Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The Effect of Resistance Exercise in Different Physical Position on Heart Rate Variability and Post-Exercise Hypotension

Protocol summary

Study aim

Hypertension is one of the main causes of cardiovascular disorders. Physical activity has a decreasing effect on blood pressure. Therefore, the purpose of this study is to investigate studies and studies on the effect and effect of various types of physical activity on modulation or reduction of systolic and diastolic blood pressure in men and women with hypertension.

Design

Subjects will perform each movement in 3 sets and 10 repetitions at 5, 10 and 15RM 48 hours apart. Measurements are made to measure the changes in heart rate and baseline blood pressure before exercise. At the beginning and end of each set, perceived exertion, blood pressure, and heart rate variability throughout the process will be measured up to 30 minutes after the exercise.

Settings and conduct

Faculty of Physical Education and Sport Sciences, University of Guilan

Participants/Inclusion and exclusion criteria

Lack of smoking and alcoholic beverages. Having full physical condition. Not having skeletal muscle damage. Non-use of heart rate stimulants and sports supplements. Have at least one year of regular resistance training.

Intervention groups

A total of 10 subjects will be randomly divided into 5 groups and will participate in 5 types of squat resistance exercises, leg press, shoulder press, chest press, and biceps curl. The total test time will be 1 hour, with the resistance exercise process taking 10 minutes and the remaining time being purely blood pressure measurements and heart rate variability depending on the type of resistance exercise.

Main outcome variables

Changes in heart rate and blood pressure after exercise

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190720044283N1**
Registration date: **2019-08-22, 1398/05/31**
Registration timing: **retrospective**

Last update: **2019-08-22, 1398/05/31**
Update count: **0**

Registration date

2019-08-22, 1398/05/31

Registrant information

Name

Siamand Abdollahpour

Name of organization / entity

Guilan university of medical sciences

Country

Iran (Islamic Republic of)

Phone

+98 13 3369 0274

Email address

siamand.abp1@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-07-23, 1398/05/01

Expected recruitment end date

2019-08-09, 1398/05/18

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
The Effect of Resistance Exercise in Different Physical Position on Heart Rate Variability and Post-Exercise Hypotension

Public title
The Effect of Resistance Exercise in Different Physical Position on Heart Rate Variability and Post-Exercise Hypotension in Male Athletes

Purpose
Basic scienece

Inclusion/Exclusion criteria

Inclusion criteria:
Cardiovascular health Muscle skeletal health Have physical activity at least 3 days a week in a recent year

Exclusion criteria:
Having structural abnormalities Tobacco and alcohol consumption Taking heart rate suppressants or beta blockers Medication or exercise supplements consumption in the past 6 months

Age
From **25 years** old to **35 years** old

Gender
Male

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **10**

Randomization (investigator's opinion)
N/A

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Guilan University of Medical Sciences

Street address
District 5, Rasht, Gilan Province

City
Rasht

Province
Guilan

Postal code
4199843653

Approval date
2019-07-17, 1398/04/26

Ethics committee reference number
IR.GUMS.REC.1398.155

Health conditions studied

1

Description of health condition studied
blood pressure

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Heart rate variability

Timepoint
Heart rate variability will be measured at baseline and during movement throughout the process and up to 30 minutes after exercise.

Method of measurement
Polar H10

2

Description
Hypotension

Timepoint
Blood pressure will be measured at the beginning and end of each set and up to 30 minutes after exercise.

Method of measurement
Blood Pressure Monitor

Secondary outcomes

1

Description
blood pressure

Timepoint
Blood pressure will be measured at the beginning and at the end of each set and during the execution of the movement throughout the processing time and up to 30 minutes after activity.

Method of measurement
Blood Pressure Monitor

Intervention groups

1

Description
Intervention group: Resistance activity group in Squat

Category
N/A

2

Description
Intervention group: Resistance activity group in Leg Press
Category
N/A

3

Description
Intervention group: Resistance activity group in Shoulder press
Category
N/A

4

Description
Intervention group: Resistance activity group in Bench press
Category
N/A

5

Description
Intervention group: Resistance activity group in Biceps curl
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
Guilan university
Full name of responsible person
Siamand Abdolahpour
Street address
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Siamand.abp1@gmail.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
University of Guilan
Full name of responsible person
Siamand Abdolahpour
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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
University of Guilan
Proportion provided by this source
1
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
Persons

Person responsible for general inquiries

Contact
Name of organization / entity
University of Guilan
Full name of responsible person
Siamand Abdolahpour
Position
Student
Latest degree
Bachelor
Other areas of specialty/work
Physical Education and Sport Science
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Person responsible for scientific inquiries

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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
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
More info

When the data will become available and for how long
Oct. 2019

To whom data/document is available
university of guilan

Under which criteria data/document could be used
Most information will be available

From where data/document is obtainable
Email the responsible person

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

Comments