

Clinical Trial Protocol

Iranian Registry of Clinical Trials

12 Jul 2026

Effect of L-Arginine supplementation on exercise performance and blood lactate levels in athletes

Protocol summary

Summary

Many studies have been carried out regarding the effect of L-arginine supplementation on physical performance and blood lactate levels in athletes, but the result are contradictory. The aim of this study was to determine the effect of L-arginine supplementation on exercise performance and blood lactate levels in athletes. Thirty healthy male athletes were enrolled and randomly divided in two groups in a single blind placebo-controlled trial. Subject performed exercise test before and after intake of L-arginine (5 g per day) or placebo for a period of 3 weeks. The exercise tests were carried out by the time anaerobic threshold was reached by conconi protocol on treadmill. Three blood samples for measurement of blood lactate were obtained before exercise test, at the end of exercise test, and 30 minutes after the end of exercise. the indexes of exercise performance such as VO₂max, distance, time, energy expenditure and heart rate in anaerobic threshold can be measured by conconi test.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201009064703N1**

Registration date: **2010-09-08, 1389/06/17**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2010-09-08, 1389/06/17

Registrant information

Name

Alireza Moazzezaneh

Name of organization / entity

Tehran University of Medical Sciences

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Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Tehran University of Medical Sciences

Expected recruitment start date

2009-01-20, 1387/11/01

Expected recruitment end date

2009-02-10, 1387/11/22

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of L-Arginine supplementation on exercise performance and blood lactate levels in athletes

Public title

Effect of L - Arginine supplementation in athletes

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria: 1- sex: man 2- no intake of L- arginine supplement or other supplements 3- no intake of drugs 4- to be athlete Exclusion criteria: 1- intake of supplement or doping drugs 2- intake of drugs 3- intake of L - arginine supplement 4- have a medical problem

Age

From **20 years** old to **25 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 30

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Tehran University of Medical Sciences

Street address

Keshavarz Boulevard, Tehran

City

Tehran

Postal code

Approval date

empty

Ethics committee reference number

4229

Health conditions studied

1

Description of health condition studied

Physical activity in athletes

ICD-10 code

-

ICD-10 code description

-

Primary outcomes

1

Description

blood lactate

Timepoint

before exercise test, immediately after test and 30 minutes after test in day 1 and day 21

Method of measurement

lactometer, mmol/l

2

Description

energy at anaerobic threshold

Timepoint

day 1 and day 21

Method of measurement

treadmill, kcal

3

Description

distance to reach anaerobic threshold

Timepoint

day 1 and day 21

Method of measurement

treadmill, meter

4

Description

time to reach anaerobic threshold

Timepoint

day 1 and day 21

Method of measurement

treadmill, s

5

Description

heart rate at anaerobic threshold

Timepoint

day 1 and day 21

Method of measurement

treadmill, beats per min

6

Description

VO2max at anaerobic threshold

Timepoint

day 1 and day 21

Method of measurement

treadmill, ml/min/kgbw

Secondary outcomes

1

Description

body mass index

Timepoint

day 1 and day 21

Method of measurement

kg/m2, calculate

2

Description

weight

Timepoint

day 1 and day 21

Method of measurement

INBODY3, kg

3

Description

lean body mass

Timepoint

day 1 and day 21

Method of measurement

INBODY 3, Kg

4

Description

fat mass

Timepoint

day 1 and day 21

Method of measurement

INBODY 3, Kg

Intervention groups

1

Description

Intervention: Intake of l - arginine (5 g per day) for a period of 3 weeks. time of intake: 2 h after dinner.

Category

Treatment - Drugs

2

Description

Control: Placebo (5 g per day) such as starch tablets for a period of 3 weeks. time of intake: 2 h after dinner.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

National Olympic Academia

Full name of responsible person

Dr Seyed Ali Keshavarz, professor, Nutrition and Biochemistry group, Tehran University of Medical Sc

Street address

Seol st.,

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Dr Seyed Ali Keshavarz

Street address

Tehran University of Medical Sciences, Nutrition and Biochemistry Group

City

Tehran

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Tehran University of Medical Sciences

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Dr Ali Akbar Saboor Yaraghi

Position

Assistant professor, Nutrition and Biochemistry group

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Person responsible for scientific inquiries

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty