Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

Effect of an endurance, resistant exercise course with L Citrulline Malate supplementation On NO and GH in young Wrestlers

Protocol summary

Study aim
Evaluation of the effects of a resistance, endurance training course along with supplementation of L Citrulline Malate on NO and GH in young Wrestlers

Design
Exercise and 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 City, Saeed Sports Room, 8 Weeks, 4 days a week, Exercise based on elastomeric strength training and supplementation of L Citrulline Malate, Variation in Growth Hormone factor and Nitric Oxide factor by comparing the averages in the four groups at the beginning and end of the study.

Participants/Inclusion and exclusion criteria
1. No drug intake 2. Lack of supplements of L Citrulline Malate or Arginine containing compounds, and other sports supplements 3. No history of metabolic disease 4. Lack of smoking 5. Playing in a regular and athletic club at the provincial level 6. 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

IRCT registration information
IRCT registration number: **IRCT20181124041744N1**
Registration date: **2018-12-30, 1397/10/09**
Registration timing: **retrospective**

Last update: **2018-12-30, 1397/10/09**
Update count: **0**

Registration date
2018-12-30, 1397/10/09

Registrant information

Name
Farshad Varjavand

Name of organization / entity
Ministry of Cooperatives, Labor, and Social Affairs

Country
Iran (Islamic Republic of)

Phone
+98 21 3627 2909

Email address
varjavand@hotmail.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2018-12-06, 1397/09/15

Expected recruitment end date
2018-12-21, 1397/09/30

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Effect of an endurance, resistant exercise course with L Citrulline Malate supplementation On NO and GH in young Wrestlers

Public title

The effect of exercise and L Citrulline Malate on NO and GH

Purpose

Basic scienece

Inclusion/Exclusion criteria

Inclusion criteria:

Wrestling club members The age range was between 18 and 20 years old.

Exclusion criteria:

Lack of supplements of L Citrulline Malate or arginine containing compounds

Age

From **18 years** old to **20 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **40**

Actual sample size reached: **32**

Randomization (investigator's opinion)

Randomized

Randomization description

Individual The statistical sample 190 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

Exercise and 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.

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee: Islamic Azad University of Varamin Pishva

Street address

Naghshe jahan

City

Pishva

Province

Tehran

Postal code

1637876791

Approval date

2018-05-22, 1397/03/01

Ethics committee reference number

IR.IAU.VARAMIN.REC.1397.012

Health conditions studied

1

Description of health condition studied

Relation between Endurance, Resistance exercise course with L Citrulline Malate Supplementation on NO and GH in young Wrestlers

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Changes in NO and 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

Changes in GH and 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

Intervention group 1: L Citrulline Malate, Blood sampling for pretest immediately before starting the activity from each participate resistance and Supplements 3 grams per day for 60 days. endurance training program for 8 weeks and blood sampling at the end of the research. L

Citrulline Malate Supplements of Hungarian Scitec company, 90 Kaspeln Citrulline Malate 3000 mg pro Portion

Category

N/A

2

Description

Intervention group 2: Only practice (The protocol is similar to 1) Resistance, endurance training program for 8 weeks.

Category

N/A

3

Description

Intervention group 3: Only supplements (The protocol is similar to 1) Supplements 3 grams per day For 60 days. Blood sampling at the end of the research. L Citrulline Malate Supplements of Hungarian Scitec company, 90 Kaspeln Citrulline Malate 3000 mg pro Portion

Category

N/A

4

Description

Control group 4: No training and supplementation

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

We have no illness

Full name of responsible person

Farshad Varjavand

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33817-74895

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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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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

Ministry of Cooperatives, Labor, and Social Affairs

Full name of responsible person

Farshad Varjavand

Position

Teacher

Latest degree

Master

Other areas of specialty/work

Nutrition

Street address

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Person responsible for scientific inquiries

Contact

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Full name of responsible person
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Position
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Person responsible for updating data

Contact

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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