

# **Effects of Diaphragm Muscle Therapy on Pain and Shoulder Movement in Subjects With Rotator Cuff Injuries**

Unique Protocol ID: UComplutenseMadrid Fasisifer1

Official Title: Effects of Diaphragm Muscle Therapy on Pain and Shoulder Movement in Subjects With Rotator Cuff Injuries

Investigator: Isidro Fernández López

Sponsor: Universidad Complutense de Madrid

Identifiers: NCT ID not yet assigned

Secondary IDs: 2017-003316-39 [EudraCT Number]

Date: September 24th, 2017

## **STUDY PROTOCOL**

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## STUDY PROTOCOL

### Objective

To assess the influence of physical therapy on diaphragm muscle, via manual release or active mobilization, in subjects with rotator cuff injury comparing with a standard treatment of shoulder myofascial trigger points release

### Methods

#### Randomisation

Patients who meet the eligibility criteria are randomised to receive any of three different treatments through the informatic application provided by the web [www.randomization.com](http://www.randomization.com).

#### Interventions

This study is a randomised controlled trial, the protocol intervention includes:

- 1.- Preintervention assessment of shoulder mobility: flexion, abduction and external rotation at 90° abduction in supine, registered with a Baseline digital inclinometer.
- 2.- Preintervention Numerical Rating Pain Scale in shoulder mobility: flexion, abduction and external rotation at 90° abduction standing.

3.- Preintervention Pain pressure threshold assessment with an algometer in supraespinatus tendon and xiphoid process.

4.- Intervention treatment in each arm:

a.- Experimental group 1: 3 diaphragm stretching techniques according to Chaitow, Ward and Ricard, performed by a physical therapist are employed in this experimental group during 10 minutes. The participants are situated in a seated, supine and side bending position.

b.- Experimental group 2: diaphragm mobilization through active hipopressive gymnastic exercise according to Caufriez in two different postures.

c.- Active comparator group: A ischemic compression technique in most painful myofascial trigger points in the infraespinatus and supraespinatus muscle during one minute each one.

5.- Postintervention assessment of shoulder mobility: flexion, abduction and external rotation at 90° abduction in supine, registered with a Baseline digital inclinometer.

6.- Postintervention Numerical Rating Pain Scale in shoulder mobility: flexion, abduction and external rotation at 90° abduction standing.

7.- Postintervention Pain pressure threshold assessment with an algometer in supraespinatus tendon and xiphoid process.

8.- Statistical analysis and results interpretation.

Every assessment and treatment is performed by a physical therapist who has more tan 10 years of experience in that kind of interventions.