

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

11 Jul 2026

### Comparison of Immune and Hormone Changes in Response to Endurance, Resistance and Concurrent Exercise

#### Protocol summary

2014-08-02, 1393/05/11

#### Summary

The aim of this study is to compare the acute effects of endurance exercise (EE), resistance exercise (RE), and concurrent exercise (CE) on immune and hormone changes in active men. One hundred thirty healthy young men (no history of special diseases, nonalcoholic and nonsmokers) as a research population, will perform two months regular physical activity (at least 2 days a week). So, as a active men, twenty one subject voluntarily will participate as a sample of this study and randomly will assign into three groups: endurance exercise (EE) (n=7), resistance exercise (RE) (n=7), and concurrent exercise (CE) (n=7). Four days before exercise session, anthropometric and body composition factors will measure and one-repetition maximum of RE and CE groups will calculate with Brzycki formula. Subjects will prohibit from any exercise activity three days before exercise session and will fast at least 12 hours before first sampling until last sampling (not eat any food). Special exercise protocol will perform consisted of 45 min for each group. Blood samples (4 cc) will obtain from antecubital vein before exercises, immediate and 1 hour post-exercises and will pour into free EDTA tubes. Fasting Blood Sugar will determine by the enzymatic method and IL-17, IL-10, cortisol and testosterone will measure by ELISA method.

#### Registrant information

##### Name

Mostafa Baranchi

##### Name of organization / entity

Tarbiat Modares University

##### Country

Iran (Islamic Republic of)

##### Phone

+98 21 6659 1514

##### Email address

m.baranchi@modares.ac.ir

#### Recruitment status

##### Recruitment complete

#### Funding source

Tarbiat Modares University

#### Expected recruitment start date

2013-08-23, 1392/06/01

#### Expected recruitment end date

2014-06-22, 1393/04/01

#### Actual recruitment start date

empty

#### Actual recruitment end date

empty

#### Trial completion date

empty

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT2012100511011N1**

Registration date: **2014-08-02, 1393/05/11**

Registration timing: **retrospective**

Last update:

Update count: **0**

##### Registration date

#### Scientific title

Comparison of Immune and Hormone Changes in Response to Endurance, Resistance and Concurrent Exercise

#### Public title

Comparison of Immune and Hormone Changes in Response to Endurance, Resistance and Concurrent Exercise

#### Purpose

Health service research

#### Inclusion/Exclusion criteria

Inclusion criteria: Healthy young men (No history of special diseases, Nonalcoholic and Nonsmokers); At least two months regular physical activity, at least 2 days a week; Normal BMI and body fat percentage; Not consuming special drugs or any other nutritional supplements  
Exclusion criteria: Less than 2 month exercise training period

#### 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: **130**

#### Randomization (investigator's opinion)

Randomized

#### Randomization description

#### Blinding (investigator's opinion)

Single blinded

#### Blinding description

#### Placebo

Not used

#### Assignment

Parallel

#### Other design features

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Tarbiat Modares University

##### Street address

Department of Physical Education and Sports Sciences, Faculty of Humanities, Tarbiat Modares University, Jalal Ale Ahmad Highway, Tehran, Iran.  
P.O.Box: 14115-111.

##### City

Tehran

##### Postal code

14115-111

#### Approval date

2014-07-12, 1393/04/21

#### Ethics committee reference number

52/3063,

## Health conditions studied

### 1

#### Description of health condition studied

Lifestyle-related condition

#### ICD-10 code

Y98

#### ICD-10 code description

Lifestyle-related condition

## Primary outcomes

### 1

#### Description

interleukin-17

#### Timepoint

Pre, immediate and 1 h post-exercises

#### Method of measurement

ELISA

### 2

#### Description

interleukin-10

#### Timepoint

Pre, immediate and 1 h post-exercises

#### Method of measurement

ELISA

### 3

#### Description

Testosterone

#### Timepoint

Pre, immediate and 1 h post-exercises

#### Method of measurement

ELISA

### 4

#### Description

Cortisol

#### Timepoint

Pre, immediate and 1 h post-exercises

#### Method of measurement

ELISA

## Secondary outcomes

### 1

#### Description

Fasting blood sugar

#### Timepoint

Pre, immediate and 1 h post-exercises

#### Method of measurement

Enzymatic

### 2

#### Description

Body fat percentage

#### Timepoint

Pre session

#### Method of measurement

Bioelectrical impedance

## Intervention groups

### 1

#### Description

Endurance exercise

#### Category

Lifestyle

### 2

#### Description

Resistance exercise

#### Category

Lifestyle

### 3

#### Description

Concurrent exercise

#### Category

Lifestyle

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Payame Noor University of Hamedan

##### Full name of responsible person

Mostafa Baranchi

##### Street address

##### City

Hamedan

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Tarbiat Modares University

##### Full name of responsible person

Dr. Hamid Agha-alinejad

##### Street address

Department of Physical Education and Sports Sciences, Faculty of Humanities, Tarbiat Modares University, Jalal Ale Ahmad Highway, Tehran, Iran.

##### City

Tehran

#### Grant name

#### Grant code / Reference number

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

Yes

#### Title of funding source

Tarbiat Modares University

#### Proportion provided by this source

100

#### Public or private sector

empty

#### Domestic or foreign origin

empty

#### Category of foreign source of funding

empty

#### Country of origin

#### Type of organization providing the funding

empty

## Person responsible for general inquiries

#### Contact

##### Name of organization / entity

Tarbiat Modares University

##### Full name of responsible person

Mostafa Baranchi

##### Position

MSc

##### Other areas of specialty/work

##### Street address

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## Person responsible for scientific inquiries

#### Contact

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**Web page address**

**Sharing plan**

**Deidentified Individual Participant Data Set (IPD)**

*empty*

**Study Protocol**

*empty*

**Statistical Analysis Plan**

*empty*

**Informed Consent Form**

*empty*

**Clinical Study Report**

*empty*

**Analytic Code**

*empty*

**Data Dictionary**

*empty*