Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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
Rasht
Province
Guilan
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

Street address
Navab Tower, Navab Street, Golsar Crossroads

City
Rasht

Province
Guilan

Postal code
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Phone
+98 31 3212 4093

Fax

Email
yaser.mr2003@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity
Islamic Azad University

Full name of responsible person
Yasser Mohebbi Rad

Position
Physiotherapist

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Email
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Person responsible for updating data

Contact

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Islamic Azad University

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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