

Clinical Trial Protocol

Iranian Registry of Clinical Trials

05 Aug 2026

Investigating the effect of mobility-based interventions on biomechanical variables in prolonged sitting works

Protocol summary

Study aim

Investigating the effect of mobility-based interventions on biomechanical variables in prolonged sitting works

Design

A clinical trial with parallel groups, a sample size of 20 people

Settings and conduct

This study will be done in the laboratory of the Sports Sciences Research Institute. In the control phase, the participants will perform cognitive tasks including watching a video, typing text, correcting the mistakes, and n-back cognitive test without any intervention. In the intervention type1, the subject will be asked to perform all the defined tasks while an instrument sensitive to changes in the angle of the thoracic region will be placed on a landmark and generates alarms based on the changes in the spine angle at certain time intervals. In the third stage, (intervention phase 2) after completing each task, the participant will perform specified sports exercises. Data collection tools include an electromyography device, a motion analysis device, and also to evaluate perceived discomfort and mental fatigue from the Visual Analogue Scale (VAS) will be used. Also, blinding was not done due to the clarity of the type of interventions.

Participants/Inclusion and exclusion criteria

Inclusion criteria: -Age range between 20 to 30 years - Having 5 years of experience working with computer-related tasks Exclusion criteria: -Musculoskeletal disorders and problems - Neurological defects and autoimmune diseases - Cardiovascular disorders

Intervention groups

In this study the subjects were investigated under three different conditions: - without any intervention - intervention type 1 (subjects were asked to do the predefined tasks while a sensor, sensitive to variations in angles, was mounted on their spine). - intervention type 2 (subjects were asked to do predefined exercises before each task).

Main outcome variables

- Perceived discomfort - Muscle activity - Spinal kinematics -Function

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180902040923N5**

Registration date: **2022-07-21, 1401/04/30**

Registration timing: **retrospective**

Last update: **2022-07-21, 1401/04/30**

Update count: **0**

Registration date

2022-07-21, 1401/04/30

Registrant information

Name

Mohamad Sadegh Ghasemi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 8670 4839

Email address

ghasemi.m@iums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-03-10, 1400/12/19

Expected recruitment end date

2022-05-09, 1401/02/19

Actual recruitment start date

2021-05-12, 1400/02/22

Actual recruitment end date

2022-05-06, 1401/02/16
Trial completion date
 2022-05-06, 1401/02/16

Scientific title
 Investigating the effect of mobility-based interventions on biomechanical variables in prolonged sitting works

Public title
 Investigating the effect of mobility-based interventions on biomechanical variables in prolonged sitting works

Purpose
 Prevention

Inclusion/Exclusion criteria
Inclusion criteria:
 Height and weight of 50th percentile Having 5 years of experience working with computer related tasks
 Placement in the standard range of curvatures of the spine
Exclusion criteria:
 Absence of musculoskeletal disorders and problems Lack of neurological defects and autoimmune diseases
 Absence of cardiovascular disorders

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

Gender
 Both

Phase
 N/A

Groups that have been masked
No information

Sample size
 Target sample size: **20**
 Actual sample size reached: **20**

Randomization (investigator's opinion)
 N/A

Randomization description
Blinding (investigator's opinion)
 Not blinded

Blinding description
Placebo
 Not used

Assignment
 Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
 Ethics Committee of Iran University of Medical Sciences
Street address
 Shahid Hemmat Highway-Next to Milad Tower
City
 tehan

Province
 Tehran
Postal code
 1449614535
Approval date
 2021-04-18, 1400/01/29
Ethics committee reference number
 IR.IUMS.REC.1400.038

Health conditions studied

1

Description of health condition studied
 MUSCULOSKELETAL DISORDER
ICD-10 code
 R29
ICD-10 code description
 Other symptoms and signs involving the nervous and musculoskeletal systems

Primary outcomes

1

Description
 Perceived discomfort
Timepoint
 In the study entitled "investigating the effects of mobility-based interventions on biomechanical variables during prolonged sitting tasks", the study variables were measured four times, including the first, middle, and last minutes of each 10-minute predefined task.
Method of measurement
 Body Part Discomfort Scale

2

Description
 - Muscle activity
Timepoint
 From the beginning of the sitting and in all periods of time
Method of measurement
 8-channel electromyography device

3

Description
 Spinal kinematics
Timepoint
 Sitting at all intervals
Method of measurement
 Motion analysis sistem

Secondary outcomes

empty

Intervention groups

1

Description

Intervention type 1: During all tasks, the instrument sensitive to changes in the angle of the thoracic region will be placed on the landmark on the spine, which will provide alarms at certain intervals .Intervention type 2: The subjects will be asked to perform pre-determined exercises before doing each task

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Research Institute of Sport Sciences and Physical Education

Full name of responsible person

Dr. Mohammad Sadegh Ghasemi

Street address

no 3, fifth alley.Miremad Street, Professor Motahhari Street, Tehran

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1587958711

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Iran University of Medical Sciences

Full name of responsible person

Mohammad Sadegh Ghasemi

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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

Iran 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

Iran University of Medical Sciences

Full name of responsible person

Mohammad Sadeq Ghasemi

Position

PhD in Biomechanics

Latest degree

Ph.D.

Other areas of specialty/work

Ergonomics

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Ergonomic Department, School of Public Health, Iran University of Medical Sciences, Hemat Express way, Tehran

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Person responsible for updating data

Contact

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

Due to the large dataset (muscle activity and spine angle) and requiring specialty in the data processing of biological data

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Not applicable

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable