

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

04 Jul 2026

### Effect of 10-week progressive resistance training and ginger herbal Medicine intake on blood lipids Profiles, oxidative and inflammatory markers in obese men

#### Protocol summary

##### Summary

Aim: This study will conduct to determine the effect of 10-week progressive resistance training and ginger supplementation on physical fitness, body composition, lipid profiles, oxidative stress and inflammatory markers in obese men. Methods: Thirty-two obese male (aged 18–32 years, BMI  $\geq$  30 Kg/m<sup>2</sup>) in a randomized double-blind design, will allocate equally into four homogeneous groups: PL (without training plus Dextrose intake); RTPL (training plus Dextrose); GI (without training plus Ginger intake), and RTGI (training plus ginger intake). The subjects will intake 1 g/d ginger (GI and RTGI) or Dextrose (PL and RTPL) during resistance training protocol (3 sessions/week; 8 exercises/session) for 10 weeks. In both groups, physical fitness (maximal isometric strength, explosive power, and Flexibility of lower limb), body composition (BMI, Fat%, FFM, WHR, WC), blood lipid profile, oxidative stress (malondialdehyde and antioxidant capacity: MDA & TAC), and inflammatory indicators (Peripheral blood leukocyte count; C-reactive protein: CRP; Interleukin-6: IL6; Interleukin-10: IL-10; Adiponectin; and homocysteine: tHcy) along with blood Testosterone and Cortisol concentration will determine 48 hours before and after supplementation and training protocol.

#### General information

##### Acronym

GingerTra2011

##### IRCT registration information

IRCT registration number: **IRCT201008304663N1**

Registration date: **2012-08-05, 1391/05/15**

Registration timing: **retrospective**

Last update:

Update count: **0**

##### Registration date

2012-08-05, 1391/05/15

##### Registrant information

###### Name

Afshar Jafari

###### Name of organization / entity

University of Tabriz

###### Country

Iran (Islamic Republic of)

###### Phone

+98 41 1339 3251

###### Email address

ajafari@tabrizu.ac.ir

##### Recruitment status

###### Recruitment complete

##### Funding source

The Research will funded by Mahabad Branch Islamic Azad University.

##### Expected recruitment start date

2009-03-21, 1388/01/01

##### Expected recruitment end date

2010-09-23, 1389/07/01

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Effect of 10-week progressive resistance training and ginger herbal Medicine intake on blood lipids Profiles, oxidative and inflammatory markers in obese men

##### Public title

Effect of training and ginger on obesity

##### Purpose

Basic science

### **Inclusion/Exclusion criteria**

Inclusion criteria: Males; non-athletes; Obese; aged 18-35 years; BMI >30 Kg/m<sup>2</sup>; aerobic power < 45 ml/kg/min; without any anti-inflammatory and medical drugs such as caffeine >100 mg/day (during 6 months prior to the study). Exclusion criteria: Smoking; chronic diseases; injuries; and uncontrolled intake of oxidative supplements; uncontrolled intake of anti-inflammatory drugs and stimulants (during the period).

### **Age**

From **18 years** old to **32 years** old

### **Gender**

Male

### **Phase**

N/A

### **Groups that have been masked**

*No information*

### **Sample size**

Target sample size: **32**

### **Randomization (investigator's opinion)**

Randomized

### **Randomization description**

### **Blinding (investigator's opinion)**

Double blinded

### **Blinding description**

### **Placebo**

Used

### **Assignment**

Parallel

### **Other design features**

## **Secondary Ids**

empty

## **Ethics committees**

### **1**

#### **Ethics committee**

##### **Name of ethics committee**

Tabriz University of Medical Sciences

##### **Street address**

Golgasht St. Daneshgah St. Tabriz, East Azerbaijan, Iran.

##### **City**

Tabriz

##### **Postal code**

##### **Approval date**

2010-08-30, 1389/06/08

##### **Ethics committee reference number**

8928

## **Health conditions studied**

### **1**

#### **Description of health condition studied**

Supplementation and Training combination for obesity treatment

### **ICD-10 code**

E66

### **ICD-10 code description**

Obesity

## **Primary outcomes**

### **1**

#### **Description**

Serum Malondialdehyde level

#### **Timepoint**

48 hours before and after a 10-week period.

#### **Method of measurement**

It will determine by thiobarbituric acid reactive substance (TBARS) and spectrophotometer.

### **2**

#### **Description**

Serum Total antioxidant capacity

#### **Timepoint**

48 hours before and after a 10-week period.

#### **Method of measurement**

It will determine by FRAP method.

### **3**

#### **Description**

Serum cortisol level

#### **Timepoint**

48 hours before and after a 10-week period.

#### **Method of measurement**

It will determine by radioimmunoassay.

### **4**

#### **Description**

Peripheral blood lipids profile

#### **Timepoint**

48 hours before and after a 10-week period.

#### **Method of measurement**

The lipid profile will determine by serum levels of total cholesterol (TC), high-density cholesterol (HDL-C), low-density cholesterol (LDL-C) and triglycerides (TG) using the enzymatic method.

