

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Jun 2026

Effect of two resistance training protocols and detraining on muscle hypertrophy, hormonal and functional changes in track and field athletes

Protocol summary

Registration timing: **prospective**

Study aim

The effect of two resistance training protocols with different intensities on muscle hypertrophy and hormonal responses in track and field athletes

Last update: **2021-12-20, 1400/09/29**

Update count: **0**

Registration date

2021-12-20, 1400/09/29

Design

In a randomized clinical trial design, with parallel group, 45 track and field athletes are randomly assigned to one of three high-intensity, low-intensity or control groups. The measurements will be performed in five steps including pre-test, after one training session, after 12-week training and following four weeks of detraining.

Registrant information

Name

Dariush Sheikholeslami-Vatani

Name of organization / entity

University of Kurdistan

Country

Iran (Islamic Republic of)

Phone

+98 912 225 0724

Email address

d.vatani@uok.ac.ir

Settings and conduct

This study will be conducted in the city of Garmian in Iraq Kurdistan. After installing the announcement at the university of Garmian, subjects will be selected among the eligible individuals based on inclusion criteria.

Recruitment status

Recruitment complete

Funding source

Participants/Inclusion and exclusion criteria

Young men in track and field athletes who have not had a history of regular resistance training, metabolic-skeletal diseases, and taking sports supplements during the last six months are selected as a sample.

Expected recruitment start date

2022-01-21, 1400/11/01

Expected recruitment end date

2022-05-22, 1401/03/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Intervention groups

Subjects are divided into three groups: High intensity and Low-volume resistance training, Low-intensity and High-volume resistance training, and the control group (without resistance training program).

Scientific title

Effect of two resistance training protocols and detraining on muscle hypertrophy, hormonal and functional changes in track and field athletes

Main outcome variables

The results of this study can show the best resistance training protocol to increase muscle hypertrophy, as well as the best training method to develop muscle strength and endurance.

Public title

Resistance training intensity and muscle hypertrophy

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20140512017675N3**

Registration date: **2021-12-20, 1400/09/29**

Purpose

Health service research

Inclusion/Exclusion criteria

Inclusion criteria:

Lack of regular exercise training during the last six months Do not take medication or any sport supplements No metabolic and joints diseases

Exclusion criteria:

People who have experienced resistance training Age less than 18 years or more than 30 years Medical prohibition

Age

From **18 years** old to **30 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **45**

More than 1 sample in each individual

Number of samples in each individual: **5**

Each subject is evaluated in five stages (after participating in training and detraining programs).

Randomization (investigator's opinion)

Randomized

Randomization description

Subjects based on simple random sampling are assigned into High-intensity, Low-intensity or control groups. For this purpose, each subject will be assigned a code (1 to 45) randomly. Then, in the form of a lottery, the first 15 people are placed in the high-intensity resistance training group. Similarly, the second 15 and the third 15 are assigned in the low-intensity resistance training group and the control group, respectively.

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

Research Ethics Committee of University of Kurdistan

Street address

Pasdaran

City

Sanandaj

Province

Kurdistan

Postal code

66177-15170

Approval date

2021-07-10, 1400/04/19

Ethics committee reference number

IR.UOK.REC.1400.010

Health conditions studied

1

Description of health condition studied

Dose not contain a disease

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Muscle Hypertrophy

Timepoint

pre-test, after one training session, after 12-week training and after 4 weeks detraining

Method of measurement

Two-dimensional Ultrasound

2

Description

Serum concentration of testosterone hormone

Timepoint

pre-test, after one training session, after 12-week training and after 4 weeks detraining

Method of measurement

Elisa kit

3

Description

Serum concentration of IGF_1 hormone

Timepoint

pre-test, after one training session, after 12-week training and after 4 weeks detraining

Method of measurement

Elisa kit

4

Description

Serum concentration of cortisol hormone

Timepoint

pre-test, after one training session, after 12-week training and after 4 weeks detraining

Method of measurement

Elisa kit

5

Description

Muscle strength

Timepoint

pre-test, after one training session, after 12-week training and after 4 weeks detraining

Method of measurement

One repetition maximum (1-RM) test

6

Description

Muscle endurance

Timepoint

pre-test, after one training session, after 12-week training and after 4 weeks detraining

Method of measurement

One repetition maximum (1-RM) test

Secondary outcomes

1

Description

Body weight

Timepoint

pre-test, after one training session, after 12-week training and after 4-week detraining

Method of measurement

Weight scales

Intervention groups

1

Description

Intervention group: High-intensity and low volume resistance training group: This program lasts for 12 weeks, three sessions per week and each session includes seven resistance movements in three sets with an intensity of 70 to 80% of 1-RM (with 90-second rest intervals between movements). Each set continues until exhaustion. After a 12-week training program subjects experience four weeks of detraining (without any resistance training).

Category

Other

2

Description

Intervention group: Low-intensity and high volume resistance training group: This program lasts for 12 weeks, three sessions per week and each session includes seven resistance movements in three sets with an intensity of 30 to 50% of 1-RM (with 90-second rest intervals between movements). Each set continues until exhaustion. After a 12-week training program subjects experience four weeks of detraining (without any resistance training).

Category

Other

3

Description

Control group: Subjects in this group do not experience any resistance training or detraining.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

University of Kurdistan

Full name of responsible person

Dariush Sheikholeslami-Vatani

Street address

Pasdaran

City

Sanandaj

Province

Kurdistan

Postal code

66177-15175

Phone

+98 87 3366 4600

Email

d.vatani@uok.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

University of Kurdistan

Full name of responsible person

Kayomars Karami

Street address

Pasdaran

City

Sanandaj

Province

Kurdistan

Postal code

66177-15175

Phone

+98 87 3366 4600

Email

KKarami@uok.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

University of Kurdistan

Proportion provided by this source

20

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 Kurdistan

Full name of responsible person

Dariush Sheikholeslami-Vatani

Position

Faculty member

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

Street address

Pasdaran

City

Sanandaj

Province

Kurdistan

Postal code

66177-15175

Phone

+98 87 3366 4600

Email

d.vatani@uok.ac.ir

Person responsible for scientific inquiries**Contact****Name of organization / entity**

University of Kurdistan

Full name of responsible person

Dariush Sheikholeslami-Vatani

Position

Faculty member

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

Street address

Pasdaran

City

Sanandaj

Province

Kurdistan

Postal code

66177-15175

Phone

+98 87 3366 4600

Email

d.vatani@uok.ac.ir

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

University of Kurdistan

Full name of responsible person

Dariush Sheikholeslami-Vatani

Position

Faculty member

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

Street address

Pasdaran

City

Sanandaj

Province

Kurdistan

Postal code

66177-15175

Phone

+98 87 3366 4600

Email

d.vatani@uok.ac.ir

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

Not applicable

Title and more details about the data/document

The data can be published after ensuring that subjects are not identified.

When the data will become available and for how long

Start accessing immediately after results are published.

To whom data/document is available

Anyone who requested can access the data.

Under which criteria data/document could be used

By examining the request by the researcher it will be possible to access the data.

From where data/document is obtainable

Researcher, Email: d.vatani@uok.ac.ir

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

The request should be sent to the following email address: Email: d.vatani@uok.ac.ir

Comments