

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The effect of different muscle fatigue on postural control

Protocol summary

Summary

Intervention group: fatigue of plantar flexor: fatigue is induced with 60% maximum voluntary contraction, position of protocol is long sitting with 90 degree hip flexion, Fatigue of back extensor: fatigue is induced with 60% maximum voluntary contraction, position of protocol is sitting with 135 degree hip flexion and 90 degree knee flexion, Fatigue of knee extensor: fatigue is induced with 60% maximum voluntary contraction, position of protocol is sitting with 90 degree of knee flexion, Fatigue of neck extensor: fatigue is induced with 60% maximum voluntary contraction, position of protocol is sitting with head and neck in upright position. After each fatigue exercise the participants will stand on the force plate.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201010032391N3**
Registration date: **2010-11-20, 1389/08/29**
Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2010-11-20, 1389/08/29

Registrant information

Name

Zahra Rojhani Shirazi

Name of organization / entity

Shiraz University of Medical Sciences, School of Rehabilitation Sciences

Country

Iran (Islamic Republic of)

Phone

+98 71 1627 1552

Email address

rojhaniz@sums.ac.ir

Recruitment status

Recruitment complete

Funding source

Vice Chancellor for Research Affairs

Expected recruitment start date

2010-09-23, 1389/07/01

Expected recruitment end date

2010-11-22, 1389/09/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of different muscle fatigue on postural control

Public title

The effect of muscular fatigue on postural control

Purpose

Diagnostic

Inclusion/Exclusion criteria

Inclusion criteria: Healthy female students of faculty of rehabilitation, age 20-30 years old Exclusion criteria: History of pain or trauma in lower extremity and vertebral column during a year prior to the study, neurological, vestibular or visual disorders, professional exercise activities

Age

From **20 years** old to **30 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **10**

Randomization (investigator's opinion)

N/A

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Crossover

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Shiraz University of Medical Sciences

Street address

Shiraz University of Medical Sciences-Karimkhan st.

City

Shiraz

Postal code

Approval date

2010-09-23, 1389/07/01

Ethics committee reference number

31309/4/9/89/پ

Health conditions studied

1

Description of health condition studied

balance and postural control

ICD-10 code

G98

ICD-10 code description

Diseases of the nervous system

Primary outcomes

1

Description

Displacement of center of mass

Timepoint

Just after fatigue

Method of measurement

Camera and Matlab software

2

Description

Speed of center of mass

Timepoint

Just after fatigue

Method of measurement

Camera and Matlab software

3

Description

Displacement of center of pressure

Timepoint

Just after fatigue

Method of measurement

Force plate and Matlab software

4

Description

Speed of center of pressure

Timepoint

Just after fatigue

Method of measurement

Force plate and Matlab software

Secondary outcomes

empty

Intervention groups

1

Description

The aim of this cross over study is to compare the effect of muscular fatigue of plantar flexor of ankle joint, knee extensor, back extensor, and neck extensor on postural control. In this study 10 healthy female students of faculty of rehabilitation, aged 20-30 years, will be recruited. The intervention under study is fatigue of plantar flexor of ankle joint, knee extensor, back extensor and neck extensor during 4 sessions with 2 days interval. After each fatigue protocol, the participants stand on force plate and variables of velocity and displacement of center of gravity and center of pressure will be measured. As controls, Participants stand again on force plate without fatigue at another session and the outcome variables will be measured.

Category

Rehabilitation

2

Description

In control-Intervention2: Subject stands on force plate without muscle fatigue.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Faculty of Rehabilitation

Full name of responsible person

Street address

City

Shiraz

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shiraz University of Medical Science

Full name of responsible person

Zahra Rojhani Shirazi

Street address

Faculty of Rehabilitation-Chamran blv.

City

Shiraz

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Shiraz University of Medical Science

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

Shiraz University of Medical Sciences

Full name of responsible person

Zahra Rojhani Shirazi

Position

Assistant Professor

Other areas of specialty/work

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Person responsible for scientific

inquiries

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Person responsible for updating data

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Name of organization / entity

Shiraz University of Medical Sciences

Full name of responsible person

zahra Rojhani Shirazi

Position

Other areas of specialty/work

Street address

City

Postal code

Phone

Fax

Email

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