

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

02 Jul 2026

### Evaluation of the effect of scapulothoracic joint mobilization on pain intensity, pinch strength and upper limb function in patients with mechanical neck pain

#### Protocol summary

##### Summary

Evidences show a strong association between chronic neck and shoulder pain and scapular dysfunction. The objective of this study is evaluation of the effect of scapulothoracic joint mobilization on pain intensity, maximal pinch and grip strength and upper limb function in patients with mechanical neck pain. Inclusion criteria are: neck disability index between 10 to 45 percent; duration of the involvement more than three months; the scapular dyskinesia. Exclusion criteria are: History of whiplash injury; Surgery in the neck or upper limb and cervical Radiculopathy. This study is a single blinded randomized clinical trial. The sample size is 46 (23 patients in each group). The Patients who referred to the physiotherapy clinic of Shiraz school of rehabilitation sciences, recruited by convenience sampling method. The subjects in the control group receive routine physiotherapy and the subjects in the intervention group receive scapulothoracic joint mobilization beside routine physiotherapy. Both groups receive 5 treatment sessions in a week. Pain intensity, maximal fingers and grip strength before and immediately after the first session and at the end of the course of treatment measured by Pain Numeric Rating Scale, the Pinch Gage and dynamometer. Also functional disability of neck and upper extremity respectively will be measured with the Neck Disability Index and Disabilities of Arm, Shoulder and Hand questionnaire in two groups before and at the end of the course of treatment.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT2014100119358N1**

Registration date: **2014-12-08, 1393/09/17**

Registration timing: **registered\_while\_recruiting**

Last update:

Update count: **0**

##### Registration date

2014-12-08, 1393/09/17

##### Registrant information

###### Name

Zeinab Shirzadi

###### Name of organization / entity

Shiraz University Of Medical Sciences

###### Country

Iran (Islamic Republic of)

###### Phone

+98 71 3628 2700

###### Email address

shirzadize@sums.ac.ir

##### Recruitment status

###### Recruitment complete

##### Funding source

Shiraz University of Medical Sciences

##### Expected recruitment start date

2014-09-23, 1393/07/01

##### Expected recruitment end date

2014-12-21, 1393/09/30

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Evaluation of the effect of scapulothoracic joint mobilization on pain intensity, pinch strength and upper limb function in patients with mechanical neck pain

##### Public title

The effect of scapulothoracic joint mobilization on

treatment of patients with neck pain

## Purpose

Treatment

## Inclusion/Exclusion criteria

Inclusion criteria: Complaint of mechanical neck pain (general pain in the neck that induced with movement or constant holding of neck and palpation of the neck muscles); age between 20-50 years; neck disability index between 10 to 45 percent; duration of the involvement more than three months; incorrect position of scapula and scapular dyskinesia. Exclusion criteria: History of whiplash injury; Surgery in the neck or upper limb; serious pathology (eg malignant tumor, infection, inflammatory disorders or fracture); any disease or disorder of the central nervous system including: stroke, MS and ...; any disease of peripheral nervous system which may affect the study results such as: neuropathies, carpal tunnel syndrome, Guyan tunnel syndrome and cervical radiculopathy.

## Age

From **20 years** old to **50 years** old

## Gender

Both

## Phase

N/A

## Groups that have been masked

*No information*

## Sample size

Target sample size: **46**

## Randomization (investigator's opinion)

Randomized

## Randomization description

## Blinding (investigator's opinion)

Single blinded

## Blinding description

## Placebo

Not used

## Assignment

Parallel

## Other design features

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Shiraz University of Medical Sciences

##### Street address

Central building of Shiraz University of Medical Sciences, Zand avenue, Shiraz

##### City

Shiraz

##### Postal code

#### Approval date

2014-08-26, 1393/06/04

#### Ethics committee reference number

CT-9373-7113

## Health conditions studied

### 1

#### Description of health condition studied

Mechanical neck pain

#### ICD-10 code

M95.3

#### ICD-10 code description

Acquired deformity of neck

## Primary outcomes

### 1

#### Description

pain intensity

#### Timepoint

before and immediately after the first session and at the end of the course of treatment

#### Method of measurement

Pain Numeric Rating Scale

### 2

#### Description

maximum grip strength

#### Timepoint

before and immediately after the first session and at the end of the course of treatment

