# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

22 Nov 2026

## Comparison of therapeutic effects of mobilization and mobilization with movement on acromiohumeral distance in athletes with shoulder primary impingement syndrome: A randomized clinical trial

## Protocol summary

**Study aim**

Comparison of therapeutic effects of mobilization and mobilization with movement on acromiohumeral distance in athletes with shoulder primary impingement syndrome

**Design**

This is a randomized clinical trial study with parallel groups, will be conducted on 51 athletes with shoulder primary impingement syndrome. Assignment of patients to study groups is in the form of random blocking.

**Settings and conduct**

From athletes with confirm diagnosis of shoulder primary impingement syndrome referring to Tabatabai Clinic, Semnan, total of 51 patients will be selected and randomly divided into 3 groups.

**Participants/Inclusion and exclusion criteria**

Inclusion criteria: Age between 20to 35 years, semi-professional athletes (who exercise an average of 3 to 6 hours per week), doing overhead exercises such as volleyball, primary impingement syndrome of shoulder, patient consent to participate in the study; Exclusion criteria: History of trauma, fracture, dislocation or surgery in the neck and shoulders, osteoporosis, tumor or neuromuscular disorders around the shoulder, any subcutaneous inflammation, inflammatory disorders such as rheumatoid arthritis, adhesive capsules, complete rupture of the rotator cuff tendon, corticosteroid injections in shoulders in the past year, received physical therapy for the shoulder or spine in the last 3 months

**Intervention groups**

The first group undergoes mobilization for 6 sessions (3 times a week)Each technique is performed 4 times (30 seconds each). The second group undergoes mobilization with movement( MVM) for 6 sessions (3 times a week).Each treatment session consists of three sets of 10 repetitions and each repetition takes 4 seconds. The third group (control) does not receive any intervention.

**Main outcome variables**

Acromiohumeral distance, Shoulder Pain and Disability Index (SPADI), shoulder Range of motion (ROM) and pain severity

## General information

**Reason for update**

**Acronym**

**IRCT registration information**

IRCT registration number: **IRCT20211101052934N1**
Registration date: **2022-03-09, 1400/12/18**
Registration timing: **registered_while_recruiting**

Last update: **2022-03-09, 1400/12/18**
Update count: **0**

**Registration date**

2022-03-09, 1400/12/18

**Registrant information**

**Name**

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**Name of organization / entity**

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Iran (Islamic Republic of)

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**Recruitment status**

**Recruitment complete**

**Funding source**

**Expected recruitment start date**

2021-12-22, 1400/10/01

**Expected recruitment end date**

2022-06-20, 1401/03/30

**Actual recruitment start date**

empty

**Actual recruitment end date**
empty
**Trial completion date**
empty

**Scientific title**
Comparison of therapeutic effects of mobilization and mobilization with movement on acromiohumeral distance in athletes with shoulder primary impingement syndrome: A randomized clinical trial

**Public title**
Comparison of mobilization and mobilization with movement on acromiohumeral distance in athletes with shoulder primary impingement syndrome
**Purpose**
Treatment
**Inclusion/Exclusion criteria**
**Inclusion criteria:**
Age between 20 to 35 years Semi-professional athletes (who exercise an average of 3 to 6 hours per week) Doing overhead exercises such as volleyball primary impingement syndrome of shoulder Patient consent to participate in the study
**Exclusion criteria:**
History of trauma, fracture, dislocation or surgery in the neck and shoulders Osteoporosis Tumor or neuromuscular disorders around the shoulder Any subcutaneous inflammation Inflammatory disorders such as rheumatoid arthritis Adhesive capsules Complete rupture of the rotator cuff tendon Corticosteroid injections in shoulders in the past year Received physical therapy for the shoulder or spine in the last 3 months
**Age**
From **20 years** old to **35 years** old
**Gender**
Both

