

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

09 Jun 2026

### The effect of dry needling on muscle activity pattern and scapulohumeral rhythm in patients with active myofascial trigger points in the upper trapezius muscle

#### Protocol summary

##### Study aim

The effect of dry needling on muscle activity pattern and scapulohumeral rhythm in patients with active myofascial trigger point in the upper trapezius muscle

##### Design

A clinical trial with one patient group sample size: 11 people

##### Settings and conduct

Project location: Tarbiat Modares University, medical school Identify the AMTrP: the presence of a taut band, the local twitch response, the presence of at least one hypersensitive tender point on the taut band, the spontaneous referral pain pattern. first session: evaluate muscle activity and scapulohumeral rhythm using EMG and Motion analysis. Dry needling will be performed 5 sessions for individuals. 2 days after the end of treatment sessions, the second evaluation session is performed. The second evaluation session, the same parameters of the first session will be repeated. A group of healthy individuals will be evaluated to assess normal scapulohumeral rhythm and pattern of normal muscle activity. since the markers of the motion analysis are attached to the skin at rest position, to examine the correlation between the accuracy of the motion analysis and manual measurement, on healthy people at 60, 90 and 120 degrees of arm scaption, We measure the upward rotation of scapula by hand and with the device, and finally the correlation between the two measurement methods will be calculated.

##### Participants/Inclusion and exclusion criteria

Individuals have a history of recurrent pain caused by active trigger points in the upper trapezius muscle on the dominant side for at least one year with VAS 1- 5; needle phobia, history of epilepsy, depression, migraine, and any mental health disorder, coagulation and vascular diseases

##### Intervention groups

Dry needling for people with myofascial trigger points in the upper trapezius muscle

##### Main outcome variables

Muscle activity pattern Scapulohumeral rhythm

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20220314054286N1**

Registration date: **2022-04-26, 1401/02/06**

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

Last update: **2022-04-26, 1401/02/06**

Update count: **0**

##### Registration date

2022-04-26, 1401/02/06

##### Registrant information

##### Name

Maliheh Rahmati

##### Name of organization / entity

The University of Tarbiat modares

##### Country

Iran (Islamic Republic of)

##### Phone

+98 21 8288 3819

##### Email address

maliheh.rahmati@modares.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2022-04-04, 1401/01/15

##### Expected recruitment end date

2022-07-21, 1401/04/30

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

The effect of dry needling on muscle activity pattern and scapulohumeral rhythm in patients with active myofascial trigger points in the upper trapezius muscle

**Public title**

The effect of dry needling on muscle activity pattern and scapulohumeral rhythm in patients with active myofascial trigger points in the upper trapezius muscle

**Purpose**

Treatment

**Inclusion/Exclusion criteria****Inclusion criteria:**

Individuals have a history of recurrent pain caused by active trigger points of upper trapezius muscle on the dominant side for at least one year. VAS between 1-5

**Exclusion criteria:**

History of cervical trauma in the last 6 months  
Radiculopathy of cervical  
History of surgery in the shoulder and the cervical area  
History of Dry needling in cervical or treatment of MTrP in the last 6 months  
Needle phobia  
Severe postural disorder  
History of epilepsy, depression, migraine, and any mental health disorders  
Coagulation and vascular diseases based on diagnosis of medical doctor.  
Any type of orthopedic and neurological disease that affects on position of shoulder, cervical and their function.

**Age**

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

**Gender**

Both

**Phase**

N/A

**Groups that have been masked**

*No information*

**Sample size**

Target sample size: **22**

**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**

Research Ethics Committes of Tarbiat Modares University

**Street address**

No.7, Jalal AlAhmad street, Nasr, Tehran,Iran

**City**

Tehran

**Province**

Tehran

**Postal code**

1411713116

**Approval date**

2022-01-22, 1400/11/02

**Ethics committee reference number**

IR.MODARES.REC.1400.292

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

Patients with active myofascial trigger point in the upper trapezius muscle

**ICD-10 code****ICD-10 code description****Primary outcomes****1****Description**

Muscles activity pattern

**Timepoint**

Before intervention, 2 days after the end of the intervention session

**Method of measurement**

Electromyography device

**2****Description**

Scapulohumeral rhythm

**Timepoint**

Before intervention, 2 days after the end of the intervention session

**Method of measurement**

Motion analysis device

**Secondary outcomes**

empty

**Intervention groups****1****Description**

Intervention group: Dry needle( 50 ×0.25) ,The needle is inserted in trigger points perpendicularly. the needle is left in sit for 10 minutes.Dry needling is done totally 5 session, twice a week.

**Category**

Treatment - Devices

**Recruitment centers**

**1**

**Recruitment center**

**Name of recruitment center**

Physiotherapy clinic

**Full name of responsible person**

Farid Bahrpeyma

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bahrpeyf@modares.ac.ir

**Sponsors / Funding sources**

**1**

**Sponsor**

**Name of organization / entity**

The university of Tarbiat modares

**Full name of responsible person**

Amir Abdollahzadeh

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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**

The university of Tarbiat modares

**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**

The University of Tarbiat modares

**Full name of responsible person**

Farid Bahrpeyma

**Position**

Associate professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physiotherapy

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**Person responsible for scientific inquiries**

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**Name of organization / entity**

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**Web page address****Person responsible for updating data****Contact****Name of organization / entity**

The University of Tarbiat modares

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**Web page address****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**

Not applicable

**Analytic Code**

Not applicable

**Data Dictionary**

Not applicable

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

Part of the data

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

6 months after publication

**To whom data/document is available**

Researchers

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

for treatment and research goals

**From where data/document is obtainable**

Farid Bahrpeyma

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

Confirmation of advisor professors

**Comments**