

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Acute Effects of Static Stretching and Dynamic Warm-up on Shoulder Performance in Male Athletes with Shoulder Impingement Syndrome

Protocol summary

Study aim

Acute effects of stretching and warm-up protocols on shoulder function in athletes with impingement syndrome.

Design

The present study will include 50 participants and will be conducted as a single-blind trial. Participants will be randomly allocated into three exercise groups through simple randomization using the RandBox.top website for random assignment.

Settings and conduct

Conducted in Shiraz under controlled conditions, this study randomly assigns healthy athletes and those with shoulder impingement to three intervention sessions. Assessors, blinded to intervention type, perform only functional evaluations.

Participants/Inclusion and exclusion criteria

Inclusion Criteria: - Male athlete aged between 20 and 30 years - Diagnosed with shoulder impingement syndrome (presenting at least two positive clinical signs, including pain during shoulder arc motion, positive Neer or Hawkins-Kennedy test, pain during resisted external rotation, or Apprehension-Relocation test without posterior pain) - Not participating in any shoulder range-of-motion exercise programs Exclusion Criteria: - History of shoulder surgery or dislocation - Currently undergoing physiotherapy or drug therapy - Performing heavy exercise within 48 hours before the test - Failure to attend any stage of the testing

Intervention groups

This study compares four protocols: 1) Static stretching (6 exercises, 3x30s with 15s rest, ~10 min total); 2) Dynamic warm-up (6 band exercises, 10 reps at 2s tempo); 3) Combined protocol (3 stretching + 3 warm-up exercises); 4) Control group (healthy athletes performing all protocols).

Main outcome variables

Internal and external shoulder rotation range of motion; shoulder joint stability; shoulder joint proprioception;

shoulder muscle strength.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230612058457N6**

Registration date: **2025-06-04, 1404/03/14**

Registration timing: **prospective**

Last update: **2025-06-04, 1404/03/14**

Update count: **0**

Registration date

2025-06-04, 1404/03/14

Registrant information

Name

Mohammad Alimoradi

Name of organization / entity

Shahid Bahonar University

Country

Iran (Islamic Republic of)

Phone

+98 34 2250 1685

Email address

malimoradi@sport.uk.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-06-09, 1404/03/19

Expected recruitment end date

2025-06-18, 1404/03/28

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Acute Effects of Static Stretching and Dynamic Warm-up on Shoulder Performance in Male Athletes with Shoulder Impingement Syndrome

Public title

Comparison of the Effects of Static Stretching and Dynamic Warm-up on Shoulder Performance in Athletes with Shoulder Impingement Syndrome

Purpose

Supportive

Inclusion/Exclusion criteria**Inclusion criteria:**

Sex: Male Age range: 20 to 30 years Pain in the arc of motion (between 60 and 120 degrees) during shoulder flexion or extension. Positive Neer or Hawkins-Kennedy test. Pain during resisted external rotation, shoulder abduction, or positive Jobe test. Positive Apprehension-Relocation test (without posterior pain).

Exclusion criteria:

History of shoulder surgery or dislocation. Currently receiving physiotherapy or medication treatment for the shoulder. Performed heavy exercises within 48 hours before the test. Lack of cooperation or withdrawal from continuing the study. Presence of other neuromuscular or musculoskeletal diseases affecting the shoulder (such as rheumatoid arthritis, rotator cuff tear).

Age

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

Gender

Male

Phase

N/A

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **50**

Randomization (investigator's opinion)

Randomized

Randomization description

In this study, to allocate participants into three intervention groups (static stretching, dynamic warm-up, and combined), simple randomization with block randomization will be used. The unit of randomization will be the individual, and the allocation sequence to groups will be generated using the RandBox.top website with the method of balanced blocks. If controlling for confounding variables such as type of exercise or symptom severity is necessary, stratified randomization will be applied. To conceal the allocation (Allocation Concealment), sealed envelopes containing group codes will be used, which will be opened by an independent person after enrollment and pre-testing. These methods will ensure that the distribution of participants across groups is balanced and unpredictable.

Blinding (investigator's opinion)

Single blinded

Blinding description

In the present study, the researcher recording the research variables is unaware of the participants' allocation to the exercise protocols.

Placebo

Not used

Assignment

Parallel

Other design features

This study will be a randomized controlled trial.

Secondary Ids

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Research Ethics Committees of University of Guilan

Street address

5th Kilometer of Persian Gulf Highway, Rasht, Guilan Province, Iran

City

Rasht

Province

Guilan

Postal code

4199613776

Approval date

2025-05-19, 1404/02/29

Ethics committee reference number

IR.GUILAN.REC.1404.035

Health conditions studied**1****Description of health condition studied**

Shoulder impingement syndrome

ICD-10 code

M75.4

ICD-10 code description

Impingement syndrome of shoulder

Primary outcomes**1****Description**

In the present study, the range of motion of internal and external rotation of the shoulder joint will be examined.

Timepoint

At the beginning of the study (before the intervention), 5 minutes after the intervention, and one hour after the intervention.

