

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Acute effect of circuit training on blood hematological factors and Hecpidin before and after 12 weeks compound set training in active male

Protocol summary

Study aim

The purpose of this study will be determination of the acute effect of circuit exercise on hematological indices and blood hepcidin before and after twelve weeks of compound set training in active men

Design

Twenty healthy resistance trained men will be randomly divided into two 10 people in experimental and control groups

Settings and conduct

The exercises and blood sampling are done in the gym by an experienced trainer and by the nurse respectively. Subjects perform a circular training session before and after 12 weeks of resistance compound set training and blood sampling is taken before and after this one session.

Participants/Inclusion and exclusion criteria

Subjects are resistance trained men who have no cardiovascular and musculoskeletal diseases

Intervention groups

The experimental group will perform a circular exercise session. 48 hours after this session, the 12-week training period begins and ends. They then repeat the circular exercise. The control group will perform the same circular exercise before and after 12 weeks as the experimental group but with no exercise in these 12 weeks.

Main outcome variables

Hepcidin; Fe; Ferritin; red blood cells; white blood cells; Platelet; hemoglobin

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190927044893N1**

Registration date: **2020-03-22, 1399/01/03**

Registration timing: **retrospective**

Last update: **2020-03-22, 1399/01/03**

Update count: **0**

Registration date

2020-03-22, 1399/01/03

Registrant information

Name

Roghayyeh Afroundeh

Name of organization / entity

University of Mohaghegh Ardabili

Country

Iran (Islamic Republic of)

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+98 45 3359 3278

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-08-23, 1398/06/01

Expected recruitment end date

2019-11-21, 1398/08/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Acute effect of circuit training on blood hematological factors and Hecpidin before and after 12 weeks compound set training in active male

Public title

Effect of one session and a period of resistance training on blood hematological factors

Purpose

Basic science

Inclusion/Exclusion criteria

Inclusion criteria:

resistance trained male

Exclusion criteria:

having any musculoskeletal injuries using any drugs or supplements
Levels of blood variables such as iron, ferritin and hepcidin in abnormal range

Age

From **20 years** old to **30 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **20**

Randomization (investigator's opinion)

Randomized

Randomization description

The random number table will be used for simple randomization to assign subjects to the group. To use Random Number Tables, the researcher must first determine direction for reading numbers in table (for example, up, down, left or right). The second step for researcher is considering numbers for different groups (eg, even numbers for intervention A and odd numbers for intervention B). The researcher then selects one number and moves in one of the predetermined directions, records the numbers and assigning them to different groups.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Ardabil University of Medical Sciences

Street address

Ardabil, University of Mohaghegh Ardabili, Department of sport science

City

Ardabil

Province

Ardabil

Postal code

5619911367

Approval date

2019-07-21, 1398/04/30

Ethics committee reference number

IR.ARUMS.REC.1398.197

Health conditions studied

1

Description of health condition studied

iron metabolism in athletes

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Hepcidin

Timepoint

pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise

Method of measurement

Hepcidin by Elisa reader

2

Description

Fe

Timepoint

pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise

Method of measurement

Fe by auto analyzer

3

Description

Ferritin

Timepoint

pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise

Method of measurement

Ferritin by Gama counter

4

Description

Blood cells count

Timepoint

pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise

Method of measurement

Automated cell counter

5

Description

Hemoglobin

Timepoint

pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise

Method of measurement

Auto cell counter

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Subjects in this group will perform one circuit training session consisting of 10 resistance training stations with 40 to 60% of one maximal repetition. Then they will participate in a 12 weeks of resistance compound set training protocol. After this period, they will repeat a circuit training session.

Category

Diagnosis

2

Description

Control group: Subjects in this group will perform one circuit training session consisting of 10 resistance training stations with 40 to 60% of one maximal repetition. they will not participate in any activity during 12 weeks and after this period they will repeat a circuit training session.

Category

Diagnosis

Recruitment centers

1

Recruitment center

Name of recruitment center

University of Mohaghegh Ardabili

Full name of responsible person

Roghayyeh Afroundeh

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Department of Physical Education and Sport sciences,
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

University of Mohaghegh Ardabili

Full name of responsible person

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Grant name

Grant code / Reference number

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

Yes

Title of funding source

University of Mohaghegh Ardabili

Proportion provided by this source

50

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

University of Mohaghegh Ardabili

Full name of responsible person

Roghayyeh Afroundeh

Position

Faculty member

Latest degree

Ph.D.

Other areas of specialty/work

exercise physiology

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Person responsible for updating data

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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

No - There is not 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

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available

Title and more details about the data/document

There is possibility to share results and statistical information

When the data will become available and for how long

Start of access period 4 months after the results

To whom data/document is available

Academic Researchers and sport coaches

Under which criteria data/document could be used

For use in projects and sports fields

From where data/document is obtainable

Roghayyeh Afroundeh, afroundeh@gmail.com,
0989141532136

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

by email

Comments