### **5**

#### **Description**

Serum Adiponectin level

#### **Timepoint**

48 hours before and after a 10-week period.

#### **Method of measurement**

It will determine by ELISA methods with commercial kits.

### **6**

#### **Description**

Serum tumor necrosis factor alpha (TNF-alpha) level

#### **Timepoint**

48 hours before and after a 10-week period.

#### **Method of measurement**

It will determine by ELISA methods with commercial kits.

## 7

### **Description**

Serum interleukin-6 (IL-6) level

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by ELISA methods with commercial kits.

## 8

### **Description**

Serum C-reactive protein level

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by immunoturbidometric assay.

## 9

### **Description**

Serum interleukin-10 (IL-10) level

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by ELISA methods with commercial kits.

## 10

### **Description**

Fasting serum total homocysteine (tHcy)

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determined by enzymatic commercial kits.

## 11

### **Description**

Serum testosterone level

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by radioimmunoassay.

## 12

### **Description**

Peripheral blood leukocyte count

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by automatic analyzer.

## **Secondary outcomes**

## 1

### **Description**

Serum Growth Hormone Level

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by radioimmunoassay.

## 2

### **Description**

Complete blood count (CBC)

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by automatic analyzer.

## 3

### **Description**

Fasting Blood Sugar (FBS)

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by the enzymatic method.

## 4

### **Description**

Insulin resistance

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by HOMA formula.

## 5

### **Description**

Body fat%

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine with Skin-fold test (caliper and ACSM's Formula).

## 6

### **Description**

Hand grip strength

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by Dynamometry.

## 7

### **Description**

Lower limb maximal isometric strength

### **Timepoint**

48 hours before and after a 10-week period.

### **Method of measurement**

It will determine by Dynamometry.

## 8

### **Description**

One Repetition Maximum in eight resistance exercises

### **Timepoint**

48 hours before and after a 10-week period.

**Method of measurement**

It will determine by the Brzycki prediction equation.

**9**

**Description**

Lower limb flexibility

**Timepoint**

48 hours before and after a 10-week period.

**Method of measurement**

Sit and reach test (wells SRT)

**10**

**Description**

Lower limb explosive power

**Timepoint**

48 hours before and after a 10-week period.

**Method of measurement**

It will determine by Sargent vertical jump test.

**11**

**Description**

Waist circumference (WC)

**Timepoint**

48 hours before and after a 10-week period.

**Method of measurement**

It will determine by flexible tape.

**12**

**Description**

Waist-Hip Ratio (WHR)

**Timepoint**

48 hours before and after a 10-week period.

**Method of measurement**

It will Measure by a flexible tape and the ratio of waist circumference to the hip circumference.

**13**

**Description**

Serum Leptin level

**Timepoint**

48 hours before and after a 10-week period.

**Method of measurement**

It will determine by ELISA methods with commercial kits.

**14**

**Description**

Serum ghrelin levels

**Timepoint**

48 hours before and after a 10-week period.

**Method of measurement**

It will determine by ELISA methods with commercial kits.

**Intervention groups**

**1**

**Description**

The subjects in RTPL group (training plus Plecbo) will intake 1 g/d Dextrose during 10-week resistance training (3 sessions/week; 8 exercises/session, with 50-85% 1RM).

**Category**

Other

**2**

**Description**

The subjects in GI group (Supplement without training) will intake 1 g/d Ginger for 10 weeks.

**Category**

Treatment - Drugs

**3**

**Description**

The subjects in RTGI group (training plus supplement) will intake 1 g/d ginger during 10-week resistance training (3 sessions/week; 8 exercises/session, with 50-85% 1RM).

**Category**

Other

**4**

**Description**

The subjects in PL group (Placebo without training) will intake 1 g/d Dextrose for 10 weeks.

**Category**

Placebo

**Recruitment centers**

**1**

**Recruitment center**

**Name of recruitment center**

Islamic Azad University (Mahabad Branch)

**Full name of responsible person**

Dr Sirvan Atashak

**Street address**

Department of Physical Education and Sports Sciences, Mahabad Branch, Islamic Azad University, Kuy-e-Daneshgah, Mahabad, West Azerbaijan, Iran.

**City**

Mahabad

**Sponsors / Funding sources**

**1**

**Sponsor**

**Name of organization / entity**

Islamic Azad University (Mahabad Branch)

**Full name of responsible person**

Dr Mahmod Poor Yousef

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Mahabad Branch Islamic Azad University, Kuy-e-

Daneshgah, Mahabad, West Azerbaijan, Iran.

**City**

Mahabad

**Grant name**

**Grant code / Reference number**

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

Yes

**Title of funding source**

Islamic Azad University (Mahabad Branch)

**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**

**Person responsible for scientific inquiries**

**Contact**

**Name of organization / entity**

University of Tabriz

**Full name of responsible person**

Dr Afshar Jafari

**Position**

PhD/Associate Professor of Molecular Exercise

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**Person responsible for updating data**

**Contact**

**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*