Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparison of Electromyographic Activity of Selected Shoulder Girdle Muscles Following a Core Muscle Fatigue Protocol in Overhead Athletes With and Without Scapular Dyskinesis

Protocol summary

Study aim

The aim of the study was to compare the electrical activity of selected shoulder girdle muscles under the influence of core muscle fatigue in athletes with and without scapular dyskinesis.

Design

A parallel clinical trial. Among athletes performing overhead movements, 15 of them with scapular dyskinesis and 15 of them without dyskinesis are randomly selected.

Settings and conduct

This study will be conducted in the corrective movement laboratory of Shahrekord University. After the examinations, the participants will be placed in the dyskinesia group and the healthy group during the evaluation process. Before the start of the study, all individuals will be examined for the desired outcomes and will be re-evaluated after the measurement is completed. In this study, all assessments will be made by the therapist.

Participants/Inclusion and exclusion criteria

Male gender - Positive or negative tests for scapular dyskinesis - Having an age range between 15 and 20 years - Having at least 3 years of sports experience in disciplines with overhead arm movements - Doing regular exercise three sessions per week - No history of injuries such as dislocations or fractures or surgery in any of the bones of the shoulder girdle - No complete rupture of the shoulder girdle muscles - No atrophy of the shoulder muscles - No pain during the tests and protocol

Intervention groups

This study will involve overhead athletes aged 18 to 25 with and without scapular dyskinesis, and the electrical activity of selected muscles (eight muscles) will be measured before and after core muscle fatigue.

Main outcome variables

Electrical activity of selected shoulder girdle muscles

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20250413065306N3**
Registration date: **2025-10-27, 1404/08/05**
Registration timing: **prospective**

Last update: **2025-10-27, 1404/08/05**
Update count: **0**

Registration date

2025-10-27, 1404/08/05

Registrant information

Name
Banafsheh Mohammadi
Name of organization / entity
Shahrekord University
Country
Iran (Islamic Republic of)
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+98 38 3232 0372
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b.mohammadi@sku.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-11-06, 1404/08/15

Expected recruitment end date

2025-11-21, 1404/08/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of Electromyographic Activity of Selected Shoulder Girdle Muscles Following a Core Muscle Fatigue Protocol in Overhead Athletes With and Without Scapular Dyskinesis

Public title

Comparison of Electromyographic Activity of Selected Shoulder Girdle Muscles Following a Core Muscle Fatigue Protocol in Overhead Athletes With and Without Scapular Dyskinesis

Purpose

Health service research

Inclusion/Exclusion criteria

Inclusion criteria:

Being an overhead athlete Positive or negative results of scapular dyskinesis tests Having at least 3 years of sports experience Regular exercise sessions three times a week Voluntary consent of subjects to participate in the research

Exclusion criteria:

History of injuries, such as dislocations or fractures, to any shoulder girdle bones History of shoulder or trunk surgery within the past 1 year History of direct contact injury to the neck or upper limb within the past 1 month Complete rupture of shoulder girdle muscles Having adhesive capsulitis Any atrophy in the shoulder muscle area Presence of severe musculoskeletal disorders in the upper limbs including forward head, rounded shoulders, kyphosis, scoliosis Diagnosis of injury to the long thoracic nerve or accessory nerve Any pain during the tests and protocol

Age

From **18 years** old to **25 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Not randomized

Randomization description

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

Working Group/Research Ethics Committee of Shahrekord University

Street address

Rahbar Boulevard

City

Shahrekord

Province

Chahar-Mahal-va-Bakhtiari

Postal code

8818634141

Approval date

2025-07-17, 1404/04/26

Ethics committee reference number

IR.SKU.REC.1404.002

Health conditions studied

1

Description of health condition studied

Scapular Dyskinesis

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Measuring electrical activity of muscles

Timepoint

Before and after performing the core muscle fatigue protocol

Method of measurement

Electromyography device

Secondary outcomes

empty

Intervention groups

1

Description

Subjects perform a core muscle fatigue protocol consisting of 4 consecutive sets of 7 exercises, with each subject performing each exercise 20 times for 40 seconds (each repetition for 2 seconds).

Category

Prevention

2

Description

Control group: (Healthy people): This group does not

receive any intervention.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Corrective Exercise and Sports Pathology Laboratory, Shahrekord University

Full name of responsible person

Matin Esmaeili Bavani

Street address

Rahbar Boulevard

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8818634141

Phone

+98 913 798 3050

Email

matin.esm12@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahrekord University

Full name of responsible person

Banafshe Mohammadi

Street address

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bmohammadi290@gmail.com

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Shahrekord University

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

Shahrekord University

Full name of responsible person

Banafshe Mohammadi

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Biomechanics

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is 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

Yes - There is a plan to make this available

Title and more details about the data/document

With permission from project partners, all information can be shared after being de-identified.

When the data will become available and for how long

Start the access period one year after printing the results.

To whom data/document is available

Data will be available to academic and scientific researchers.

Under which criteria data/document could be used

Any kind of functional analysis on the submitted data is allowed

From where data/document is obtainable

By Email: b.mohammadi@sku.ac.ir

What processes are involved for a request to access data/document

Via email: mohammadi@sku.ac.ir and mention the use of the documents.

Comments