

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 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)

Phone

+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

Photogrammetry 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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Email

Mohammadbayat82@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

University of Tehran

Full name of responsible person

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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

Full name of responsible person

Mohammad Bayattork

Position

Student

Latest degree

Master

Other areas of specialty/work

Corrective exercises

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inquiries

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Position

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Other areas of specialty/work

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Position

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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