

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

effect of citrulline-malate supplement on maximal strength and anaerobic power of middle aged male tennis players

Protocol summary

Study aim

Determining the effect of citrulline malate supplementation on maximal strength and anaerobic power of middle-aged male tennis players

Design

counterbalanced within-subject design and double-blind setup

Settings and conduct

This study will be performed in Kermanshah city. Subjects are randomly divided into two groups A and B. A Group receives a supplement in the first stage and a placebo in the next stage and B group receives a placebo first and then a supplement.

Participants/Inclusion and exclusion criteria

Middle-aged men 45 to 64 years old

Intervention groups

Citrulline malate supplement group

Main outcome variables

Maximum grip strength vertical jump Anaerobic power

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20170326033146N4**

Registration date: **2021-03-13, 1399/12/23**

Registration timing: **prospective**

Last update: **2021-03-13, 1399/12/23**

Update count: **0**

Registration date

2021-03-13, 1399/12/23

Registrant information

Name

Vahid Tadibi

Name of organization / entity

Razi University

Country

Iran (Islamic Republic of)

Phone

+98 83 3427 9265

Email address

vahidtadibi@razi.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-04-04, 1400/01/15

Expected recruitment end date

2021-04-19, 1400/01/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

effect of citrulline-malate supplement on maximal strength and anaerobic power of middle aged male tennis players

Public title

The effect of citrulline-malate on maximal strength and anaerobic power

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

Men 45-64 years old Play tennis for two years on a regular basis

Exclusion criteria:

Smoking Take any supplements in the last year Having any chronic disease Joint and muscle injuries

Age

From **45 years** old to **64 years** old

Gender

Male

Phase

3

Groups that have been masked

- Participant
- Investigator

Sample size

Target sample size: **16**

Randomization (investigator's opinion)

Randomized

Randomization description

Permuted block randomization; allocation of subjects will be performed using permuted block randomization with four blocks of four (two for experimental and two for the control group in each block) until reaching two equal groups of 8 in each. To do this, random sequencing software is used, and random allocation software is used, and others other than researchers in the implementation of interventions and measurements in the event of a trial.

Blinding (investigator's opinion)

Double blinded

Blinding description

In this study, supplementation is done in a double-blind setup. This means that neither the subject nor the researcher knows that the subjects have taken a supplement or placebo.

Placebo

Used

Assignment

Crossover

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Kermanshah Razi University

Street address

Tagh-e-Bostan, University St.

City

Kermanshah

Province

Kermanshah

Postal code

6714414971

Approval date

2021-02-24, 1399/12/06

Ethics committee reference number

IR.RAZI.REC.1399.065

Health conditions studied

1

Description of health condition studied

The subject of study is not disease.

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Peak and average anaerobic power

Timepoint

Measurement of anaerobic strength after supplementation and placebo in two groups A and B

Method of measurement

Monark 894 Wingate Wheel

2

Description

Maximum grip strength

Timepoint

The maximum strength of the grip after supplementation and placebo is measured in two groups A and B.

Method of measurement

Digital dynamometer

3

Description

Vertical jump height

Timepoint

Vertical jump after supplementation and placebo is measured in two groups A and B.

Method of measurement

Calibrated ruler

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Citrulline malate supplement will be consumed as a drink, including 200 ml of water, eight grams of citrulline malate, 20 ml of lemon juice, and 10 grams of sugar one hour before the training tests.

Category

Placebo

2

Description

Control group: The control group (placebo) will take maltodextrin.

Category
Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Razi university

Full name of responsible person

Majid Pornouri

Street address

No. 125, 22 Bahman Ave., 30 meters second Blvd.

City

Kermanshah

Province

Kermanshah

Postal code

6714683757

Phone

+98 83 3837 9358

Email

pornorim40@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Razi University

Full name of responsible person

Farzad Veisi

Street address

Deputy of Research and Technology, Razi University,
University St., Tagh-e-Bostan,

City

Kermanshah

Province

Kermanshah

Postal code

6714414971

Phone

+98 83 3427 4515

Fax

Email

veysi@razi.ac.ir

Web page address

<https://are.razi.ac.ir/%D8%B5%D9%81%D8%AD%D9%87-1>

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Razi University

Proportion provided by this source

100

Public or private sector

Public

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

Razi University

Full name of responsible person

Vahid Tadibi

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

Street address

School of Sports Sciences, Razi University, University
Blvd., Taghe Bostan

City

Kermanshah

Province

Kermanshah

Postal code

6714414971

Phone

+98 83 3427 9265

Email

vtadibi@yahoo.com

Web page address

<https://phe.razi.ac.ir/~vahidvadibi>

Person responsible for scientific inquiries

Contact

Name of organization / entity

Razi University

Full name of responsible person

Vahid Tadibi

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

Street address

School of Sports Sciences, Razi University, University
Blvd., Taghe Bostan

City

Kermanshah

Province

Kermanshah

Postal code

6714414971

Phone

+98 83 3427 9265

Email

vtadibi@yahoo.com

Web page address

<https://phe.razi.ac.ir/~vahidtadibi>

Person responsible for updating data**Contact****Name of organization / entity**

Razi University

Full name of responsible person

Vahid Tadibi

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

Street address

School of Sports Science, Razi University< University
Blvd., Taghe Bostan

City

Kermanshah

Province

Kermanshah

Postal code

6714414971

Phone

+98 83 3427 9265

Email

vtadibi@yahoo.com

Web page address

<https://phe.razi.ac.ir/~vahidtadibi>

Sharing plan**Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

no more information.

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

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

Title and more details about the data/document

All Data

When the data will become available and for how long

assess ability immediately after publication of the results

To whom data/document is available

Researchers

Under which criteria data/document could be used

For meta analysis

From where data/document is obtainable

Vahid Tadibi vtadibi@yahoo.com

What processes are involved for a request to access data/document

Maximum, one month after the request

Comments