

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

01 Jul 2026

### Effects of positional release and passive shortening techniques on pain and muscle thickness in people with latent trigger points

#### Protocol summary

##### Study aim

Effects of positional release and passive shortening techniques on pain and muscle thickness in people with latent trigger points

##### Design

Clinical trial with control group, with parallel groups, single-blind, randomized, on 42 patients. Random allocation software was used for randomization.

##### Settings and conduct

Participants in the study are divided into two groups of intervention and control using a computer randomization program. The study is conducted blindly and the evaluator does not know what group each person belongs to. Everyone attends three sessions a week and is re-evaluated one week after the third session. Evaluation of the effects of treatment using VAS and muscle thickness is performed by another physiotherapist.

##### Participants/Inclusion and exclusion criteria

The presence of a latent trigger point in the right or left upper trapezius muscle (if both sides are involved, the selection will be random) Having a minimum pain of 3 and a maximum of 7 on the visual scale of pain during the application of force 2.5 kg / cm<sup>2</sup> by the algometer

##### Intervention groups

Control group: People for whom PRT technique is performed. Intervention group: People for whom MPMS technique is performed.

##### Main outcome variables

thickness of the upper trapezius muscle pain of the upper trapezius muscle pain pressure threshold of the upper trapezius muscle

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20151007024412N5**

Registration date: **2022-11-27, 1401/09/06**

Registration timing: **prospective**

Last update: **2022-11-27, 1401/09/06**

Update count: **0**

##### Registration date

2022-11-27, 1401/09/06

##### Registrant information

###### Name

Sakineh Goljaryan

###### Name of organization / entity

Tabriz University of Medical Sciences

###### Country

Iran (Islamic Republic of)

###### Phone

+98 41 3335 5921

###### Email address

goljaryan@tbzmed.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2022-12-01, 1401/09/10

##### Expected recruitment end date

2023-03-01, 1401/12/10

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Effects of positional release and passive shortening techniques on pain and muscle thickness in people with latent trigger points

##### Public title

Thickness changes in myofascial pain syndrome

#### **Purpose**

Treatment

#### **Inclusion/Exclusion criteria**

##### **Inclusion criteria:**

Minimum age 18 and maximum 35 The presence of a latent trigger point in the right or left upper trapezius muscle (if both sides are involved, the selection will be random) Having a minimum pain of 3 and a maximum of 7 on the visual scale of pain during the application of force 2.5 kg / cm<sup>2</sup> by the algometer BMI between 20-25 Being a non-athlete

##### **Exclusion criteria:**

Having a history of radiculopathy or myelopathy of the neck with the diagnosis of a specialist Fibromyalgia syndrome diagnosed by a specialist doctor History of neck and shoulder surgery during the past year Trigger point treatment in the last month Existence of sensory disturbance in trapezoidal area Having a history of Whiplash injury Acute upper trapezius muscle injury in the last 6 days

#### **Age**

From **18 years** old to **35 years** old

#### **Gender**

Male

#### **Phase**

N/A

#### **Groups that have been masked**

- Investigator
- Outcome assessor
- Data analyser
- Data and Safety Monitoring Board

#### **Sample size**

Target sample size: **42**

More than 1 sample in each individual

Number of samples in each individual: **21**

21 people in the control group and 21 people in the intervention group

#### **Randomization (investigator's opinion)**

Randomized

#### **Randomization description**

Randomization is performed by someone outside the research team using the 1: 1 parallel allocation method. A computer randomization program is used to assign participants to groups, using blocks of four and six. Matte sealed envelopes are then used and concealment is done by assigning groups using the pre-labeled letters A and B.

#### **Blinding (investigator's opinion)**

Single blinded

#### **Blinding description**

The study will done in a blind way and the evaluator does not know which group each person is in. First, preliminary evaluations including muscle thickness, PPT and VAS are performed by the examiner. After the evaluations are completed, therapeutic techniques are applied based on the group that each person is randomly placed in, by another person (therapist) and without the knowledge of the evaluating person (examiner). Immediately after the completion of the technique, the

evaluations will be done again by the examiner.

