

# 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 VO<sub>2</sub>max, 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

##### Country

Iran (Islamic Republic of)

##### Phone

+98 21 6637 7435

##### Email address

moazzez\_a@yahoo.com

##### 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/m<sup>2</sup>, 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

**Other areas of specialty/work**

**Street address**

Keshavarz Boulevard, Tehran University of Medical Sciences, Nutrition and Biochemistry group

**City**

Tehran

**Postal code**

**Phone**

+98 21889739014

**Fax**

**Email**

Saboor\_A@yahoo.com

**Web page address**

## Person responsible for scientific inquiries

**Contact**

**Name of organization / entity**

Tehran University of Medical Sciences

**Full name of responsible person**

Dr Seyed Ali Keshavarz

**Position**

Professorr of Nutrition and Biochemistry group

**Other areas of specialty/work**

**Street address**

Tehran University of Medical Sciences, Nutrition and Biochemistry group

**City**

Tehran  
**Postal code**  
**Phone**  
+98 21889739014  
**Fax**  
**Email**  
S\_Akeshavarz@yahoo.com  
**Web page address**

## Person responsible for updating data

### Contact

**Name of organization / entity**  
Tehran University of Medical Sciences  
**Full name of responsible person**  
Alireza Moazzezaneh  
**Position**  
MSc  
**Other areas of specialty/work**  
**Street address**  
Tehran University of Medical Sciences, Nutrition and  
Biochemistry group  
**City**  
Tehran  
**Postal code**

**Phone**  
+98 21 6637 7435  
**Fax**  
**Email**  
moazzez\_a@yahoo.com;  
alireza\_muazzez@yahoo.com  
**Web page address**

## 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*