Clinical Trial Protocol
Iranian Registry of Clinical Trials

20 Jun 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
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Kermanshah University of Medical Sciences
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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 musckuloskeletal 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 minuet 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
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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
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Other areas of specialty/work
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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