

# 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 Daro 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

##### Name of organization / entity

##### Country

Iran (Islamic Republic of)

##### Phone

+98 11 5423 7182

##### Email address

mahya.hodaei@gmail.com

##### 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

##### Street address

Imam Street, Salamat Alley, Health Network and Taleghani Hospital

##### City

Chalus

##### Province

Mazandaran

##### Postal code

4661619373

##### Phone

+98 11 5219 0413

##### Email

behdashtchalos@yahoo.com

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Islamic Azad University

##### Full name of responsible person

Samaneh Damanpak

##### Street address

Kilometer 3 Chalus-Waliabad road, Tonekabon Islamic Azad University complex

##### City

Tonekabon

##### Province

Mazandaran

##### Postal code

4684161167

**Phone**

+98 930 545 5041

**Email**

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

**Latest degree**

Bachelor

**Other areas of specialty/work**

Physiology

**Street address**

Eastern Ferdowsi Blvd, Elahia Town, First Entry,  
Number 17

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**Person responsible for scientific inquiries****Contact****Name of organization / entity**

Islamic Azad University

**Full name of responsible person**

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Islamic Azad University

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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