

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

The Effect of Strengthening hip Abductors on the Asymmetry of Lower Limb Strength and Balance in People with Multiple Sclerosis

Protocol summary

Study aim

Investigating the effect of strengthening the thigh abductors on the asymmetry of lower limb muscle strength and balance in people with MS will be studied.

Design

A supportive trial with a control group, parallel, non-blinded, randomized groups, without drug intervention, and the randomization will use the rand function of Excel software.

Settings and conduct

In this research, two groups will be examined in terms of the control group. These exercises will be performed in Urmia city by presenting an 8-week schedule in the corrective exercise gym and under the supervision of a trainer and physician, they will perform corrective exercises (leg raising, shellfish exercise, etc.) in 3 sessions of 45 minutes. Before and after entering the exercise, the muscle parameters of the people will be measured with a dynamometer device. Blinding is not considered in this research.

Participants/Inclusion and exclusion criteria

Inclusion criteria in the present study include gender (female patients in this study), residence in Urmia city, not to be pregnant, age range between 20 and 50 years, EDSS disability scale score less than 4, the type of MS disease is relapsing-recovery and at least 2 years have passed since the onset of the disease. In the same way, the non-entry criteria include pregnancy, failure to complete the consent form, deterioration of the patient's condition, the possibility of physical or mental injuries to the patient, doctor's diagnosis for not participating in the study.

Intervention groups

- Group "A" will be the control group. - Group "B" will perform exercises related to strengthening thigh abductors.

Main outcome variables

The dependent variables of the research include static, dynamic balance and isometric strength of thigh

abductor muscles, knee extensors and flexors and ankle plantar flexors and ankle dorsiflexors in the pre-test stage.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230801059000N1**

Registration date: **2023-08-11, 1402/05/20**

Registration timing: **prospective**

Last update: **2023-08-11, 1402/05/20**

Update count: **0**

Registration date

2023-08-11, 1402/05/20

Registrant information

Name

Sana Rostami Anhar

Name of organization / entity

Urmia University

Country

Iran (Islamic Republic of)

Phone

+98 44 3337 2139

Email address

sana.rostamiiii@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-08-14, 1402/05/23

Expected recruitment end date

2023-09-14, 1402/06/23

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effect of Strengthening hip Abductors on the Asymmetry of Lower Limb Strength and Balance in People with Multiple Sclerosis

Public title

The Effect of Strengthening hip Abductors in People with Multiple Sclerosis

Purpose

Supportive

Inclusion/Exclusion criteria**Inclusion criteria:**

Gender (in this study, female patients) Living in Urmia city Not to be pregnant Age range between 20 and 50 years EDSS disability scale score less than 4 (which will be determined by the neurologist according to the patient's medical record) The type of MS is relapsing-remitting and at least 2 years have passed since the onset of the disease The study case do not participated in resistance rehabilitation training programs before in order to reduce muscle asymmetry (to prevent the effect of previous training) Not prohibiting by the doctor from participating in the strength measurement tests Complying with professional ethics protocols, including completing the informed consent form to participate in the study The patient did not suffer from deformities and injuries affecting the study process (such as: braced and crossed knees or flat and severely hollow soles and no ankle, knee and thigh sprains and fractures in the past 6 months).

Exclusion criteria:

Pregnancy Failure to complete the consent form or accept the training conditions The possibility of physical or mental injuries to the patient EDSS disability scale score more than 4 (which will be determined by the neurologist according to the patient's medical record) Prohibiting by the supervisor doctor Impossibility of mobility or exercise The patient participated in resistance rehabilitation exercise programs before the study

Age

From **20 years** old to **50 years** old

Gender

Female

Phase

N/A

Groups that have been masked*No information***Sample size**Target sample size: **40****Randomization (investigator's opinion)**

Not 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 Urmia University

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No. 16, Farhang Ave., Valfajr Blvd., Urmia Town

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Province

West Azarbaijan

Postal code

5719764476

Approval date

2023-08-01, 1402/05/10

Ethics committee reference number

IR.URMIA.REC.1402.011

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

Multiple Sclerosis (M.S.)

ICD-10 code

G35

ICD-10 code description

Multiple sclerosis

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

Static balance

Timepoint

At the beginning of the study and 8 weeks later and after the end of the exercises

Method of measurement

Timer

2**Description**

Dynamic balance

Timepoint

At the beginning of the study and 8 weeks later and after the end of the exercises

Method of measurement

Timer

3

Description

Isometric strength competition of thigh abductor machine, knee extensors and flexors and plantarflexors and ankle dorsiflexors.

Timepoint

At the beginning of the study and 8 weeks later and after the end of the exercises

Method of measurement

Manual dynamometer

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Exercises in this group will be done for 8 weeks, 3 sessions per week and each session will last about 45 minutes (10 minutes of warming up, 30 minutes of strengthening the abductor muscles, 5 minutes of cooling down).

Category

Rehabilitation

2

Description

Control group: The research variables will be measured on this group.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Dr. Sahar Mohammadi Falah's Office

Full name of responsible person

Dr. Sahar Mohammadi Falah

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No. 4, Hasani Ave., Hashemi Building, Urmia Town

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Urmia University

Full name of responsible person

Dr. Sajad Roshani

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Web page address

Grant name

Grant code / Reference number

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

No

Title of funding source

Urmia University

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

Urmia University

Full name of responsible person

Sana Rostami Anhar

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Corrective exercises

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Sana Rostami Anhar

Position

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Latest degree

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Other areas of specialty/work

Master of sport injury and corrective exercises

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

There is no additional info.

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available