar whose volume is raised to 200 cc by adding water.
Category
Prevention

2

Description
The intervention group 2 will receive single dose of 28 grams of 5% traditional apple vinegar whose volume is raised to 200 cc by adding water.
Category
Prevention

3

Description
The intervention group 3 will receive single dose of 32 grams of 5% traditional apple vinegar whose volume is raised to 200 cc by adding water.
Category
Prevention

4

Description
The control group will receive single dose of 200 cc of mineral water.
Category
Prevention

Recruitment centers

1

Recruitment center
Name of recruitment center
Cardiovascular Diseases Research Center, Dr. Heshmat Hospital
Full name of responsible person
Shirin Parvinroo
Street address
Bayani Street., Mosalla Square.
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Rasht University of Medical Sciences
Full name of responsible person
Shadman Nemati
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Deputy of Research and Technology of Guilan University of Medical Sciences, opposite 17th Shahrivar Hospital, Shahid Siadati St., Namjoo Blv.
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Rasht University of Medical Sciences
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
Rasht University of Medical Sciences
Full name of responsible person
Shirin Parvinroo
Position
Assistant Professor

Latest degree
Ph.D.
Other areas of specialty/work
Traditional pharmacy
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available
Study Protocol
No - There is not a plan to make this available
Statistical Analysis Plan
No - There is not a plan to make this available
Informed Consent Form
No - There is not a plan to make this available
Clinical Study Report
No - There is not a plan to make this available
Analytic Code
No - There is not a plan to make this available
Data Dictionary
No - There is not a plan to make this available