

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

06 Jul 2026

### Effect of an endurance-resistant exercise course with supplementation with Al-Citrulline-Malate On FGF and VEGF in young bodybuilders

#### Protocol summary

##### Study aim

Evaluation of the effects of a resistance-endurance training course along with supplementation of l-citrulline malate on VEGF and FGF in young bodybuilders

##### Design

Exercise + Supplement Exercise Supplement control A clinical trial with a control group, with parallel groups, has been randomized The sample size is 10 people in each group

##### Settings and conduct

pishva/ varamin- Saeed Sports Room- Weekly, 4 days a week- Exercise based on elastomeric strength training and supplementation of l-citrulline-malate-Variation in vascular endothelial growth factor and fibroblastic growth factor- By comparing the averages in the four groups at the beginning and end of the study.

##### Participants/Inclusion and exclusion criteria

No drug intake Regular exercise 4 sessions a week Inclusion criteria: Lack of supplements of l-citrulline malate or arginine-containing compounds - And other sports supplements No history of metabolic disease Lack of smoking Playing in a regular and athletic club at the provincial level Regular exercise 4 sessions a week

##### Intervention groups

Exercise + Supplement: Exercise program for 8 weeks and taking L-Citrulline Malate with a dose of 3 g per day for 60 days Exercise : Exercise program for 8 weeks Supplement:taking L-Citrulline Malate with a dose of 3 g per day for 60 days control: No Exercise and Supplement

##### Main outcome variables

Muscular pain,The pain of bleeding,Time to practice

#### General information

##### Reason for update

##### Acronym

و VEGF و FGF ال سيتروولين مالات و

##### IRCT registration information

IRCT registration number: **IRCT20171210037809N1**

Registration date: **2018-11-21, 1397/08/30**

Registration timing: **retrospective**

Last update: **2018-11-21, 1397/08/30**

Update count: **0**

##### Registration date

2018-11-21, 1397/08/30

##### Registrant information

###### Name

farah nameni

###### Name of organization / entity

###### Country

Iran (Islamic Republic of)

###### Phone

+98 21 8843 6932

###### Email address

f.nameni@yahoo.co.uk

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2018-11-06, 1397/08/15

##### Expected recruitment end date

2018-11-21, 1397/08/30

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Effect of an endurance-resistant exercise course with supplementation with Al-Citrulline-Malate On FGF and VEGF in young bodybuilders

##### Public title

The effect of exercise and l-citrulline malate on FGF and

VEGF

**Purpose**  
Basic science

**Inclusion/Exclusion criteria**  
**Inclusion criteria:**  
Fitness club members The age range was between 19 and 24 years old  
**Exclusion criteria:**  
Lack of supplements of l-citrulline malate or arginine-containing compounds

**Age**  
From **19 years** old to **24 years** old

**Gender**  
Male

**Phase**  
N/A

**Groups that have been masked**  
*No information*

**Sample size**  
Target sample size: **40**

**Randomization (investigator's opinion)**  
Randomized

**Randomization description**  
Individual The statistical sample consists of members of the sports clubs of the provincial capital. They were selected randomly ,And had the requirements set out in the descriptive questionnaire Their names were the same on the same sheets - And among them 40 papers by an unrelated person was selected by research -Of course, the names of the people were people- They had the requirements set out in the descriptive questionnaire- There were physical and health conditions and sports

**Blinding (investigator's opinion)**  
Not blinded

**Blinding description**

**Placebo**  
Not used

**Assignment**  
Factorial

**Other design features**  
-

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Ethics Committee: Islamic Azad University of Varamin  
Pishva

##### Street address

Naghshe-jahan/Pishva

##### City

Pishva

##### Province

Tehran

##### Postal code

1637876791

#### Approval date

2018-05-22, 1397/03/01

#### Ethics committee reference number

IR.IAU.VARAMIN.REC.1397.007

## Health conditions studied

### 1

#### Description of health condition studied

DO NOT HAVE ILLNESS

#### ICD-10 code

#### ICD-10 code description

## Primary outcomes

### 1

#### Description

Changes in FGF and VEGF Comparison of the meanings at the beginning of the supplementary period And at the end, after the supplement And sports activities are considered

#### Timepoint

Before the training period and after the supplement

#### Method of measurement

Special kit

### 2

#### Description

VEGF : Changes in VEGF Comparison of the meanings at the beginning of the supplementary period And at the end, after the supplement And sports activities are considered

#### Timepoint

Before the training period and after the supplement

#### Method of measurement

Special kit

## Secondary outcomes

empty

## Intervention groups

### 1

#### Description

1-Intervention group: L Citrulline Malate: Blood sampling for pretest immediately before starting the activity from each participate resistance - endurance training program for 8 weeks, Supplements 3 grams per day For 60 days. And blood sampling at the end of the research. Blood sampling at the end of the study. El Citrulline Malatol Complex, Ciudad Entrepreneur, 90 Kaspeln Citrulline Malate 3000 mg pro Portion

#### Category

N/A

## 2

### **Description**

2-control group No training and supplementation

### **Category**

N/A

## 3

### **Description**

Intervention group: 3- Group just practice - The protocol is similar to 1 resistance - endurance training program for 8 weeks,

### **Category**

N/A

## 4

### **Description**

Intervention group: 4- The group only supplements - The protocol is similar to 1: Supplements 3 grams per day For 60 days. Blood sampling at the end of the study. El Citrulline Malatol Complex, Ciudad Entrepreneur, 90 Kaspeln Citrulline Malate3000 mg pro Portion

### **Category**

N/A

## **Recruitment centers**

### 1

#### **Recruitment center**

##### **Name of recruitment center**

We have no illness

##### **Full name of responsible person**

Saiid Naiini

##### **Street address**

Naghshe-Jahan/ Pishva

##### **City**

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##### **Province**

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##### **Postal code**

33817-74895

##### **Phone**

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##### **Fax**

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##### **Email**

info@iauvaramin.ac.ir

##### **Web page address**

http://www.iauvaramin.ac.ir.

## **Sponsors / Funding sources**

### 1

#### **Sponsor**

##### **Name of organization / entity**

IAU/Varamin

##### **Full name of responsible person**

Peyman Azizi

##### **Street address**

Naghshe- Jahan/ Pishva

##### **City**

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##### **Web page address**

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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**

IAU/Varamin

#### **Proportion provided by this source**

1

#### **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**

Farah Nameni

##### **Position**

Asistant Prof.

##### **Latest degree**

Ph.D.

##### **Other areas of specialty/work**

Sport Medicine

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## Person responsible for scientific inquiries

### Contact

**Name of organization / entity**

Islamic Azad University

**Full name of responsible person**

Farah Nameni

**Position**

Assist. Prof.

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Ph.D.

**Other areas of specialty/work**

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## Person responsible for updating data

### Contact

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**Full name of responsible person**

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**Position**

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**Latest degree**

Ph.D.

**Other areas of specialty/work**

Others

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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**

Not applicable

**Informed Consent Form**

Undecided - It is not yet known if there will be a plan to make this available

**Clinical Study Report**

Not applicable

**Analytic Code**

Not applicable

**Data Dictionary**

Not applicable