#### Method of measurement

Newton scale with digital dynamometer

### 3

#### Description

pinch strength

#### Timepoint

before and immediately after the first session and at the end of the course of treatment

#### Method of measurement

Newton scale with Pinch Gage

### 4

#### Description

Disability of upper limb

#### Timepoint

before and after intervention

#### Method of measurement

Disabilities of Arm, Shoulder and Hand questionnaire

### 5

#### Description

Disability of neck

#### Timepoint

before and after intervention

#### Method of measurement

Neck Disability Index

## Secondary outcomes

empty

## Intervention groups

### 1

#### Description

Intervention group: In the intervention group patients receive routine physical therapy treatment protocol for neck pain for 5 sessions over a week. The routine physical therapy treatment protocol contained: Transcutaneous electrical nerve stimulation: conventional mode, frequency 100 Hz, tolerable intensity for 20 min over the pain site; Hot pack: for 20 minutes on the neck; exercise therapy: - the patient place both hands on the forehead and press the forehead into the palms while not moving. - The patient press the back of the head into both hands. - the patient press one hand against the side of the head and attempt to side-bend, as if trying to bring the ear toward the shoulder but not allowing motion, this exercise done for both left and right side. Each patient does exercises 20 times in a day and holds contraction to 6 seconds. The intensity of the contraction must be maximum; scapulothoracic joint mobilization: In intervention group, mobilization techniques applied in the direction of the limited movements of scapula (Retraction, Depression, Elevation, Upward Rotation and Downward Rotation). Patient sleeps on the sound side, close to the edge of the bed. Her head is on the pillow and hips and knees are bent. The therapist stands in front of the patient's hip and bends on it, so that the patient's ileum taken by therapist's axilla. Then each of the techniques done on the intervention group. These techniques applied Sustained with grade 4. Each technique consists of 10 sets of 10 repetitions with 30 seconds rest between each set. Each movement hold 5 seconds and there are 3 seconds rest between each movement in each set. Patients in intervention group receive 5 sessions scapulothoracic joint mobilization in a week.

#### Category

Rehabilitation

### 2

#### Description

Control group: In the control group patients receive routine physical therapy treatment protocol for neck pain for 10 sessions over a week. The routine physical therapy treatment protocol contained: Transcutaneous electrical nerve stimulation: conventional mode, frequency 100 Hz, tolerable intensity for 20 min over the pain site; Hot pack: for 20 minutes on the neck; exercise therapy: - the patient place both hands on the forehead and press the forehead into the palms while not moving. - The patient press the back of the head into both hands. - the patient press one hand against the side of the head and attempt to side-bend, as if trying to bring the ear toward the shoulder but not allowing motion, this exercise done for both left and right side. Each patient does exercises 20 times in a day and holds contraction to 6 seconds. The

intensity of the contraction must be maximum. Control group receive 5 treatment sessions in a week.

#### Category

Rehabilitation

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

School of Rehabilitation Sciences

##### Full name of responsible person

Dr. Zahra Rojhani Shirazi

##### Street address

Abiverdi 1 Avenue, Chamran Blvd, Shiraz, Fars

##### City

Shiraz

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Shiraz University of Medical Sciences

##### Full name of responsible person

Dr. Seyed Basir Hashemi

##### Street address

Central building of Shiraz University of Medical Sciences, Zand avenue, Shiraz

##### City

Shiraz

#### Grant name

#### Grant code / Reference number

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

Yes

#### Title of funding source

Shiraz University of Medical Sciences

#### Proportion provided by this source

100

#### Public or private sector

empty

#### Domestic or foreign origin

empty

#### Category of foreign source of funding

empty

#### Country of origin

#### Type of organization providing the funding

empty

## Person responsible for general inquiries

#### Contact

##### Name of organization / entity

Shiraz University of Medical Sciences

##### Full name of responsible person

Zeinab Shirzadi

##### Position

Student

##### Other areas of specialty/work

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**Full name of responsible person**

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**Position**

Ph.D

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Zeinab Shirzadi

**Position**

Student

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**Web page address****Sharing plan****Deidentified Individual Participant Data Set (IPD)**

*empty*

**Study Protocol**

*empty*

**Statistical Analysis Plan**

*empty*

**Informed Consent Form**

*empty*

**Clinical Study Report**

*empty*

**Analytic Code**

*empty*

**Data Dictionary**

*empty*