

Clinical Trial Protocol

Iranian Registry of Clinical Trials

09 Jun 2026

Effect of fatigue on neck joint position sense, pressure pain threshold and pain intensity in trigger point of upper trapezius muscle

Protocol summary

Summary

After assessment of UT muscle, the TrP has been merkered. The electrode will be positioned 2 cm lateral to the midpoint of the line between the C7 spinous process and the acromion. During sustained contractions of the trapezius, the subjects were asked to perform a shoulder elevation against the force transducers with the arms hanging passively alongside the body. A measurement started with a maximum voluntary contraction force (MVC) of the trapezius. In this case, the subjects were asked to perform a dominant shoulder elevation against the force transducer with as much force as possible for at least 10 sec. This procedure was repeated three times with in-between breaks of 20 s. If the highest force was measured in the last MVC contraction, an additional contraction was performed. The maximum number of MVC contractions was limited to three. The highest measured force level was assumed to be the MVC of the trapezius. Again the highest force value was considered to be the MVC. After a break of 5 min, a sustained submaximal contraction of the trapezius was performed. The subjects were asked to sustain a bilateral 80% MVC isometric shoulder elevation until the force gauge monitor showed 50% of MVC. The force level corresponding to 80% of the MVC was chosen because the protocol aimed to trigger muscle fatigue. This study will be done in only one session.

General information

Acronym

Trigger Point (TrP), Upper Trapezius (UT)

IRCT registration information

IRCT registration number: **IRCT2017011426346N2**

Registration date: **2017-05-02, 1396/02/12**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2017-05-02, 1396/02/12

Registrant information

Name

Gholamreza Olyaei

Name of organization / entity

Tehran University Of Medical Science

Country

Iran (Islamic Republic of)

Phone

+98 21 7752 8469

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olyaeigh@sina.tums.ac.ir

Recruitment status

Recruitment complete

Funding source

Tehran University of Medical Sciences

Expected recruitment start date

2016-10-22, 1395/08/01

Expected recruitment end date

2017-01-19, 1395/10/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of fatigue on neck joint position sense, pressure pain threshold and pain intensity in trigger point of upper trapezius muscle

Public title

effect of fatigue on trigger point of upper trapezius muscle

Purpose

Treatment

Inclusion/Exclusion criteria

Individuals within an age range of 18 to 35 years will be accepted for both groups to minimize any confounding effects stemming from advanced degenerative alterations in the cervical spine. History of neck pain for a period of more than three months; restricted active or passive neck movement in at least one direction and score range of three to six points on an 11-point (range: 0 to 10) numerical rating scale for perceived pain intensity. The inclusion criteria for the control group (CG) will be no self-reported history of neck pain and no positive signs of cervical spine or scapular dysfunction during the physical examination.

Age

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

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **64**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethic Committee of Tehran University of Medical Sciences

Street address

ehran University of Medical Sciences, Pour Sina St, Keshavarz blvd.

City

Tehran

Postal code

Approval date

2016-10-22, 1395/08/01

Ethics committee reference number

IR.TUMS.VCR.REC.1395.803

Health conditions studied

1

Description of health condition studied

Neck pain

ICD-10 code

M79.1

ICD-10 code description

Myalgia

Primary outcomes

1

Description

Pressure pain tresold

Timepoint

immediately before and after intervention

Method of measurement

algometer

2

Description

pain intensity

Timepoint

immediately before and after intervention

Method of measurement

Visual Analoge Scale

3

Description

RMS & median frequency

Timepoint

immediately before and after intervention

Method of measurement

surface electromyography

4

Description

position sence

Timepoint

immediately before and after intervention

Method of measurement

photography

Secondary outcomes

1

Description

pain

Timepoint

immediatly before and after fatigue

Method of measurement

algometer

2

Description

Muscle Spasm

Timepoint

immediatly before and after fatigue

Method of measurement

manual assessment

Intervention groups

1

Description

Fatigue in control group subjects were asked to perform a dominant shoulder elevation against the force transducer with as much force as possible for at least 10 sec. This procedure was repeated three times with in-between breaks of 20 s. If the highest force was measured in the last MVC contraction, an additional contraction was performed. The maximum number of MVC contractions was limited to three. The highest measured force level was assumed to be the MVC of the trapezius. Again the highest force value was considered to be the MVC. After a break of 5 min, a sustained submaximal contraction of the trapezius was performed. The subjects were asked to sustain a unilateral 80% MVC isometric shoulder elevation until the force gauge monitor showed 50% of MVC in least 3 minutes.

Category

Other

2

Description

Fatigue in Internationale group subjects were asked to perform a dominant shoulder elevation against the force transducer with as much force as possible for at least 10 sec. This procedure was repeated three times with in-between breaks of 20 s. If the highest force was measured in the last MVC contraction, an additional contraction was performed. The maximum number of MVC contractions was limited to three. The highest measured force level was assumed to be the MVC of the trapezius. Again the highest force value was considered to be the MVC. After a break of 5 min, a sustained submaximal contraction of the trapezius was performed. The subjects were asked to sustain a unilateral 80% MVC isometric shoulder elevation until the force gauge monitor showed 50% of MVC in least 3 minutes.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

School Of Rehabilitation, Tehran University of Medical Sciences

Full name of responsible person

Roya Mehdikhani

Street address

School Of Rehabilitation, Piche Shemroon, Enghelab street, Tehran

City

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Research Department of Tehran University of Medical Sciences

Full name of responsible person

Dr. Masoud Yunesian

Street address

Tehran University of Medical Sciences, Ghods Street, Keshavarz Blv

City

Tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Research Department of 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, School of Rehabilitation

Full name of responsible person

Dr Gholamreza Olyaei

Position

Professor

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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