Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

Study of the effect of TRX Suspension Training on Functional Balance, Postural Control, Proprioception and Knee Muscles Isometric Strength in Patients With Multiple Sclerosis

Protocol summary

Study aim
The effect of TRX suspension training on functional balance, postural control, proprioception and knee muscles isometric strength in patients with Multiple Sclerosis

Design
Clinical trial with control group, Non randomized and purposive, single blind

Settings and conduct
The intervention group performed TRX suspension training for 8 weeks at the Sports Club of the Isfahan MS association. All measurements were carried out at the laboratory of faculty of Sport Sciences in University of Isfahan and faculty of Rehabilitation Sciences of Isfahan University of Medical Sciences. The testers were blinded to the intervention and control groups.

Participants/Inclusion and exclusion criteria
Inclusion criteria: Expanded Disability Status Scale (EDSS) score of 1-4, Female gender and non-pregnancy, Age range between 20-50 years, Not having another acute or chronic disabling diseases contrary with exercise and the medical prohibition for performing the exercise. Complete the written informed consent
Exclusion criteria: Relapse the disease during the study, Pregnancy of subjects during the study, Did not tend to continue the exercise or attend in research, Did not complete the pre-test and post-test

Intervention groups
The intervention group received the TRX suspension training for 8 weeks. The control group received their usual daily activities

Main outcome variables
Functional capacity in patients with multiple sclerosis

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20180521039762N1**
Registration date: **2018-06-10, 1397/03/20**
Registration timing: **retrospective**

Last update: **2018-06-10, 1397/03/20**
Update count: **0**

Registration date
2018-06-10, 1397/03/20

Registrant information

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Afshin Moghadasi
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University of Isfahan
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Iran (Islamic Republic of)
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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2017-04-21, 1396/02/01

Expected recruitment end date
2017-08-23, 1396/06/01

Actual recruitment start date
2017-04-21, 1396/02/01

Actual recruitment end date
2017-09-23, 1396/07/01

Trial completion date
empty

Scientific title

Study of the effect of TRX Suspension Training on Functional Balance, Postural Control, Proprioception and Knee Muscles Isometric Strength in Patients With Multiple Sclerosis

Public title
The Effect of TRX Suspension Training on Functional Capacity in Patients With Multiple Sclerosis
Purpose
Supportive
Inclusion/Exclusion criteria
Inclusion criteria:
Expanded Disability Status Scale (EDSS) score of 1-4 Female gender and non-pregnancy Age range between 20-50 years Not having another acute or chronic disabling diseases contrary with exercise The medical prohibition for performing the exercise Complete the written informed consent
Exclusion criteria:
Relapse the disease Pregnancy of subjects during the study Did not complete the pretest and post test Did not tend to continue the exercise or attend in research
Age
From **20 years** old to **50 years** old
Gender
Female

Phase
N/A
Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **35**
Actual sample size reached: **34**
Randomization (investigator's opinion)
Not randomized
Randomization description
Blinding (investigator's opinion)
Single blinded
Blinding description
The tester was blinded to each subject’s control and intervention groups
Placebo
Not used
Assignment
Other
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of the University of Isfahan
Street address
University of Isfahan, Hezarjarib Ave
City
Isfahan
Province
Isfehan
Postal code
8174673441
Approval date
2017-11-21, 1396/08/30
Ethics committee reference number
IR.UI.REC.1396.014

Health conditions studied

1

Description of health condition studied
Multiple Sclerosis
ICD-10 code
G35
ICD-10 code description
Multiple sclerosis

Primary outcomes

1

Description
Functional balance
Timepoint
Before the intervention and 8 weeks after the intervention
Method of measurement
Forward and lateral functional reach tests; Timed up & go test; Timed 25-foot walk test.

2

Description
Knee proprioception (joint position sense) error
Timepoint
Before the intervention and 8 weeks after the intervention
Method of measurement
Biodex isokinetic dynamometer

3

Description
Isometric maximal voluntary contractions
Timepoint
Before the intervention and 8 weeks after the intervention
Method of measurement
Biodex isokinetic dynamometer

4

Description
Quality of Life
Timepoint
Before the intervention and 8 weeks after the intervention
Method of measurement

MSQoL-54 questionnaire

5

Description
Postural control
Timepoint
Before the intervention and 8 weeks after the intervention
Method of measurement
Force plate system

6

Description
Walking endurance
Timepoint
Before the intervention and 8 weeks after the intervention
Method of measurement
Two-minute walk tests

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: The intervention group performed the TRX suspension training program, included eight TRX whole-body workout with four levels of difficulty for every exercise that lasted for 8 weeks, 3 sessions per week and 30 minutes each session. Each of the training levels included three sets with 5, 7 and 10 repetitions.The ratio of rest to practice was 3 to 1.
Category
Rehabilitation

2

Description
Control group: The control group received their usual daily activities.
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
انجمن ام. اس اصفهان
Full name of responsible person
Afshin Moghadasi
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
نهاد حمایت کننده دانشگاه اصفهان هست نه علوم پزشکی
Full name of responsible person
Rasoul Roknizadeh
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+98 31 3793 2171
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rokni@sci.ui.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
نهاد حمایت کننده دانشگاه اصفهان هست نه علوم پزشکی
Proportion provided by this source
100
Public or private sector
Public
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
با سلام حقیر دانشجوی دانشگاه اصفهان هستم نه علوم پزشکی
Full name of responsible person
Afshin Moghadasi
Position
PhD student
Latest degree
Master
Other areas of specialty/work
Sport Sciences, Sport Injury & Corrective Exercises

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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
Yes - There is a plan to make this available
Statistical Analysis Plan
Not applicable
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is 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
No - There is not a plan to make this available
Title and more details about the data/document
Training protocol and all collected data can be shared
When the data will become available and for how long
Start the access period 6 months after publishing the results
To whom data/document is available
Researchers working in academic institutions and patients with multiple sclerosis
Under which criteria data/document could be used
In order to research and on condition of cooperation
From where data/document is obtainable
Afshin moghadasi
What processes are involved for a request to access data/document
Information is available after contact with Mr. Afshin Moghadasi and coordination with the Department of Sport Injury & Corrective Exercises of the University of Isfahan.
Comments