

Clinical Trial Protocol

Iranian Registry of Clinical Trials

04 Jul 2026

Comparison of muscle fatigue induced by electrical stimulations in athletes and non-athletes

Protocol summary

Study aim

Comparison of muscle fatigue induced by electrical stimulation in athletes and non-sports

Design

In the present study, the research sample will be selected from the students from all majors in the paramedical faculty in the Medical University of Kermanshah. Required numbers of participants for each group (athletes and non-athletes) will be selected from the volunteer students, and then each sample will be assessed in two different days. In the first day, muscular fatigue will be evaluated after the athletic protocol and in another day, after applying the relevant intervention (electrical stimulation) each group will be assessed again and the degree of muscular fatigue will be recorded. Electrical stimulation will be applied using Electrical Stimulation Device ITO made in Japan for 450 microseconds at the frequency of 100 Hz through a pair of surface electrodes (5×9 CMs) by placing them along the middle line of the Plantar Flexor Muscles in the sprain. Muscular fatigue will be measured by means of the Electromyography Machine. The surface EMG electrode will be attached to the Gastrocnemius muscle according to the SENIAM protocol, and before and after the application of the electrical stimulation, the EMG signals from this muscle will be recorded. After filtering the assessed signals, the frequency spectrum will be the mean frequency.

Settings and conduct

This study will be performed by the researcher in the School of Allie Medical Sciences of Kermanshah University of Medical Sciences

Participants/Inclusion and exclusion criteria

being healthy, being athletic

Intervention groups

Electrical Stimulation

Main outcome variables

EMG signal of gastrocnemius muscle of the subjects

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180313039076N1**

Registration date: **2018-06-17, 1397/03/27**

Registration timing: **registered_while_recruiting**

Last update: **2018-06-17, 1397/03/27**

Update count: **0**

Registration date

2018-06-17, 1397/03/27

Registrant information

Name

Cyrus Nazari Pirdousti

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 83 3827 9697

Email address

Maryam.mirzaee@kums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-04-09, 1397/01/20

Expected recruitment end date

2018-09-11, 1397/06/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of muscle fatigue induced by electrical stimulations in athletes and non-athletes

Public title

Investigating the effects of electrical stimulation on muscular fatigue between athletes and non-athletes

Purpose

Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:

Being athletic

Exclusion criteria:

not having special diseases

Age

No age limit

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 20

Randomization (investigator's opinion)

N/A

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Kermanshah University of Medical Sciences

Street address

Kermanshah University of Medical Sciences, Shahid Beheshti Boulevard

City

Kermanshah

Province

Kermanshah

Postal code

6719851351

Approval date

2018-05-27, 1397/03/06

Ethics committee reference number

IR.KUMS.REC.1397.100

Health conditions studied

1

Description of health condition studied

muscle fatigue

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

muscle fatigue

Timepoint

Before and after the intervention

Method of measurement

Using electromyography

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Athlete and non-Athlete. Electrical stimulation will be applied using Electrical Stimulation Devise ITO made in Japan for 450 microseconds at the frequency of 100 Hz through a pair of surface electrodes (5×9 CMs) by placing them along the middle line of the Plantar Flexor Muscles in the sprain. Muscular fatigue will be measured by means of the Electromyography Machine. The surface EMG electrode will be attached to the Gastrocnemius muscle according to the SENIAM protocol, and before and after the application of the electrical stimulation, the EMG signals from this muscle will be recorded. After filtering the assessed signals, the frequency spectrum will be the mean frequency.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

School of Allie Medical Sciences of Kermanshah University of Medical Sciences

Full name of responsible person

Mohammadbagher Shamsi

Street address

School of Allie Medical Sciences, Dolat Abad Blvd, Isar Square

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Kermanshah

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Phone

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Email

siroosnazari@hotmail.com

Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Kermanshah University of Medical Sciences

Full name of responsible person

Dr Farid Najafi

Street addressShahid beheshti Boulevard, Vice Chancellor for
Research of Kermanshah University of Medical
Sciences**City**

Kermanshah

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Kermanshah

Postal code

6715847141

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+98 83 3835 0177

Email

farid_n32@yahoo.com

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Kermanshah 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**

Kermanshah University of Medical Sciences

Full name of responsible person

Mohammadbagher Shamsi

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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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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Position

Assistant professor

Latest degree

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

Kermanshah University of Medical Sciences

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

Yes - There is a plan to make this available

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not 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

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available

Title and more details about the data/document

All collected deidentified data will be shared with others

When the data will become available and for how long

Starting 6 months after relative manuscript publication

To whom data/document is available

Researchers working in academic institutions or people working in businesses can also apply to receive it.

Under which criteria data/document could be used

No access criteria for data/documents

From where data/document is obtainable

Correspond with Dr MohammadBagher Shamsi

What processes are involved for a request to access data/document

Correspond with and email to Dr MohammadBagher Shamsi.

Comments