

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Evaluation of the effect of oral consumption of N-acetyl Cysteine in reducing the injuries caused by a single bout of exhaustive exercise in untrained young subjects

#### Protocol summary

##### Summary

The aim of the current study was to evaluate the effect of N-acetyl cysteine (NAC) supplementation on markers of oxidative stress and inflammatory response during a single bout of exhaustive exercise. Inclusion criteria were, participants aged between 21 and 25, either sex and exclusion criteria were, subjects who were consuming energetic drugs, smokers and those having any type of regular sport activity. In a randomized placebo-controlled double-blind clinical trial, thirty healthy, untrained young university students from both sex (males and females) with the age between 21 and 25 were selected and divided into 2 groups, including case (600 mg of effervescent tablets of N-acetyl Cysteine ) and the control group( placebo Neutral cellulose ) .Starting 24 hours before the supplementation ,blood samples were taken from all the subjects. The next blood samples were collected just before the exercise started, immediately after the exhaustive exercise (on flat treadmill running) and after one hour at rest. Malondialdehyde (MDA), total antioxidative capacity (TAC), CRP, BMI and Vo2 max were determined. We hypothesize that consumption of oral N-acetyl Cysteine before an exhaustive exercise reduces the parameters of oxidation stress and inflammation.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT201208238129N2**

Registration date: **2013-05-10, 1392/02/20**

Registration timing: **prospective**

Last update:

Update count: **0**

##### Registration date

2013-05-10, 1392/02/20

##### Registrant information

###### Name

Ali Movahed

###### Name of organization / entity

###### Country

Iran (Islamic Republic of)

###### Phone

+98 77 3332 4044

###### Email address

a.movahed@bpums.ac.ir

##### Recruitment status

###### Recruitment complete

##### Funding source

provided by the main researcher, with the help of deputy of research, Bushehr University of Medical Sciences

##### Expected recruitment start date

2013-05-22, 1392/03/01

##### Expected recruitment end date

2013-05-31, 1392/03/10

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Evaluation of the effect of oral consumption of N-acetyl Cysteine in reducing the injuries caused by a single bout of exhaustive exercise in untrained young subjects

##### Public title

Effect of N-acetyl cysteine in reducing the injuries caused by exhaustive exercise

##### Purpose

Prevention

## Inclusion/Exclusion criteria

Inclusion criteria: participants aged between 21 and 25; either sex; having Vo2 max between 35 to 40 ml/kg/min ; and living in the same dormitory ; all having the same type of food. Exclusion criteria: subjects who were consuming energetic drugs; smokers; those having any type of regular sport activity.

### Age

From **21 years** old to **25 years** old

### Gender

Both

### Phase

N/A

### Groups that have been masked

*No information*

### Sample size

Target sample size: **30**

### 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

Research Deputy Adviser, Bushehr University of Medical Sciences

##### Street address

Bushehr University of Medical Sciences, Reshehr street, Next to Salmon farsi Hospital, Bahmani, Bushehr, Iran.

##### City

Bushehr

##### Postal code

987518759577

#### Approval date

2013-04-23, 1392/02/03

#### Ethics committee reference number

B-15-92-2

## Health conditions studied

### 1

#### Description of health condition studied

oxidative stress injuries

#### ICD-10 code

#### ICD-10 code description

-

## Primary outcomes

### 1

#### Description

Total antioxidant capacity

#### Timepoint

Before the consumption of drug; one hour before start of the exercise; Immediately after exercise; after one at rest hour

#### Method of measurement

By ELISA method and commercial kits

### 2

#### Description

C-reactive protein (CRP)

#### Timepoint

Before the consumption of drug; one hour before start of the exercise; Immediately after exercise; after one at rest hour

#### Method of measurement

By ELISA method and commercial kits

### 3

#### Description

Malonaldehyde

#### Timepoint

Before the consumption of drug; one hour before start of the exercise; Immediately after exercise; after one at rest hour

#### Method of measurement

By spectrophotometry

## Secondary outcomes

### 1

#### Description

BMI

#### Timepoint

Before the trial

#### Method of measurement

weight in kilograms divided by the square of height in meters

### 2

#### Description

Vo2 max

#### Timepoint

Before and after the trial

#### Method of measurement

Cooper Standard Aerobic Test was used

## Intervention groups

1

### Description

Intervention group:effervescent tablets of N-acetyl cysteine as 4 times starting 24 hours before the trial

### Category

Prevention

2

### Description

placebo group: dextrose %3 as dissolved in water

### Category

Placebo

## Recruitment centers

1

### Recruitment center

#### Name of recruitment center

The Persien Gulf Biomedical Research Institute

#### Full name of responsible person

Ali Movahed

#### Street address

oostan 19 Alley, Imam khomeini Street

#### City

Bushehr

## Sponsors / Funding sources

1

### Sponsor

#### Name of organization / entity

Deputy of Research,Bushehr University of Medical Sciences

#### Full name of responsible person

Afshin Ostowar

#### Street address

Bushehr University of Medical Sciences,Reshehr Street, Next to Salmon Farsi Hospital, Bahmani.

#### City

Bushehr

### Grant name

### Grant code / Reference number

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

Yes

### Title of funding source

Deputy of Research,Bushehr University of Medical Sciences

### 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

Bushehr University of Medical Sciences

#### Full name of responsible person

Ali Movahed

#### Position

Ph.D in Biochemistry, Academic member

#### Other areas of specialty/work

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## Person responsible for scientific inquiries

### Contact

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#### Full name of responsible person

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Ph.D Biochmistry, academic member

#### Other areas of specialty/work

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**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*