#### **Placebo**

Not used

#### **Assignment**

Parallel

#### **Other design features**

### **Secondary Ids**

empty

### **Ethics committees**

#### **1**

##### **Ethics committee**

###### **Name of ethics committee**

Ethics committee of Tabriz University of Medical Sciences

###### **Street address**

29 Bahman street - Tabriz University - Faculty of Rehabilitation Sciences

###### **City**

Tabriz

###### **Province**

East Azarbaijan

###### **Postal code**

5166616471

##### **Approval date**

2022-08-29, 1401/06/07

##### **Ethics committee reference number**

IR.TBZMED.REC.1401.486

### **Health conditions studied**

#### **1**

##### **Description of health condition studied**

Myofascial pain syndrome

##### **ICD-10 code**

M62.9

##### **ICD-10 code description**

Disorder of muscle, unspecified

### **Primary outcomes**

#### **1**

##### **Description**

thickness of the upper trapezius muscle

##### **Timepoint**

Before the start of the intervention, immediately after the intervention, 2 days after the first session, 9 days after the first session

##### **Method of measurement**

sonography

#### **2**

##### **Description**

Pain

##### **Timepoint**

Before the start of the intervention, immediately after the intervention, 2 days after the first session, 9 days after the first session

**Method of measurement**

Visual Analogue Scale

**3**

**Description**

pain pressure threshold

**Timepoint**

Before the start of the intervention, immediately after the intervention, 2 days after the first session, 9 days after the first session

**Method of measurement**

pressure algometry

**Secondary outcomes**

empty

**Intervention groups**

**1**

**Description**

Intervention group: Manual Passive Muscle Shortening technique: The person sleeps on his back and a pillow is placed under his abdomen. The therapist stands on the involved side and brings the beginning and end of the involved upper trapezius muscle (the periphery of the sixth cervical vertebra and the acromion appendage) closer together using the web of his hands and shortens the muscle. This position is maintained for 90 seconds and finally the muscle is slowly released and returns to its original position. These steps are repeated three times.

**Category**

Treatment - Other

**2**

**Description**

Control group: Positional release. The patient sleeps on the vault and the therapist stands on the involved side. Then with his finger, he applies some pressure on the trigger point that has the most pain (A) and asks the person to keep in mind the amount of pain caused by this pressure. The person's head bends towards the trigger point. Then the therapist takes the person's hand and takes the person's shoulder to about 90 degrees of abduction and slowly moves the hand in different planes in search of the ideal position. After finding the ideal position (minimum 70% reduction of pain at the desired point), while the therapist's finger is placed on the painful point without pressure, the person's hand and shoulder are kept in that position for 90 seconds. Finally, the person's body is passively returned to its original state and these steps are repeated three times.

**Category**

Treatment - Other

**Recruitment centers**

**1**

**Recruitment center**

**Name of recruitment center**

Tabriz University of Medical Sciences

**Full name of responsible person**

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**Sponsors / Funding sources**

**1**

**Sponsor**

**Name of organization / entity**

Tabriz University of Medical Sciences

**Full name of responsible person**

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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**

Tabriz 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**

## Person responsible for general inquiries

### Contact

**Name of organization / entity**

Tabriz University of Medical Sciences

**Full name of responsible person**

Sakineh Goljaryan

**Position**

assistant professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physiotherapy

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## Person responsible for scientific inquiries

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## Person responsible for updating data

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**Latest degree**

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**Other areas of specialty/work**

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## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

**Justification/reason for indecision/not sharing IPD**

Although the data is non-identifying of the participants, only the statistical results obtained from the data are published, and they are not published in order to prevent other people from copying and creating data.

**Study Protocol**

Yes - There is a plan to make this available

**Statistical Analysis Plan**

Not applicable

**Informed Consent Form**

Yes - There is a plan to make this available

**Clinical Study Report**

Not applicable

**Analytic Code**

Not applicable

**Data Dictionary**

Not applicable

**Title and more details about the data/document**

All statistical results from the data are published in congresses and articles.

**When the data will become available and for how long**

After completing the study and printing the results

**To whom data/document is available**

The general public and researchers and academics

**Under which criteria data/document could be used**

It is allowed by experts and for use in treatment.

**From where data/document is obtainable**

Journals in which the results have been published.

Project manager: Dr. Sakineh Goljaryan.  
**What processes are involved for a request to access data/document**

By sending an email  
**Comments**