

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

11 Sep 2026

### A comparison between muscle energy technique with low-level laser in reducing neck and shoulder pain and disability in subjects with trapezius and levator scapula myofascial trigger points

#### Protocol summary

##### Summary

This study aimed to compare the effects of muscle energy technique with low-level laser on reducing neck and shoulder pain and disability in patients with myofascial trigger points in upper trapezius and levator scapula. This double-blind randomized controlled trial was performed in Zahedan University of Medical Sciences, in 2009. Thirty patients with trigger points in upper trapezius and levator scapula were participated through simple non probability sampling. Patients were randomly assigned to one of three groups, 10 in each group: including muscle energy technique, low-level laser, and placebo groups. In laser group, a low-level Ga-As laser was applied with 5 KHz frequency, a 100 mW point probe (average power), wavelength 905 nm, pulse duration 200 ns, 6 J/cm<sup>2</sup> dosages per minute, for 3 minutes duration. In muscle energy group, we used stretching after post\_ isometric relaxation. Placebo group treated using low-level laser without output. A 10 session treatment program, during two weeks, five sessions per week was performed for all groups. Before and after intervention, we assessed neck disability with Neck Disability Index, neck pain with Visual Analogue Scale and shoulder pain and disability with Shoulder Pain and Disability Index and cervical ranges of motion with specific neck goniometer.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT201011281675N3**

Registration date: **2011-01-20, 1389/10/30**

Registration timing: **retrospective**

Last update:

Update count: **0**

##### Registration date

2011-01-20, 1389/10/30

##### Registrant information

###### Name

Asghar Akbari

###### Name of organization / entity

Zahedan University of Medical Sciences

###### Country

Iran (Islamic Republic of)

###### Phone

+98 54 1322 8445

###### Email address

akbaria@zdmu.ac.ir

##### Recruitment status

###### Recruitment complete

##### Funding source

Zahedan University of Medical Sciences

##### Expected recruitment start date

2009-04-06, 1388/01/17

##### Expected recruitment end date

2009-12-21, 1388/09/30

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

A comparison between muscle energy technique with low-level laser in reducing neck and shoulder pain and disability in subjects with trapezius and levator scapula myofascial trigger points

##### Public title

A comparison between muscle energy technique with low-level laser in reducing neck and shoulder pain and

disability in subjects with trapezius and levator scapula myofascial trigger points

1411/3030

## **Purpose**

Treatment

## **Inclusion/Exclusion criteria**

Inclusion criteria: Age between 18-25, having trigger point in trapezius and levator scapula muscles with main complaint: muscle pain without neurological sign, no history of respiratory diseases, surgery, and neck & thoracic spine structural disorders. Exclusion criteria: no completion of the treatment, using other therapeutic modalities during study, trauma and surgery during the study.

## **Age**

From **18 years** old to **25 years** old

## **Gender**

Both

## **Phase**

N/A

## **Groups that have been masked**

*No information*

## **Sample size**

Target sample size: **30**

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

Randomized

## **Randomization description**

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

Double blinded

## **Blinding description**

## **Placebo**

Used

## **Assignment**

Parallel

## **Other design features**

## **Secondary Ids**

### **1**

#### **Registry name**

no registration

#### **Secondary trial Id**

no trial id

#### **Registration date**

empty

## **Ethics committees**

### **1**

#### **Ethics committee**

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

Tehran Payam-e- Noor University

##### **Street address**

No 233, Cross of Sepand, Shahid nejatollahi St.,

##### **City**

Tehran

##### **Postal code**

#### **Approval date**

2011-01-08, 1389/10/18

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

## **Health conditions studied**

### **1**

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

subjects with trigger points in upper trapezius and levator scapula

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

M62

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

Other soft tissue disorders

## **Primary outcomes**

### **1**

#### **Description**

Neck pain

#### **Timepoint**

Before intervention, 2 weeks after intervention

#### **Method of measurement**

Visual Analogue Scale

### **2**

#### **Description**

Neck disability

#### **Timepoint**

Before intervention, 2 weeks after intervention

#### **Method of measurement**

Neck Disability Index

### **3**

#### **Description**

Shoulder pain and disability

#### **Timepoint**

Before intervention, 2 weeks after intervention

#### **Method of measurement**

Shoulder Pain and Disability Index

### **4**

#### **Description**

Cervical ranges of motion

#### **Timepoint**

Before intervention, 2 weeks after intervention

#### **Method of measurement**

Specific neck goniometer

## **Secondary outcomes**

### **1**

#### **Description**

No secondary outcome

#### **Timepoint**

No secondary outcome

#### **Method of measurement**

No secondary outcome

## Intervention groups

### 1

#### Description

A low-level Ga-As laser was applied with 5 KHz frequency, a 100 mW point probe (average power), wavelength 905 nm, pulse duration 200 ns, 6 J/cm<sup>2</sup> dosages per minute, for 3 minutes duration

#### Category

Rehabilitation

### 2

#### Description

Muscle energy technique: stretching after post\_ isometric relaxation.

#### Category

Rehabilitation

### 3

#### Description

low-level laser without output

#### Category

Rehabilitation

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Razmejo-Moghadam physiotherapy clinic, Zahedan

##### Full name of responsible person

Dr. Asghar Akbari

##### Street address

Razmejo-Moghadam Laboratory, School of Rehabilitation Sciences, Zahedan University of Medical Sciences, Ayatoallah Kafami St.

##### City

Zahedan

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Zahedan University of Medical Sciences

##### Full name of responsible person

Dr. Asghar Akbari

##### Street address

Zahedan University of Medical Sciences, School of Rehabilitation Sciences, Razmejo-Moghadam Laboratory, Ayatoallah Kafami St.

##### City

Zahedan

##### Grant name

##### Grant code / Reference number

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

Yes

#### Title of funding source

Zahedan 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

Zahedan University of Medical Sciences

##### Full name of responsible person

Dr. Asghar Akbari

##### Position

Associate Professor, Head of Dept. of Physiotherapy, PhD, Deputy of education and research of school

##### Other areas of specialty/work

##### Street address

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##### Web page address

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## Person responsible for scientific inquiries

#### Contact

##### Name of organization / entity

Zahedan University of Medical Sciences

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##### Position

Associate Professor, PhD of physiotherapy

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##### Street address

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**Person responsible for updating data**

**Contact**

**Name of organization / entity**

Zahedan University of Medical Sciences

**Full name of responsible person**

Dr. Asghar Akbari

**Position**

Associate Professor, Head of Dept. of Physiotherapy,  
PhD of physiotherapy

**Other areas of specialty/work**

**Street address**

Department of Physiotherapy, School of Rehabilitation  
Sciences, Razmejo-Moghadam Laboratory, Ayatoallah  
Kafami St.

**City**

Zahedan

**Postal code**

**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*