Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

The effects of jump rope interval training and dark chocolate on serum levels of some inflammatory adipokines and cytokines in adolescent males with obesity

Protocol summary

Study aim

The aim of this study is to investigate the effects of dark chocolate supplementation and rope jump interval training on serum levels of some inflammatory adipokines and cytokines in adolescent males with obesity.

Design

Study design: Randomized double-blinded controlled clinical trial. Blinding is carried out for subjects and researchers and randomization will done using quadratic block. Statistical software (Minitab) will use to perform randomized block. Population and sample size: 48 sedentary adolescent males with obesity who are not participated in any regular training program for at least 6 months before the study.

Settings and conduct

This study will be conducted at Astan Qods Razavi Sports Complex. 48 sedentary adolescent males with obesity will be randomized to 4 groups: 1) interval training + placebo; 2) dark chocolate; 3) interval training + dark chocolate; and 4) Control. blinding will be done for interventions for both researchers and participants. randomization will done using quadratic block.

Participants/Inclusion and exclusion criteria

Inclusion criteria: adolescent males with obesity aged 13 to 17 years without participating in any regular training program Exclusion criteria: recent infections, joint and bone injuries, and symptoms of metabolic disease.

Intervention groups

Intervention 1: received 30 grams dark chocolate per day, for six weeks Intervention 2: exercise training including rope jump interval training, 5 times/wk Intervention 3: received one capsule containing chickpea flour, for six weeks

Main outcome variables

Body fat, irisin; interleukin-6; leptin; resistin; monocyte chemoattractant protein-1; adiponectin; tumor necrosis factor-alpha; C-reactive protein; chemerin; retinol binding protein-4; dietary intake

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20151025024699N5**
Registration date: **2020-03-19, 1398/12/29**
Registration timing: **retrospective**

Last update: **2020-03-19, 1398/12/29**
Update count: **0**

Registration date

2020-03-19, 1398/12/29

Registrant information

Name
Damoon Ashtary-Larky
Name of organization / entity
Ahvaz Jundishapur University of Medical Sciences
Country
Iran (Islamic Republic of)
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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-06-22, 1398/04/01

Expected recruitment end date

2019-10-23, 1398/08/01

Actual recruitment start date

2019-07-01, 1398/04/10

Actual recruitment end date
2019-11-26, 1398/09/05
Trial completion date
2020-03-02, 1398/12/12

Scientific title
The effects of jump rope interval training and dark chocolate on serum levels of some inflammatory adipokines and cytokines in adolescent males with obesity

Public title
The effects of jump rope interval training and dark chocolate on serum levels of some inflammatory adipokines and cytokines
Purpose
Prevention
Inclusion/Exclusion criteria
Inclusion criteria:
BMI=28.22 or more Without any metabolic disease No smoking No alcoholism Not taking supplements (including vitamins, minerals, ergogenic aids) and medication for at least 2 months before the study Not participating in any regular training program for at least 6 months before the study Interesting in participation in research Age of 13-17
Exclusion criteria:
Use of immune system suppressor drugs 6 mounts before research Recent infections Joint and bone injuries Metabolic disease No interesting for participation
Age
From **13 years** old to **17 years** old
Gender
Male

Phase
3
Groups that have been masked

- Participant
- Investigator

Sample size
Target sample size: **48**
Actual sample size reached: **48**
Randomization (investigator's opinion)
Randomized
Randomization description
Randomization will done using quadratic block. Statistical software (Minitab) will use to perform randomized block.
Blinding (investigator's opinion)
Double blinded
Blinding description
In this study, blinding will be done for interventions for both researchers and participants. The chocolates and capsules will be given in the same bottle and will be coded for each groups by someone who are not enroll in the study design .
Placebo
Used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Sports Sciences Research Institute
Street address
No. 3, 5th Alley, Miremad Street, Motahhari Street, Tehran, Iran.
City
Tehran
Province
Tehran
Postal code
1587958711
Approval date
2018-12-28, 1397/10/07
Ethics committee reference number
IR.SSRI.REC.1397.352

Health conditions studied

1

Description of health condition studied
Healthy, Obese
ICD-10 code
E66
ICD-10 code description
Overweight and obesity

Primary outcomes

1

Description
Irisin
Timepoint
Before and six weeks after intervention
Method of measurement
ELISA

2

Description
Interleukin 6
Timepoint
Before and six weeks after intervention
Method of measurement
ELISA

3

Description
Tumor necrosis factor alpha
Timepoint

Before and six weeks after intervention

Method of measurement

ELISA

4

Description

Adiponectin

Timepoint

Before and six weeks after intervention

Method of measurement

ELISA

5

Description

C-reactive protein

Timepoint

Before and six weeks after intervention

Method of measurement

ELISA

6

Description

Leptin

Timepoint

Before and six weeks after intervention

Method of measurement

ELISA

7

Description

Resistin

Timepoint

Before and six weeks after intervention

Method of measurement

ELISA

8

Description

Monocyte chemoattractant protein-1

Timepoint

Before and six weeks after intervention

Method of measurement

ELISA

9

Description

Chemerin

Timepoint

Before and six weeks after intervention

Method of measurement

ELISA

10

Description

Retinol binding protein-4

Timepoint

Before and six weeks after intervention

Method of measurement

ELISA

Secondary outcomes

1

Description

Body fat

Timepoint

Before and six weeks after intervention

Method of measurement

Body fat Analyzer

2

Description

Dietary intake

Timepoint

Before and six weeks after intervention

Method of measurement

Food record questionnaire

Intervention groups

1

Description

Intervention group: received 30 grams dark chocolate per day, for six weeks

Category

Lifestyle

2

Description

Intervention group: exercise training including rope jump interval training, 5 times/wk, for six weeks

Category

Lifestyle

3

Description

Control group: received one capsule containing chickpea flour, for six weeks

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Private

Full name of responsible person

Babak Hooshmand Hoghadam

Street address

Ferdowsi Blvd, Astan Qods Razavi Sports Complex

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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Sports Sciences Research Institute
Full name of responsible person
Babak Hooshmand Hoghadam
Street address
Faculty of Physical Education and Sport Science of Tehran University, Northern Kargar Ave, Tehran, Iran
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
Sports Sciences Research Institute
Proportion provided by this source
100
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
Persons

Person responsible for general inquiries

Contact
Name of organization / entity
University of Isfahan
Full name of responsible person
Reza Bagheri
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Person responsible for updating data

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Isfehan
Postal code

8174673441

Phone

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Email

will.fivb@yahoo.com

Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

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

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

Publication of protocol study in form of the article and also data publication in the original article. The total potential data can be shared after unidentifiable subjects.

When the data will become available and for how long

6 months after the publication of results

To whom data/document is available

All researchers who have access to clinical trials databases.

Under which criteria data/document could be used

The only way for using the data is after the publication of the article in the indexed ISI journal.

From where data/document is obtainable

Via database websites such as PubMed and google scholar and via email address: damoon_ashtary@yahoo.com

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

The original article reaches the requestor by email within a maximum of one week.

Comments