

Clinical Trial Protocol

Iranian Registry of Clinical Trials

15 Jun 2026

The comparison of automatic and voluntary training on lateral abdominal muscles thickness in chronic non-specific low back pain patients.

Protocol summary

Summary

The objective of this clinical trial is the comparison of the effect of voluntary and automatic training of abdominal muscles on these muscles activity. This experimental study will be done on 60 chronic low back pain patients (male and female) in 18-45 year-old. Transverse abdominis, internal oblique and external oblique thickness will be evaluated by ultrasonography. Then, participants will be randomly assigned into three groups of voluntary muscle contraction (stabilization exercises), automatic contraction of abdominal muscles (doing lower limb diagonal pattern) and control group (no intervention). Six weeks exercise therapy will be done in three sets of ten with two minutes rest between each repetition with the supervision of a physiotherapist in two exercise therapy groups. The control group will be asked to do nothing special other than their routine activity. The thickness of transverse abdominis, internal oblique and external oblique muscles will be evaluated again in all three studied groups at the end of exercise therapy.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2015011120639N1**

Registration date: **2016-03-10, 1394/12/20**

Registration timing: **prospective**

Last update:

Update count: **0**

Registration date

2016-03-10, 1394/12/20

Registrant information

Name

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Name of organization / entity

Semnan University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Semnan University of Medical Sciences

Expected recruitment start date

2016-04-20, 1395/02/01

Expected recruitment end date

2016-10-22, 1395/08/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The comparison of automatic and voluntary training on lateral abdominal muscles thickness in chronic non-specific low back pain patients.

Public title

Comparing two voluntary and involuntary training of abdominal muscles on the size of them in chronic low back pain patients.

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: patients with nonspecific low back pain, average age of 18-45 years, history of low back pain lasting 3 months during one year ago. Exclusion criteria: history of diabetes, musculoskeletal disorders, systemic diseases, spondylolysis and spondylolisthesis,

history of previous surgery in the spinal region, history of lumbar trauma during previous year of the study, disk herniation, nerve root compression, polyneuropathies, carcinoma, malignancy of the spinal region, balance disorders, pregnancy, history of back training during 3 months before the study, drugs using with side effect on the postural control system.

Age

From **18 years** old to **45 years** old

Gender

Both

Phase

2-3

Groups that have been masked

No information

Sample size

Target sample size: **60**

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Not blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee of Semnan University of Medical Sciences

Street address

Rehabilitation faculty, Semnan University of Medical Sciences, the 5th kilometers of Damghan road

City

Semnan

Postal code**Approval date**

2015-03-17, 1393/12/26

Ethics committee reference number

93/584688

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

Chronic non-specific low back pain

ICD-10 code

M99.9

ICD-10 code description

Biomechanical Lesion, Unspecified

Primary outcomes**1****Description**

Transvers abdominis, internal oblique and external oblique muscle thickness

Timepoint

Before and 6 weeks after intervention

Method of measurement

Ultrasonography

Secondary outcomes**1****Description**

Pain and disability

Timepoint

Beginning of study, after 6 weeks intervention

Method of measurement

Roland-Morris disability questionnaire, Visual analogue scale

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

Doing 6 weeks of voluntary contraction of abdominal muscles, three times a week

Category

Rehabilitation

2**Description**

Doing 6 weeks of automatic training of abdominal muscles, three sessions a week

Category

Rehabilitation

3**Description**

No intervention during 6 weeks.

Category

N/A

Recruitment centers**1****Recruitment center****Name of recruitment center**

Neuromuscular Rehabilitation Research Center

Full name of responsible person**Street address****City**

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Semnan University of Medical Sciences

Full name of responsible person

Dr. Ali Rashidipour (Research deputy of Semnan University of Medical Sciences)

Street address

Vice chancellor for research, Semnan University of Medical Sciences, Amir Kabir Bridge, Basij Blvd.

City

Semnan

Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Semnan 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

Semnan University of Medical Sciences

Full name of responsible person

Dr. Rozita Hedayati

Position

Ph.D of Physiotherapy/ Assistant 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