

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

03 Jul 2026

### The effect of integrated neuromuscular inhibition technique on trigger points pain threshold in patients with neck and shoulder muscles trigger points

#### Protocol summary

##### Summary

Purpose of study: The effect of integrated neuromuscular inhibition technique on pain threshold of neck and shoulder muscles trigger points; just interventional group; without control group; not blinded; without placebo; Inclusion criteria: age: 20-40 y/o - presenting active myofascial trigger points in neck and shoulder muscles with pain recognition when pressure applied; Exclusion criteria: previous neck surgery(during last year) - cervical radiculopathy - participants with fibromyalgia syndrome; Target sample size:15; Intervention: integrated neuromuscular inhibition technique; Material and methods: All subjects provided informed consent before enrollment in the study. Active myofascial trigger points in neck and shoulder muscles recognized in prone position. A visual analog scale(VAS) was used to grade their level of neck pain and algometer to grade pressure pain threshold. The subjects were placed in supine position with small towel roll under their neck to reduce tension in the upper trapezius muscle. The following three techniques applied in sequential order: Ischemic compression: Pressure applied through the thumb of physical therapist directly on myofascial trigger points to produce tolerable pain. The pressure applied sustained and progressively increased by reinforcing with the thumb or finger of the other hand until tissue resistance is encountered. Contact was maintained till the tissue barrier was released and pressure was maintained to 90 s. The procedure was repeated three times per session. Strain counter strain: The pressure was maintained without complaints of referred pain pattern. Patient's head was passively laterally flexed towards the affected side. The therapist then held forearm and moved the affected side shoulder passively to approximately 90 degree of abduction, while monitoring the tender point pain with the other hand. Then the fine tuning was made with slight flexion or

extension of the shoulder so that maximum ease was achieved. It was held for 20-30 s and repeated for three repetitions per session. Muscle Energy Technique(MET): The patient in supine position was asked to take the stabilized shoulder towards the ear (a shrug movement) and the ear towards the shoulder. The degree of contraction was mild and pain free (20% of maximum voluntary contraction). The contraction was sustained for 10 seconds. The therapist gently eased the head/neck into an increased degree of side bending and flexion to unaffected side and rotation to affected side. The stretch was maintained for 30 seconds and repeated for three repetitions per session. After applying technique, visual analog scale(VAS) was used to grade their level of neck pain and algometer to grade pressure pain threshold. One day after treatment visual analog scale(VAS) was used to grade their level of neck pain and algometer to grade pressure pain threshold. Treatment applied in one day. One day after treatment reassessment done. Outcome: Maybe pain of trigger points decrease or pressure pain threshold increase.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT201412129440N8**

Registration date: **2015-09-12, 1394/06/21**

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

Last update:

Update count: **0**

##### Registration date

2015-09-12, 1394/06/21

##### Registrant information

##### Name

Soraya Pirouzi

##### Name of organization / entity

School of Rehabilitation Sciences, Shiraz University of Medical Sciences

**Country**

Iran (Islamic Republic of)

**Phone**

+98 71 1626 5108

**Email address**

piroozis@sums.ac.ir

**Recruitment status**

**Recruitment complete**

**Funding source**

Vice chancellor for research, Shiraz University of Medical Sciences

**Expected recruitment start date**

2015-09-12, 1394/06/21

**Expected recruitment end date**

2015-09-15, 1394/06/24

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

The effect of integrated neuromuscular inhibition technique on trigger points pain threshold in patients with neck and shoulder muscles trigger points

**Public title**

The effect of combined physiotherapy technique on pain of neck and shoulder muscles painful points

**Purpose**

Treatment

**Inclusion/Exclusion criteria**

Inclusion criteria: age: 20-40 y/o ; presenting active myofascial trigger points in neck and shoulder muscles with pain recognition when pressure applied: Exclusion criteria: previous neck surgery(during last year) ; cervical radiculopathy ; participants with fibromyalgia syndrome

**Age**

From **20 years** old to **40 years** old

**Gender**

Female

**Phase**

2-3

**Groups that have been masked**

*No information*

**Sample size**

Target sample size: **15**

**Randomization (investigator's opinion)**

N/A

**Randomization description****Blinding (investigator's opinion)**

Not blinded

**Blinding description****Placebo**

Not used

**Assignment**

Single

**Other design features****Secondary Ids**

empty

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

Ethic committee of Shiraz university of medical science

**Street address**

Central bulding of Shiraz university of medical science, Zand street, Shiraz

**City**

Shiraz

**Postal code**

14336 - 71348

**Approval date**

2015-08-19, 1394/05/28

**Ethics committee reference number**

94-01-06-9808-55791

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

Trigger points pain

**ICD-10 code**

M70.8

**ICD-10 code description**

Other soft tissue disorders related to use, overuse and pressure

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

Pain intensity

**Timepoint**

Before treatment, After treatment, One day after treatment

**Method of measurement**

Visual analogue scale

**2****Description**

Pressure pain threshold

**Timepoint**

Before treatment, After treatment, One day after treatment

**Method of measurement**

Algometer

## Secondary outcomes

empty

## Intervention groups

1

### Description

Integrated neuromuscular inhibition technique in interventional group (no control group)

### Category

Treatment - Other

## Recruitment centers

1

### Recruitment center

#### Name of recruitment center

Physiotherapy clinic of School of Rehabilitation Sciences, Shiraz

#### Full name of responsible person

Soraya Pirouzi

#### Street address

School of Rehabilitation Sciences, Abiverdi1 street, Shiraz

#### City

Shiraz

## Sponsors / Funding sources

1

### Sponsor

#### Name of organization / entity

Vice chancellor for research, Shiraz University of Medical Sciences

#### Full name of responsible person

Dr Seyyed Basir Hashemi

#### Street address

Central bulding of Shiraz university of medical science, Zand street, Shiraz

#### City

Shiraz

### Grant name

### Grant code / Reference number

-

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

Yes

### Title of funding source

Vice chancellor for research, 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

School of Rehabilitation Sciences, Shiraz

#### Full name of responsible person

Soraya Pirouzi

#### Position

Faculty member

#### Other areas of specialty/work

#### Street address

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Bachelor student

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**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*