

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 Jul 2026

The effect of 10 weeks of weightlifting training with added respiratory dead space volume on angiogenic factors in young weightlifters

Protocol summary

Study aim

Determining the effect of 10 weeks of weightlifting training with added respiratory dead space volume on angiogenic factors in young weightlifters

Design

Clinical trial with 2 parallel, non-blind, randomized groups of 20 patients

Settings and conduct

The subjects performed their sports activities for 10 weeks in the weightlifting hall under the supervision of experienced performers and trainers, which includes a program of warming up, weightlifting movements and cooling down in the assembly for a maximum of one hour and fifty minutes. Exercises are done three to five days a week. The mask and tube exercise group should use their mask and tube throughout the practice of the main movements, except for warm-up and cooling, to increase the dead breathing space.

Participants/Inclusion and exclusion criteria

Beginner weightlifter with at least six months of experience in weightlifting exercises; Age range 18 to 25 years; Body mass index between 19 and 25; Body fat percentage 12-15%; No history of chronic disease (diabetes, hypertension, chronic lung disease, etc.); No history of smoking for at least the last six months; Without musculoskeletal injury or complication; No use of medications and specific weight loss programs and diets; No use of energizers and anabolic steroids in the last three months

Intervention groups

1- Special weightlifting training (snatch- clean and jerk) with the use of oxygen mask during the training on which the ventilator tube with a diameter of 2.5 cm and a length of 204 cm is closed to provide 1000 ml of dead space. 2- Special weightlifting training (snatch- clean and jerk) without using a mask and tube

Main outcome variables

the level of angiogenic factors; blood lactate level; Blood carbon dioxide partial pressure

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220626055276N1**

Registration date: **2022-09-27, 1401/07/05**

Registration timing: **prospective**

Last update: **2022-09-27, 1401/07/05**

Update count: **0**

Registration date

2022-09-27, 1401/07/05

Registrant information

Name

Ebrahim Banitalebi

Name of organization / entity

University of Shahrekord

Country

Iran (Islamic Republic of)

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+98 38 3242 0537

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-10-22, 1401/07/30

Expected recruitment end date

2023-03-20, 1401/12/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of 10 weeks of weightlifting training with added respiratory dead space volume on angiogenic factors in young weightlifters

Public title

The Effect of Weightlifting Training with Adding Respiratory Dead Space on angiogenesis

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria:

Weightlifter boys 18 to 25 years old Have a body mass index between 19 to 25 with a body fat percentage of 12 to 15% Have a history of weightlifting training for at least six months

Exclusion criteria:

History of chronic disease (no diabetes, Blood pressure, chronic lung disease, etc.) History of smoking for at least the last six months Musculoskeletal injury or complication Use of medications and weight loss program or special diet The use of energizers or anabolic steroids even in therapeutic discussions before starting

Age

From **18 years** old to **25 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

First, a list of subjects is prepared according to the inclusion criteria and available sampling, after determining the sample size with G power software, 20 people are selected by simple random method and random digits table. First, each person in the list is given a two-digit code, and then randomly, blindfolded and using a finger, we start from a point in the table of random numbers in the direction of the row or column, and we choose a number that is actually the code of a person from the list. which is chosen as a sample and we place them equally in two groups so that the first code is placed in the first group and the second code is placed in the second group and we continue in the same way until reaching the desired sample size.

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 committees of Shahrekord University

Street address

Faculty of Literature and Human Sciences,
Shahrekord University, Rahbar Boulevard

City

Shahrekord

Province

Chahar-Mahal-va-Bakhtiari

Postal code

۸۸۱۸۶۳۴۱۴۱

Approval date

2022-05-31, 1401/03/10

Ethics committee reference number

IR.SKU.REC.1401.016

Health conditions studied

1

Description of health condition studied

Angiogenesis in male weightlifters

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Serum concentration of vascular endothelial growth factor

Timepoint

Before and immediately after the first session - before and immediately after the last session - 48 hours after the last session

Method of measurement

It is done by taking blood and measuring with diagnostic kits. Its unit is pg/ml

2

Description

Serum concentration of Hypoxia-inducible factor

Timepoint

Before and immediately after the first session - before and immediately after the last session - 48 hours after the last session

Method of measurement

It is done by taking blood and measuring with diagnostic kits. Its unit is pg/ml

Secondary outcomes

1

Description

Serum concentration of nitric oxide factor

Timepoint

Before and immediately after the first session - before and immediately after the last session - 48 hours after the last session

Method of measurement

It is done by taking blood and measuring with diagnostic kits. Its unit is $\mu\text{mol/l}$

2

Description

Serum lactate concentration

Timepoint

Before and immediately after the first session - before and immediately after the last session - 48 hours after the last session

Method of measurement

It is done by taking blood and measuring with diagnostic kits. Its unit is mg/dl

3

Description

Blood carbon dioxide partial pressure

Timepoint

Before and immediately after the first session - before and immediately after the last session - 48 hours after the last session

Method of measurement

It is done by drawing blood with a sterile syringe containing heparin anticoagulant and using an Arterial blood gas measuring device. Its unit is mm[Hg].

4

Description

Blood bicarbonate level

Timepoint

Before and immediately after the first session - before and immediately after the last session - 48 hours after the last session

Method of measurement

It is done by drawing blood with a sterile syringe containing heparin anticoagulant and using an Arterial blood gas measuring device. Its unit is meq/L.

Intervention groups

1

Description

Intervention group: Intervention group: exercise group with mask and tube. Using an oxygen mask with a ventilator tube 2.5 cm in diameter and 204 cm long to provide 1000 ml of dead space is used by this group during weightlifting exercises.

Category

Other

2

Description

Control group: exercise group without mask and tube. This group will do their weightlifting exercises without using masks and tubes.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Shahrekord University

Full name of responsible person

Ebrahim Banitalebi

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Faculty of Sport Sciences, Shahrekord University, Rahbar Blvd., Shahrekord

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Research and Technology Vice-Chancellor of Shahrekord University

Full name of responsible person

Ahmad Keyvani

Street address

Research and Technology Vice-Chancellor, Central Library Building, Shahrekord University, Rahbar Blvd., Shahrekord

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Phone

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Email

research@sku.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Research and Technology Vice-Chancellor of Shahrekord 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
The University of Shahrekord
Full name of responsible person
Samira Nasiri
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Latest degree
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Person responsible for updating data

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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

Each person's data alone is useless.

Study Protocol

Undecided - It is not yet known if there will be 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

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

Results for the main outcomes will be shared.

When the data will become available and for how long

6 months after printing the results

To whom data/document is available

Academic researchers

Under which criteria data/document could be used

After access, people only have the right to use the study

protocol

From where data/document is obtainable

Samira Nasiri will respond via email.

Sa_nasiri@ymail.com

What processes are involved for a request to access

data/document

The request will be answered after receiving the request and stating the reasons for needing the data within a maximum period of one month

Comments