

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Comparison of the effect of isometric exercise and walking on muscle fatigue in students during prolonged reading

Protocol summary

Study aim

Comparison of isometric exercise and walking on the reduction of neck muscle fatigue due to prolonged reading using electromyography

Design

Samples will be selected from students and workers of Kermanshah University who have not any problem of neck pain. They will be randomly allocated into three groups of isometric exercise or walking and control. After attaching the electrodes of EMG on the neck muscles, the participants will be sited at the table, which is embedded, and they will be reading for one hour. In the first group, every ten minutes, the isometric exercises will be performed by the participants for 5 periods of one minute (a total of 5 minutes) and in the second group, every ten minutes, participants will walk at a desired pace speed for 5 periods of one minute (a total of 5 minutes) and in control group only keep reading. From the first 10 second and the last 10 second of the reading period, the EMG signals will be recorded and assessed regarding muscle fatigue.

Settings and conduct

In this study, the samples were randomly divided into three groups: isometric training and walking between long-term study and control groups. At the beginning and after the one hour of study, each sample will be evaluated, that is the neck muscle fatigue will be measured and be assessed.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Being student or worker in Kermanshah University of Medical Sciences. Exclusion criteria: People with congenital (hereditary) diseases, patients with a history of surgery and patients with a history of neck or arm pain or musculoskeletal disorder

Intervention groups

In the isometric exercise group, every ten minutes, the exercises will be performed 5 times for one minute. In the second group, every ten minutes, they will walk slowly in their optimum speed for a minute and a total of

5 times.

Main outcome variables

Neck muscle fatigue

General information

Reason for update

Regarding the delay in starting the project because of the Corona, we decided to change one of the interventions, because of more related documents. Also for improving the study, a control group add.

Acronym

IRCT registration information

IRCT registration number: **IRCT20111109008035N5**

Registration date: **2018-02-21, 1396/12/02**

Registration timing: **prospective**

Last update: **2022-03-09, 1400/12/18**

Update count: **1**

Registration date

2018-02-21, 1396/12/02

Registrant information

Name

MohammadBagher Shamsi

Name of organization / entity

Kermanshah University of Medical Sciences

Country

Iran (Islamic Republic of)

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+98 83 3838 4185

Email address

mshamsi@kums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-02-20, 1400/12/01

Expected recruitment end date

2022-06-22, 1401/04/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effect of isometric exercise and walking on muscle fatigue in students during prolonged reading

Public title

Effect of isometric exercise and walking on neck muscles fatigue reduction

Purpose

Prevention

Inclusion/Exclusion criteria**Inclusion criteria:**

All students and workers of the School of Allied Medical Sciences of Kermanshah University of Medical Sciences

Exclusion criteria:

Having musculoskeletal disorder Having congenital (hereditary) diseases Having a history of surgery Having a history of neck or arm pain Having musculoskeletal disorder

Age

No age limit

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 75

Randomization (investigator's opinion)

Randomized

Randomization description

Samples are randomly assigned random numbers in three groups of isometric exercises and walking and no intervention (control group) between long-term study

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

6715847141

Approval date

2018-01-03, 1396/10/13

Ethics committee reference number

kums.rec.1396.564

Health conditions studied**1****Description of health condition studied**

Neck muscle fatigue

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Muscles fatigue

Timepoint

Before and after the intervention

Method of measurement

With surface electromyography

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention group 1: Isometric Exercises (every 10 minutes, one minute of isometric exercises for the neck muscles in a total of 5 times for one minute)

Category

Prevention

2**Description**

Intervention group 2: Walking (every ten minutes, one minute of walking at a desired pace and a total of 5 times).

Category

Prevention

3

Description

Control group: The samples in this group just will sit in the same workplace as the other groups for an hour to study (read a book) and will not do any other interventions.

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Kermanshah University of Medical Sciences, School of Allie Medical Sciences

Full name of responsible person

Mohammad Bagher Shamsi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Kermanshah University of Medical Sciences

Full name of responsible person

Dr Farid Najafi

Street address

Shahid beheshti Boulevard, Vice Chancellor for Research of Kermanshah University of Medical Sciences

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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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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

No - There is not a plan to make this available

Clinical Study Report

No - There is not 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