Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of the Effect of Short-Term Supplementation of Garlic and Ginger on Delayed Onset Muscle Soreness and Muscular Damage Induced by a Progressive Resistance Training Session in Inactive Middle-Aged Women

Protocol summary

Study aim

Comparison of the effect of short-term supplementation of garlic and ginger on delayed onset muscle soreness and muscular damage induced by a progressive resistance training session in inactive middle-aged women

Design

A clinical trial with a control group, with parallel groups,single blind , randomized, phase 3 on 21 patients. For simple randomization, the lottery method will be used.

Settings and conduct

In the first session,full body resistance exercises will be done in the gym of Chalus city. Then blood samples and functional indicators of muscle pain perception will be measured and the subjects will be randomized and blinded (using the same packaging for supplements). They will be placed in one of the 3 intervention groups and will take supplements for 14 days. The second session will be held similar to the first session.

Participants/Inclusion and exclusion criteria

Among inactive healthy women with an age range of 35 to 55 years, intolerance to all kinds of diseases or injuries, absence of injuries and abnormal injuries to the research

Intervention groups

The first intervention group: together with the intervention of sports training, ginger supplement that consumes 2 capsules of 500 mg of ginger produced by Gol Daro pharmaceutical factory in 2 meals with 250 ml of water. The second intervention group: Along with the intervention of sports training, garlic supplement, which consumes 2 capsules of 500 mg of garlic produced by Gol Daro pharmaceutical factory in 2 meals with 250 ml of water. The third intervention group: together with the intervention of sports training, a placebo that consumes 2 capsules of 500 mg of starch produced by the pharmaceutical factory of Gol Daru company in 2 meals with 250 ml of water.

Main outcome variables

lactate dehydrogenase level, creatine kinase level, thigh circumference, knee joint range of motion, perception of muscle pain

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230805059042N1**
Registration date: **2023-09-07, 1402/06/16**
Registration timing: **retrospective**

Last update: **2023-09-07, 1402/06/16**
Update count: **0**

Registration date

2023-09-07, 1402/06/16

Registrant information

Name
Mahya Hodaei
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Iran (Islamic Republic of)
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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date
2023-08-12, 1402/05/21
Expected recruitment end date
2023-08-17, 1402/05/26
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Comparison of the Effect of Short-Term Supplementation of Garlic and Ginger on Delayed Onset Muscle Soreness and Muscular Damage Induced by a Progressive Resistance Training Session in Inactive Middle-Aged Women

Public title
Comparison of the Effect of Supplementation of Garlic and Ginger on Delayed Onset Muscle Soreness and Muscular Damage
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Healthy inactive middle-aged women with an age range of 35 to 55 years Having a BMI in the range of 26 to 30
Exclusion criteria:
Suffering from various diseases or musculoskeletal injuries Suffering from specific and underlying diseases (Diabetes, Cardiovascular diseases, Endocrine diseases, Blood pressure disorders (Hypertension or Hypotension), etc.) Smoking or alcohol consumption Use of anti-inflammatory, steroid and non-steroidal drugs for at least 2 months before Use of any antioxidant supplements in the 6 months prior to the start of the study Any sensitivity or allergy to research supplements History of regular physical activity or sports in the six months before the start of the research
Age
From **35 years** old to **55 years** old
Gender
Female

Phase
3
Groups that have been masked

- Participant

Sample size
Target sample size: **21**
Randomization (investigator's opinion)
Randomized
Randomization description
After determining the age and pairing of the participants, they will be grouped by a simple random method. In this way, 3 number envelopes including envelope number 1, envelope number 2 and envelope number 3 will be considered for 3 groups of ginger supplement, garlic supplement and starch supplement. And the lottery will be done by someone other than the researcher.
Blinding (investigator's opinion)
Single blinded
Blinding description
In the present study, the participants were blinded. The purpose and reason of the research will be explained to the participants in the briefing session and then the informed consent form will be taken from the participants. The participants will not be informed in which of the consumption groups of garlic, ginger or starch supplements.The intervention in the three groups is completely similar in terms of shape, color, smell, and the way of taking the supplements as well as the training sessions.
Placebo
Used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of Islamic Azad University, Tunkabon branch
Street address
Kilometer 3 Chalus-Wali Abad road, Tankabon Islamic Azad University complex
City
Tonekabon
Province
Mazandaran
Postal code
4684161167
Approval date
2023-07-11, 1402/04/20
Ethics committee reference number
IR.IAU.TON.REC.1402.043

Health conditions studied

1

Description of health condition studied
Delayed contusion and muscle damage
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Lactate dehydrogenase level
Timepoint
Before the intervention and 14 days after the intervention (at each turn, immediately after training)

Method of measurement
Blood sampling from the pre-elbow vein after the training session

2

Description
creatine kinase level
Timepoint
Before the intervention and 14 days after the intervention (at each turn, immediately after training)
Method of measurement
Blood sampling from the pre-elbow vein after the training session

Secondary outcomes

1

Description
Circumference around the thigh
Timepoint
Before the intervention and 14 days after the intervention(At any time, immediately and 24 hours after training)
Method of measurement
Tape measure

2

Description
Knee joint range of motion
Timepoint
Before the intervention and 14 days after the intervention(At any time, immediately and 24 hours after training)
Method of measurement
Goniometer

3

Description
Perception of muscle pain
Timepoint
Before the intervention and 14 days after the intervention(At any time, immediately and 24 hours after training)
Method of measurement
Visual Analog Scale Questionnaire

Intervention groups

1

Description
The first intervention group: the ginger supplement group that consumes 2 capsules of 500 mg of Gol Daru ginger manufacturing plant daily in 2 meals with 250 ml of water.
Category
Treatment - Drugs

2

Description
The second intervention group: the garlic supplement group that consumes 2 capsules of 500 mg of garlic produced by Gol Daru pharmaceutical factory in 2 meals with 250 ml of water daily.
Category
Treatment - Drugs

3

Description
The third intervention group: the placebo group that consumes 2 capsules of 500 mg of starch produced by Gol Daru pharmaceutical factory in 2 meals with 250 ml of water daily.
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center
Name of recruitment center
Health and treatment network of Chalus city - Ayatollah Taleghani Hospital
Full name of responsible person
Fatemeh Soltanifar
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Imam Street, Salamat Alley, Health Network and Taleghani Hospital
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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Full name of responsible person
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Phone
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sdamanpak@gmail.com
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
Islamic Azad University, Tonekabon branch
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
Academic

Person responsible for general inquiries

Contact
Name of organization / entity
Islamic Azad University
Full name of responsible person
Mahya Hodaei
Position
Student
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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
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