

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of core stability and suspension exercise on some EMG coordinates, beta-endorphin and functional disability in people with lumbar disc herniation

Protocol summary

Study aim

Comparison of core stability and suspension exercise on some EMG coordinates, beta-endorphin and functional disability in people with lumbar disc herniation

Design

A clinical trial on 45 people with two intervention groups and one control group (15 people in each group), with parallel groups, randomized

Settings and conduct

The present study is a randomized controlled trial on people with lumbar disc herniation in rasht city. Subjects will participated in a training course for 8 weeks. Measurement of pain, functional disability, range of motion, electromyographic data and blood samples will be performed before and after intervention .

Participants/Inclusion and exclusion criteria

1-Male participants with Age 25-55 years old 2-Mild to moderate lumbar pain intensity with visual analog scale 2 to 7 and severity of disc herniation with grade 1 and 2 (bulging and protrusion) 3-History of low back pain for more than 3 months 4-Not having neurological diseases, cancer, diabetes and any disease affecting on treatment process 5-Not participating in regular sports exercises 6- Not using other treatments for low back pain

Intervention groups

First Intervention group : Core stability exercises for 8 weeks. them as: bridging, push-up, inverted row, oblique sit-up, femur abduction, femur flexion and plank. Second Intervention group: Suspension exercises for 8 weeks which are similar to the first group in suspension model. Control group: Self-care methods at home

Main outcome variables

Plasma beta-endorphin, functional disability, muscle activity

General information

Reason for update

Acronym

EMG

IRCT registration information

IRCT registration number: **IRCT20191016045136N1**

Registration date: **2020-08-21, 1399/05/31**

Registration timing: **retrospective**

Last update: **2020-08-21, 1399/05/31**

Update count: **0**

Registration date

2020-08-21, 1399/05/31

Registrant information

Name

yasser mohebbi rad

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 31 3212 4093

Email address

yaser.mr2003@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2020-05-21, 1399/03/01

Expected recruitment end date

2020-08-05, 1399/05/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of core stability and suspension exercise on some EMG coordinates, beta-endorphin and functional disability in people with lumbar disc herniation

Public title

Comparison of core stability and suspension exercise in people with lumbar disc herniation

Purpose

Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:

Mild to moderate lumbar pain intensity with a visual analog scale score between 2-7 and severity of disc herniation with grade 1 and 2 (bulging and protrusion) History of low back pain for more than three months Not having specific diseases such as neurological diseases, cancer, diabetes, osteoporosis, etc. Not participating in regular exercise means 3 sessions per week for at least one year Not using other treatments for low back pain during the intervention

Exclusion criteria:

Absences in training More than two session Dissatisfaction with continuing training Getting illness or injury during the intervention period

Age

From **25 years** old to **55 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **45**

Randomization (investigator's opinion)

Randomized

Randomization description

Restricted randomization, Individual, random allocation roll, Sequentially numbered, sealed, opaque envelopes (The names are written on a piece of paper and placed in similar envelopes. Then they are randomly placed in containers 1, 2 and 3 as a mark of 3 groups)

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 Islamic Azad University-Rasht Branch

Street address

Navab Tower- Navab Street- Golsar Crossroad

City

Rasht

Province

Guilan

Postal code

4163774654

Approval date

2020-06-22, 1399/04/02

Ethics committee reference number

IR.IAU.RASHT.REC.1399.019

Health conditions studied

1

Description of health condition studied

Lumbar disc herniation

ICD-10 code

M51.26

ICD-10 code description

Other intervertebral disc displacement, lumbar region

Primary outcomes

1

Description

Plasma beta endorphin

Timepoint

12 hours before and after intervention

Method of measurement

Blood sample- ELISA (Enzyme-linked immunosorbent)

2

Description

Functional disability

Timepoint

Before and after intervention

Method of measurement

Oswestry disability index

3

Description

Muscles activity

Timepoint

Before and after intervention

Method of measurement

Electromyography

Secondary outcomes

1

Description

Pain

Timepoint

Before and after intervention

Method of measurement

Mcgill pain questionnaire

2

Description

Lumbar range of motion

Timepoint

Before and after intervention

Method of measurement

Modified Schöber test

Intervention groups

1

Description

First Intervention group : core stability exercises for 8 weeks, 3 sessions per week including warm-up (5 minute), exercise (40 minute) and cool down (5 minute). Exercises include bridging (5 repetitions in form of movement-hold-back with 2-3-2 seconds and 1 minute rest between repetitions), push-up (Similar to the first case), inverted row (Similar to the first case), oblique sit-up (Similar to the first case), femur abduction (Similar to the first case), femur flexion (Similar to the first case) and plank (1 repetition with 10 seconds hold). There are 1 minute rest between each workout and the next

Category

Rehabilitation

2

Description

Second Intervention group: Suspension exercises for 8 weeks, 3 sessions per week including warm-up (5 minute), exercise (40 minute) and cool down (5 minute). Exercises include suspension bridging (5 repetitions in form of movement-hold-back with 2-3-2 seconds and 1 minute rest between repetitions), suspension push-up (Similar to the first case), suspension inverted row (Similar to the first case), suspension oblique sit-up (Similar to the first case), suspension femur abduction (Similar to the first case), suspension femur flexion (Similar to the first case) and suspension plank (1 repetition with 10 seconds hold). There are 1 minute rest between each workout and the next

Category

Rehabilitation

3

Description

Control group: Self-care methods at home (Such as how to properly sit, sleep and carry and lift loads)

Category

Behavior

Recruitment centers

1

Recruitment center

Name of recruitment center

Pardis physiotherapy clinic

Full name of responsible person

Yasser Mohebbi Rad

Street address

Navab Tower, Navab Street, Golsar Crossroads

City

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Postal code

4163774654

Phone

+98 13 3212 4093

Email

yaser.mr2003@gmail.com

Web page address

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Islamic Azad University

Full name of responsible person

Mohammadreza Fadaei Chafi

Street address

Number 3, Golestan Bulding, Siadati Alley, Mellat Street,

City

Rasht

Province

Guilan

Postal code

4144643199

Phone

+98 13 3211 7387

Email

mfadaei2000@yahoo.com

Grant name

Grant code / Reference number

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

No

Title of funding source

Islamic Azad University- Rasht Branch

Proportion provided by this source

1

Public or private sector

Private

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Academic

Person responsible for general inquiries

Contact

Name of organization / entity

Islamic Azad University

Full name of responsible person

Yasser Mohebbi Rad

Position

Physiotherapist

Latest degree

Master

Other areas of specialty/work

Physiotherapy

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Other areas of specialty/work

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available

Title and more details about the data/document

Part of the data, such as primary and secondary outcome information is shared

When the data will become available and for how long

Access starts 12 months after the results are published

To whom data/document is available

Researchers from academic institutions and medical therapists

Under which criteria data/document could be used

There are no other conditions

From where data/document is obtainable

Send request to email yaser.mr2003@gmail.com

What processes are involved for a request to access data/document

First, the official request should be sent to the e-mail and after confirmation, other documents such as ID card and university confirmation documents should be sent. Data

documents will be sent in less than a month after

verification
Comments