

# 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

2018-03-12, 1396/12/21

#### 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

#### Registrant information

##### Name

Mahmoud Nikseresht

##### Name of organization / entity

Islamic Azad University of Ilam

##### Country

Iran (Islamic Republic of)

##### Phone

+98 918 343 3019

##### Email address

nikseresht@ilam-iau.ac.ir

#### 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 (VO<sub>2</sub>max, 31–42 ml/kg/min) age (28–46 years) body mass index (26–32 kg/m<sup>2</sup>)

**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

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

**City**

Ilam

**Province**

Ilam

**Postal code**

6939177143

**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**

Islamic Azad University of Ilam Branch

#### **Full name of responsible person**

Nikseresht Mahmoud

#### **Street address**

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#### **Postal code**

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nikseresht@ilam-iau.ac.ir

## **Sponsors / Funding sources**

### 1

### **Sponsor**

#### **Name of organization / entity**

Ilam University of Medical Sciences

#### **Full name of responsible person**

Hafezi-Ahmadi Mohammadreza

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#### **Email**

reza.ahmadi56@yahoo.com

### **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**

Islamic Azad University

#### **Full name of responsible person**

Nikseresht Mahmoud

#### **Position**

Assistant Prof.

#### **Latest degree**

Ph.D.

#### **Other areas of specialty/work**

Physiology

#### **Street address**

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

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**Full name of responsible person**

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

Islamic Azad University

**Full name of responsible person**

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**Position**

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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**