Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The effectiveness of a Comprehensive Corrective Exercises Program (CCEP) and subsequent detraining on alignment, muscle activation and movement pattern in men with upper crossed syndrome

Protocol summary

Study aim

To study the changes in the alignment (position of the scapula, head, shoulders and thoracic spine) and the electromyography activity of the selected muscles (upper , middle and lower trapezius, serratus anterior) and the movement patterns (Scapulohumeral rhythm and neck flexion) based on a comprehensive approach in the assessment processes, the design of their corrective exercises and their effectiveness in men with the UCS before and after an 8-week the CCEP, and 4 weeks detraining after it, examine the sustainability of the changes.

Design

Single-blind randomized controlled trial

Settings and conduct

A single-blinded randomized, controlled trial comparing a 3 times per week group exercise intervention with a control group.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Non-athletic male students residing in the dormitory of Tehran University who are aged 18 to 28 years old. having scapular dyskinesis. forward head and shoulder degrees more than 46 and 52 respectively, and increased thoracic kyphosis more than 42. complete the written consent form. Exclusion criteria: History of disease and fracture, abnormalities in the lower extremities.

Intervention groups

The intervention group includes those with the upper crossed syndrome who receive the intervention of a comprehensive corrective exercise program. The control group also includes people with the upper crossed syndrome who do not receive any training intervention and follow their daily activities.

Main outcome variables

The alignment of head and thoracic spine with selected muscle activation

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20181004041232N1**
Registration date: **2018-10-26, 1397/08/04**
Registration timing: **prospective**

Last update: **2019-05-25, 1398/03/04**
Update count: **3**

Registration date

2018-10-26, 1397/08/04

Registrant information

Name

Mohammad Bayattork

Name of organization / entity

University of Tehran

Country

Iran (Islamic Republic of)

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+98 21 8846 4538

Email address

bayattork@ut.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-12-22, 1397/10/01

Expected recruitment end date

2019-07-01, 1398/04/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
The effectiveness of a Comprehensive Corrective Exercises Program (CCEP) and subsequent detraining on alignment, muscle activation and movement pattern in men with upper crossed syndrome

Public title
Comprehensive Corrective Exercises and upper crossed syndrome

Purpose
Prevention

Inclusion/Exclusion criteria

Inclusion criteria:
The students of the University of Tehran, Iran. Participants who have all symptoms of UCS Complete the written consent form 18 to 28 years of age

Exclusion criteria:
Don’t complete the corrective exercise program Have lack of interest in continuing the research program Have physical activity and sports Have any visible malalignment in the pelvis and lower extremities Have pathological signs Have a history of fracture, surgery, or joint diseases in the spine, shoulder and pelvis Have a body weight outside the normal range

Age
From **18 years** old to **28 years** old

Gender
Male

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **24**

Randomization (investigator's opinion)
Randomized

Randomization description
In order to randomly assign the subjects to the intervention and control groups, one number is considered for each subject. The numbers are randomly assigned to two groups using a random number table. To conceal numbers in each group, they are written on paper, and each one is kept in a numbered sealed, opaque envelope.

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 Tehran University

Street address
North Kargar

City
Tehran

Province
Tehran

Postal code
1417614418

Approval date
2017-08-28, 1396/06/06

Ethics committee reference number
IR.ut.Rec.1395026

Health conditions studied

1

Description of health condition studied
Upper crossed syndrome

ICD-10 code
M40.04

ICD-10 code description
Postural kyphosis, thoracic region

Primary outcomes

1

Description
The position and rhythm of Scapula

Timepoint
Before intervention, 8 and 12 weeks after starting the intervention

Method of measurement
Scapular dyskinesis test

2

Description
Head alignment

Timepoint
Before intervention, 8 and 12 weeks after starting the intervention

Method of measurement
Photogrammetery method

3

Description
Thoracic kyphosis angle

Timepoint
Before intervention, 8 and 12 weeks after starting the intervention

Method of measurement
Flexicurve

4

Description
Electromyography of selected muscles
Timepoint
Before intervention, 8 and 12 weeks after starting the intervention
Method of measurement
Electromyography device

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: The intervention group will receive comprehensive corrective exercises under supervision and 3 sessions a week. The duration of the intervention period is 8 weeks.
Category
Prevention

2

Description
Control group: There is no intervention
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
University of Tehran
Full name of responsible person
Mohammad bayattork
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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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
University of Tehran
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
University of Tehran
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Mohammad Bayattork
Position
Student
Latest degree
Master
Other areas of specialty/work
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available

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

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

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

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

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

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