Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 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/~vahidtadibi

Person responsible for scientific inquiries

Contact
Name of organization / entity
Razi University
Full name of responsible person
Vahid Tadibi
Position
Associate professor
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Ph.D.
Other areas of specialty/work
Physiology
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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
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Kermanshah
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Postal code
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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