Method of measurement

It is measured using a goniometer.

2

Description

The present study investigates the stability of the shoulder joint.

Timepoint

At the beginning of the study (before the intervention), 5 minutes after the intervention, and one hour after the intervention.

Method of measurement

It is assessed using the Y test.

3

Description

The present study investigates the proprioception of the shoulder joint.

Timepoint

At the beginning of the study (before the intervention), 5 minutes after the intervention, and one hour after the intervention.

Method of measurement

It is evaluated using target angle reconstruction and photography.

4

Description

The present study examines isokinetic and isometric strength of the shoulder joint during internal and external rotation, assessed through concentric and eccentric contractions.

Timepoint

At the beginning of the study (before the intervention), 5 minutes after the intervention, and one hour after the intervention.

Method of measurement

It is evaluated using an isokinetic dynamometer.

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Athletes with shoulder impingement syndrome participating in a static stretching protocol. The protocol includes six targeted active soft-tissue stretches for the shoulder, with each stretch performed in 3 sets of 30 seconds, and 15 seconds of rest between sets. The total duration of the protocol is approximately 10 minutes.

Category

Rehabilitation

2

Description

Intervention group: Athletes with shoulder impingement syndrome participating in a dynamic warm-up protocol.

The protocol includes six dynamic exercises using a yellow resistance band, with each exercise performed for 10 repetitions at a speed of 2 seconds per repetition.

Category

Rehabilitation

3

Description

Intervention group: Athletes with shoulder impingement syndrome who participate in the combined protocol. This protocol includes three exercises from the static stretching protocol and three exercises from the dynamic warm-up protocol, performed with the same timing and structure as the other groups. The exercises include: shoulder extension, deltoid stretch, scapular punch, pectoralis major stretch, throwing acceleration, and triceps stretch.

Category

Rehabilitation

4

Description

Control group: Healthy athletes without symptoms of shoulder impingement syndrome who participate in all three intervention protocols (static stretching, dynamic warm-up, and a combination of static stretching and dynamic warm-up). This group is included for comparison of responses with the intervention groups (athletes with the condition). The order of protocol implementation is randomized, with a 72-hour interval between sessions.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Department of Physical Education and Sports Sciences, Faculty of Educational Sciences and Psychology

Full name of responsible person

Mohammad Alimoradi

Street address

Central Administration Bldg., Jomhoori Eslami Blvd., Shiraz, Iran

City

Shiraz

Province

Fars

Postal code

8433471946

Phone

+98 71 3646 0430

Email

malimoradi@sport.uk.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

University of Guilan

Full name of responsible person

Ali Basti

Street address

Rasht, Persian Gulf Highway, Kilometer 5 of Tehran Road, University of Gilan Complex

City

Rasht

Province

Guilan

Postal code

4199613776

Phone

+98 13 3369 0274

Email

basti@guilan.ac.ir

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

University of Guilan

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

Shahid Bahonar University

Full name of responsible person

Mohammad Alimoradi

Position

Graduated Student

Latest degree

Master

Other areas of specialty/work

Sport Medicine

Street address

Unit 6, Yekta residential complex, Fathalishahi 12 St, Kerman, Iran

City

Kerman

Province

Kerman

Postal code

7614816961

Phone

+98 34 2250 1685

Fax**Email**

malimoradi@sport.uk.ac.ir

Person responsible for scientific inquiries

Contact

Name of organization / entity

Shahid Bahonar University

Full name of responsible person

Mohammad Alimoradi

Position

Graduated Student

Latest degree

Master

Other areas of specialty/work

Sport Medicine

Street address

Unit 6, Yekta residential complex, Fathalishahi 12 St, Kerman, Iran

City

Kerman

Province

Kerman

Postal code

7614816961

Phone

+98 34 2250 1685

Fax**Email**

malimoradi@sport.uk.ac.ir

Person responsible for updating data

Contact

Name of organization / entity

Shahid Bahonar University

Full name of responsible person

Mohammad Alimoradi

Position

Graduated Student

Latest degree

Master

Other areas of specialty/work

Sport Medicine

Street address

Unit 6, Yekta residential complex, Fathalishahi 12 St, Kerman, Iran

City

Kerman

Province

Kerman

Postal code

7614816961

Phone

+98 34 2250 1685

Fax**Email**

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

No - There is not a plan to make this available

Analytic Code

Yes - There is 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

En All data will be shared after anonymizing individuals,

ensuring their non-identifiability.

When the data will become available and for how long

The data access period will start immediately after the results are printed.

To whom data/document is available

The data will be accessible to researchers and organizations related to sports disciplines where the shoulder joint is the main involved joint.

Under which criteria data/document could be used

In order to assist scientific research and promote the implementation of executive goals with a focus on reducing musculoskeletal injuries and enhancing the performance of athletes.

From where data/document is obtainable

Mohammad Alimoradi/malimoradi@sport.uk.ac.ir

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

Requests for access to data will be answered within a week

Comments