Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

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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 Scirnces
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-Internention2: 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
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Person responsible for updating data

Contact
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