**Phase**
N/A
**Groups that have been masked**

- Participant
- Outcome assessor

**Sample size**
Target sample size: **51**
**Randomization (investigator's opinion)**
Randomized
**Randomization description**
.In this study, we use the randomized permutation block method for random assignment. The operation will be as follows: three and six blocks with a combination of A (mobilization), B (motion mobilization) and C (control) will be the criteria. Depending on the different combinations, each of the blocks is assigned a number as follows: Block 1: BCAACB Block 2: BAACCB Block 3: ABC Block 4: ACBCAB Block 5: CBABCA Block 6: ABBCAC Block 7: ABBACC Block 8: ACBBAC Block 9: CBA Block 10: ABCACB Using a table of random numbers, considering the numbers 1 to 9 in the unit and considering the number zero as the tenth block, select the order of the blocks and how to assign patients to one of the groups A, B or C according to the selected blocks of the face. Takes. After preparing a randomization list for each patient, they will have a number in the order of enrollment (from 1 to 51). A sealed envelope is provided with A, B, or C written inside the envelope based on the compiled list. The researcher who does not know the main list, after registering the person entered to study and check the number of the person, opens the relevant envelope and realizes the type of intervention based on the contents of the envelope.In this way, the researcher realizes the type of intervention only after the patient enters the study and determines her eligibility, by opening the envelope, and finally we will have three balanced groups.
**Blinding (investigator's opinion)**
Double blinded
**Blinding description**
Participants are divided into three groups by general matching and randomly using random and double-blind blocking methods. Participants and evaluators do not know the division. All evaluations and measurements of the results are performed by an experienced person who has no knowledge of grouping individuals. The control group will receive each of the desired treatments within two weeks of their choice.
**Placebo**
Not used
**Assignment**
Parallel
**Other design features**

## Secondary Ids

empty

## Ethics committees

### 1

**Ethics committee**
**Name of ethics committee**
Research Ethics Committees of Semnan University Of Medical Sciences
**Street address**
Semnan University of Medical Sciences and Health Services, Basij Blvd.
**City**
Semnan
**Province**
Semnan
**Postal code**
99951- 35198
**Approval date**
2021-10-26, 1400/08/04
**Ethics committee reference number**
IR.SEMUMS.REC.1400.189

## Health conditions studied

### 1

**Description of health condition studied**
Primary Shoulder impingement syndrome

**ICD-10 code**
M75.4
**ICD-10 code description**
Impingement syndrome of shoulder

## Primary outcomes

### 1

**Description**
Acromiohumeral distance (AHD)
**Timepoint**
At baseline and after the end of treatment (2 week)
**Method of measurement**
AHD measurement method using ultrasonography

### 2

**Description**
Functional Status and Symptom Severity of shoulder
**Timepoint**
At baseline and after the end of treatment (2 week)
**Method of measurement**
Using Shoulder Pain and Disability Index (SPADI)

### 3

**Description**
Pain severity
**Timepoint**
At baseline and after the end of treatment (2 week)
**Method of measurement**
Visual Analogues Scale (VAS)

## Secondary outcomes

empty

## Intervention groups

### 1

**Description**
Intervention group: Mobilization exercises (mobilization) for 6 sessions (3 times a week). In this group, mobilization techniques for the glenohumeral joint are performed by a training therapist and individuals three times a week for 3 weeks under his supervision. Are treated (21) .Then in each person four separate techniques including Inferior glide, posterior glide, anterior glide and lateral glide are used (Figure 1). The physiotherapist applies oscillating pressure for 2 to 3 oscillations per second. Grade III and IV apply. Each technique is performed 4 times (30 seconds each) (21).
**Category**
Rehabilitation

### 2

**Description**
Intervention group: In this group, the patient sits at the edge of the table. The patient's arms should rotate outward while performing the abduction. The therapist stands behind the patient on the healthy shoulder and holds the scapular with one hand. The protrusion of the other hand is located on the anterior part of the head of Homer (Figure 2) (48). Motion Animation (MVM) for 6 sessions (3 times a week): Three sets consisting of 10 repetitions and each repetition takes 4 seconds (Figure 2). For each person, the mobilization technique is used as Inferior, posterior, anterior and lateral (14,38).
**Category**
Rehabilitation

### 3

**Description**
Control group: The control group does not receive any intervention for 2 weeks.
**Category**
Rehabilitation

## Recruitment centers

### 1

**Recruitment center**
**Name of recruitment center**
Tabatabai Clinic
**Full name of responsible person**
Zohre Shokrian Tosi
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## Sponsors / Funding sources

### 1

**Sponsor**
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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**

Semnan 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**

Semnan University of Medical Sciences

**Full name of responsible person**

Zohreh Shokrian Tosi

**Position**

Student

**Latest degree**

Bachelor

**Other areas of specialty/work**

Physiotherapy

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## Person responsible for updating data

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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