Clinical Trial Protocol
Iranian Registry of Clinical Trials

02 Jul 2026

Effects of linear and daily undulating periodized resistance training on serum myokines levels, fluid balance, body composition and functional capacity in untrained women

Protocol summary

Study aim
The aim of this study was to compare the effects of linear (LP) and nonlinear (NLP) RT on serum myokines levels, fluid balance and functional capacity in overweight/obese women.

Design
The trained groups performed 3 weekly sessions for 12 weeks of resistance training with different of periodization. While the control group will continue their inactive lifestyle.

Settings and conduct
This is a blind study conducted at the University of Medical Sciences.

Participants/Inclusion and exclusion criteria
The subjects in the present study are non-athletic women with overweight / obesity, age range of 28-46, non-postmenopausal, non-disease, non-smoker, without a specific diet.

Intervention groups
In this study, we have two training groups and one control group.

Main outcome variables
Serum levels of interleukin-7, interleukin-15, insulin-like growth factor, insulin

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20121204011670N3**
Registration date: **2018-03-12, 1396/12/21**
Registration timing: **retrospective**

Last update: **2018-03-12, 1396/12/21**
Update count: **0**

Registration date
2018-03-12, 1396/12/21

Registrant information

Name
Mahmoud Nikseresht

Name of organization / entity
Islamic Azad University of Ilam

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2017-05-22, 1396/03/01

Expected recruitment end date
2017-09-23, 1396/07/01

Actual recruitment start date
2017-07-23, 1396/05/01

Actual recruitment end date
2017-11-22, 1396/09/01

Trial completion date
empty

Scientific title
Effects of linear and daily undulating periodized resistance training on serum myokines levels, fluid balance, body composition and functional capacity in untrained women

Public title
myokines and resistance training

Purpose
Other

Inclusion/Exclusion criteria

Inclusion criteria:
Untrained women maximal oxygen uptake (VO2max, 31–42 ml/kg/min) age (28–46 years) body mass index (26–32 kg/m2)
Exclusion criteria:
trained subjects having any kind of disease the consumption of alcohol the consumption of cigarettes having eating unusual

Age
From **28 years** old to **46 years** old

Gender
Female

Phase
3

Groups that have been masked

- Participant
- Outcome assessor
- Data analyser

Sample size
Target sample size: **45**
Actual sample size reached: **30**

Randomization (investigator's opinion)
Randomized

Randomization description
Simple random method

Blinding (investigator's opinion)
Single blinded

Blinding description
Training groups in the study are two different methods without the knowledge of other groups

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of Ilam University of Medical Sciences

Street address
Postcode: 6939177143, Department of Medicine, Ilam University of Medical Sciences, Blvd. Pajohesh, Ilam, Iran

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Approval date
2018-02-13, 1396/11/24

Ethics committee reference number
ir.medilam, 1396.127

Health conditions studied

1

Description of health condition studied
untrained women

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Serum levels of interleukin-7

Timepoint
before and after 12 weeks of training

Method of measurement
enzyme-linked immunosorbent assay

2

Description
Serum levels of Interleukin-15

Timepoint
before and after 12 weeks of training

Method of measurement
enzyme linked immunosorbent assay (ELISA)

3

Description
insulin like growth factor-1

Timepoint
before and after 12 weeks of training

Method of measurement
enzyme linked immunosorbent assay (ELISA)

4

Description
body composition

Timepoint
before and after 12 weeks of training

Method of measurement
Bio-impedance

Secondary outcomes

1

Description
fluid balance

Timepoint
before and after 12 weeks of training

Method of measurement
Bio-Impedance method

2

Description
aerobic capacity
Timepoint
before and after 12 weeks of training
Method of measurement
One-step test on the treadmill

Intervention groups

1

Description
Intervention group: Non-linear resistance training (12 weeks, three times a week for about an hour each session)
Category
Rehabilitation

2

Description
Intervention group: linear resistance training (12 weeks, three times a week for about an hour each session)
Category
Rehabilitation

3

Description
Control group: This group will maintain their sedentary lifestyle during the study period
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
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Sponsors / Funding sources

1

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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
Ilam 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
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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
Not applicable
Data Dictionary
Not applicable
Title and more details about the data/document
The results of this study will be published after statistical analysis
When the data will become available and for how long
One year after data collection
To whom data/document is available
Researchers working in academic and scientific institutions
Under which criteria data/document could be used
There are no special conditions
From where data/document is obtainable
Corresponding Author
What processes are involved for a request to access data/document
About one month after request
Comments