Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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 mounts during one year ago. Exclusion criteria: history of diabetes, muscloskeletal 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 comparison, polyneuropathies, carsinoma, 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 thikcness

Timepoint
Before and 6 weeks after intervention

Method of measurement
Ultrasonography

Secondary outcomes

1

Description
Pain and disability

Timepoint
Begening of study, after 6 weeks intervention

Method of measurement
Roland-Morris disability questionnair, 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

Semnan

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

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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