

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 سیترو لین 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 Malate 3000 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

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33817-74895

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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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Province

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Web page address

https://www.iau.ac.ir

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

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Ph.D.

Other areas of specialty/work

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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

Person responsible for updating data

Contact

Name of organization / entity

Islamic Azad University

Full name of responsible person

Peyman Azizi

Position

Assist. Prof