Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 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
VEGF و FGF ال سیترولین 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 scienece

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 VEGFComparison 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 VEGFComparison 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 Malate3000 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
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Email
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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
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Email
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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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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