

Clinical Trial Protocol

Iranian Registry of Clinical Trials

26 Jul 2026

Investigating the effect of 8 weeks of resistance training with blood flow restriction on muscle endurance, anaerobic and aerobic power and muscle damage indicators in Basiji students.

Protocol summary

Study aim

Determining the effect of 8 weeks of resistance training with blood flow restriction on muscular endurance, anaerobic and aerobic power, and muscle damage indices in Basiji students

Design

It is a basic applied research and in terms of data collection method, it is considered a type of intervention research with a control group. 34 subjects and random division.

Settings and conduct

Zanjan University Gymnasium and Zanjan University Physiology Laboratory. Measurement of variables, then implementation of the protocol for 8 weeks, 2 sessions of front thigh and calf training per week, and measurement of variables again.

Participants/Inclusion and exclusion criteria

The statistical population of this study is all active Basij students at Zanjan University. The research subjects are Basij students at Zanjan University who are studying. The subjects should be free from any cardiovascular, neuromuscular, and skeletal disorders and should not use supplements, anti-inflammatory drugs, and anabolic steroids. The subjects should be physically active.

Intervention groups

Intervention group: The intervention group will perform isometric exercises with blood flow restriction at an intensity of 30% MVC for two months. Control group: The control group will perform isometric exercises without blood flow restriction at an intensity of 30% MVC for two months.

Main outcome variables

Quadriceps muscular endurance Anaerobic power
Aerobic power Indicators of muscle damage including creatine kinase and lactate dehydrogenase

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20250629066293N1**

Registration date: **2025-07-14, 1404/04/23**

Registration timing: **prospective**

Last update: **2025-07-14, 1404/04/23**

Update count: **0**

Registration date

2025-07-14, 1404/04/23

Registrant information

Name

Hamidreza Salmanloo

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 24 3341 2675

Email address

hamidreza.salmanloo@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-07-23, 1404/05/01

Expected recruitment end date

2025-07-29, 1404/05/07

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Investigating the effect of 8 weeks of resistance training with blood flow restriction on muscle endurance, anaerobic and aerobic power and muscle damage indicators in Basiji students.

Public title

Investigating the effect of 8 weeks of resistance training with blood flow restriction on muscle endurance, anaerobic and aerobic power and muscle damage indicators in Basiji students.

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

The research subjects are Basiji students studying at Zanjan University. Subjects should be free of any cardiovascular, neuromuscular, and skeletal disorders and should not use supplements, anti-inflammatory drugs, or anabolic steroids. Subjects should be physically active.

Exclusion criteria:

Age

From **18 years** old to **24 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **34**

Randomization (investigator's opinion)

Randomized

Randomization description

34 students will be voluntarily selected and randomly divided into 2 groups (control and intervention) of 17 students using a random block design of 4.

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

Baqiyatullah Al-Azam (PBUH) Educational and Medical Center (Research Ethics Committee)

Street address

Department of Exercise Physiology, Health Research Institute, Baqiyatallah University of Medical Sciences,

Sheikh Bahai South Street, Mulla Sadra Street, Vanak Square, Tehran, Iran

City

Tehran

Province

Tehran

Postal code

1435916471

Approval date

2025-05-26, 1404/03/05

Ethics committee reference number

IR.BMSU.BAQ.REC.1404.069

Health conditions studied

1

Description of health condition studied

Muscle damage indicators including creatine kinase and lactate dehydrogenase

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Lower body muscular endurance

Timepoint

At the beginning of the study and then for the second time 8 weeks later

Method of measurement

Using the front thigh machine at an intensity of 70% 1RM

2

Description

Anaerobic power

Timepoint

At the beginning of the study and then for the second time 8 weeks later

Method of measurement

30-second Ergojump test

3

Description

aerobic power

Timepoint

At the beginning of the study and then for the second time 8 weeks later

Method of measurement

Through the Cooper test

4

Description

Creatine kinase

Timepoint

At the beginning of the study and then for the second time 8 weeks later

Method of measurement

Through blood sampling and with the Pars Azmoun measurement kit

5

Description

Lactate dehydrogenase

Timepoint

At the beginning of the study and then for the second time 8 weeks later

Method of measurement

Through blood sampling and with the Pars Azmoun measurement kit

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Front thigh and calf exercise with blood flow restriction using a cuff

Category

Rehabilitation

2

Description

Control group: Front thigh and calf training without restricting blood flow using a cuff

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

University of Zanjan

Full name of responsible person

Hamidreza Salmanloo

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Exercise Physiology Laboratory Building, University Boulevard, University of Zanjan, Zanjan, Iran

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Bagheiat-allah University of Medical Sciences

Full name of responsible person

Behzad Bazgir

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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

Bagheiat-allah University of Medical Sciences

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

Bagheiat-allah University of Medical Sciences

Full name of responsible person

Hamidreza Salmanloo

Position

Student

Latest degree

Master

Other areas of specialty/work

Physiology

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be 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

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available