

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Effect of dry needling on neuromuscular junction response and sympathetic skin response in patients with upper trapezius myofascial trigger points compared with healthy subjects

#### Protocol summary

##### Summary

Introduction: Dry needling (DN) is an effective method for the treatment of myofascial trigger points (MTrPs). The aim of the present study will be to assess the immediate neurophysiological efficacy of dry needling in patients with upper trapezius MTrPs. Methods and analysis: A prospective, controlled clinical trial is designed to include patients with upper trapezius MTrPs and volunteered healthy subjects to receive one session DN. The primary outcome measures are neuromuscular junction response (NMJR) and sympathetic skin response (SSR). The secondary outcomes are the pain intensity and the pressure pain threshold. Data will be collected at baseline and immediately after intervention.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT2013031612828N1**  
Registration date: **2013-04-04, 1392/01/15**  
Registration timing: **registered\_while\_recruiting**

Last update:

Update count: **0**

##### Registration date

2013-04-04, 1392/01/15

##### Registrant information

###### Name

Maryam Abbaszadeh-Amirdehi

###### Name of organization / entity

Tehran University of Medical Sciences

###### Country

Iran (Islamic Republic of)

###### Phone

+98 21 2222 1577

##### Email address

abbaszadeh\_m@razi.tums.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

Tehran University of Medical Sciences

##### Expected recruitment start date

2013-04-04, 1392/01/15

##### Expected recruitment end date

2013-06-04, 1392/03/14

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Effect of dry needling on neuromuscular junction response and sympathetic skin response in patients with upper trapezius myofascial trigger points compared with healthy subjects

##### Public title

The neurophysiological effects of dry needling in patients with upper trapezius myofascial trigger points

##### Purpose

Treatment

##### Inclusion/Exclusion criteria

Inclusion criteria: subjects with aged between 20 and 40 year old; upper trapezius active Myofascial trigger points (MTrPs). Exclusion criteria: subjects less than 20 years and more than 40 years; subjects with a history of other shoulder or spinal disorders; neck and upper extremity surgery; acute disease; muscle diseases; neurological or systemic disorder (such as lupus erythematus, scleroderma); epilepsy; pregnancy; using sedative drugs; needle phobia; bleeding disorder; anticoagulant

medication; previous experience with dry needling for myofascial pain; Skin lesion and infection or inflammatory oedema at MTrPs.

#### 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: **30**

#### Randomization (investigator's opinion)

Not randomized

#### Randomization description

#### Blinding (investigator's opinion)

Not blinded

#### Blinding description

#### Placebo

Not used

#### Assignment

Single

#### Other design features

This study is a controlled clinical trial designed to investigate the effectiveness of dry needling on neuromuscular junction response and sympathetic outflow in patients with upper trapezius MTrPs compared with healthy individual matched group.

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Tehran University of Medical Sciences

##### Street address

Tehran University of Medical Sciences, Enghelab Ave.,  
Tehran, Iran

##### City

Tehran

##### Postal code

1417614411

#### Approval date

2012-09-17, 1391/06/27

#### Ethics committee reference number

2185

## Health conditions studied

### 1

#### Description of health condition studied

myofascial trigger point

#### ICD-10 code

M00-M99

#### ICD-10 code description

Diseases of the musculoskeletal system and connective tissue

## Primary outcomes

### 1

#### Description

Neuromuscular Junction Response (NMJR)

#### Timepoint

before intervention and immediately after intervention

#### Method of measurement

Electrodiagnostic technique of repetitive nerve stimulation (RNS) in trapezius muscle

### 2

#### Description

Sympathetic Skin Response (SSR)

#### Timepoint

before intervention and immediately after intervention

#### Method of measurement

stimulus over the median nerve at the wrist and records on the palm of the hand

## Secondary outcomes

### 1

#### Description

Pain Intensity

#### Timepoint

before intervention and immediately after intervention

#### Method of measurement

Pain intensity will be self rated by subjects on a 0-10 numerical rating scale with 0 representing no pain and 10 representing the worst imaginable pain

### 2

#### Description

Pressure Pain Threshold

#### Timepoint

before intervention and immediately after intervention

#### Method of measurement

; by use a pressure algometer According to Kilogram per square centimeter

## Intervention groups

### 1

#### Description

The sterile acupuncture needles of 0.30 mm diameter and 50 mm long will be used for both groups. The needle will be inserted into the skin over the palpated trigger point and will be advanced until it reaches the trigger point. Each trigger point will be repeatedly needled for 1 - 2 minutes.

#### Category

Treatment - Other

## 2

### Description

The sterile acupuncture needles of 0.30 mm diameter and 50 mm long will be used. The needle will be inserted into the skin over the Trigger Point equivalent of upper trapezius in healthy subjects. Each point will be repeatedly needed for 1 – 2 minutes.

### Category

Treatment - Other

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Electrophysiology center of School of Rehabilitation, Tehran University of Medical Sciences

##### Full name of responsible person

Maryam Abbaszadeh-Amirdehi

##### Street address

School of Rehabilitation of Tehran University of Medical Sciences, Mirdamad Blv, Shahnazari St, Nezam St, Tehran, Iran

##### City

Tehran

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Tehran University of Medical Sciences

##### Full name of responsible person

Dr. Mansouri

##### Street address

Tehran University of Medical Sciences, Enghelab Ave., Tehran, Iran

##### City

Tehran

##### Grant name

##### Grant code / Reference number

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

Yes

##### Title of funding source

Tehran 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

Tehran University of Medical Sciences

#### Full name of responsible person

Maryam Abbaszadeh-Amirdehi

#### Position

PhD candidate of physiotherapy

#### Other areas of specialty/work

#### Street address

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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*