# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

22 Nov 2026

## Comparison of clinical and functional effects of static stretching and functional stretching exercises in lower limb muscles of patients with Multiple Sclerosis

## Protocol summary

**Study aim**
Comparison of clinical and functional effects of static stretching and functional stretching exercises in lower limb muscles of patients with Multiple Sclerosis

**Design**
Randomized,single blinded trial with parallel group design of 22 patients with Multiple sclerosis allocated randomly into two static stretching and functional stretching exercises group

**Settings and conduct**
Pre and post assessments in each group are as follows: ROM assessment, pain intensity, spasticity and functional tests (TUG, T25FWT). For patients in static stretching group; hamistring, quadrceps, hip adductors and plantar flexors muscles will be stretched statically by therapist. For patients in functional stretching group; hamistring, quadrceps, hip adductors and plantar flexors will be stretched by patients actively with guidance of therapist. In both group each stretch will be kept for 30 sec and repeated 3 times with 15 sec rests. In both group after stretching ,active or active assisted movements in the same direction of stretching will be done with 5 repetition.

**Participants/Inclusion and exclusion criteria**
Inclusion criteras: to have multiple sclerosis disease confirmed by specialist; to have spasticity with limb stiffness or contractures of muscles or soft tissue in lower extremity; being able to walk min 25 foot with/without assistive devices. Exclusion criterias: to use wheelchair; to use anti spasticity drugs.

**Intervention groups**
Intervention group 1:Static stretching exercises
Intervention group 2:Functional stretching exercises

**Main outcome variables**
pain, range of motion, spasticity, functional tests

## General information

**Reason for update**
end of study

**Acronym**

**IRCT registration information**
IRCT registration number: **IRCT20190702044079N1**
Registration date: **2019-08-29, 1398/06/07**
Registration timing: **prospective**

Last update: **2020-01-19, 1398/10/29**
Update count: **1**

**Registration date**
2019-08-29, 1398/06/07

**Registrant information**

**Name**
Merziye ergul

**Name of organization / entity**

**Country**
Iran (Islamic Republic of)

**Phone**
+98 21 4424 1362

**Email address**
merziyeergul@gmail.com

**Recruitment status**
**Recruitment complete**

**Funding source**

**Expected recruitment start date**
2019-09-01, 1398/06/10

**Expected recruitment end date**
2019-12-29, 1398/10/08

**Actual recruitment start date**
2019-09-01, 1398/06/10

**Actual recruitment end date**
2019-12-01, 1398/09/10

**Trial completion date**

2019-12-01, 1398/09/10

**Scientific title**
Comparison of clinical and functional effects of static stretching and functional stretching exercises in lower limb muscles of patients with Multiple Sclerosis

**Public title**
Effects of stretching exercises in patients with Multiple Sclerosis

**Purpose**
Treatment

**Inclusion/Exclusion criteria**
**Inclusion criteria:**
Multiple sclerosis confirmed by specialist to have spasticity with limb stiffness or contractures of muscles or soft tissue in lower extremity being able to walk min 25 foot with/without assistive devices
**Exclusion criteria:**
to use wheelchair to use anti spasticity drugs

**Age**
From **18 years** old to **65 years** old

**Gender**
Both

**Phase**
N/A

**Groups that have been masked**

- Participant

**Sample size**
Target sample size: **22**
Actual sample size reached: **24**

**Randomization (investigator's opinion)**
Randomized

**Randomization description**
Randomization by random allocation rule through lottery:for this study,for a total study size of 22;11 paper for static stretching group and 11 paper for functional stretching group will be put in a lottery pocket.Then for each patient one paper will be drawn randomly from pocket and patients will be randomly allocated into static and functional stretching groups.

**Blinding (investigator's opinion)**
Single blinded

**Blinding description**
Each individual will be involved in a trial separately,will be assessed separately and will be treated separately.

**Placebo**
Not used

**Assignment**
Parallel

**Other design features**

## Secondary Ids

empty

## Ethics committees

### 1

**Ethics committee**

**Name of ethics committee**
Ethics Committee of University of Social Welfare and Rehabilitation Sciences

**Street address**
Kodekeyar dead end, Daneshjo Blvd, Evin

**City**
Tehran

**Province**
Tehran

**Postal code**
۱۹۸۵۷۱۳۸۳۴

**Approval date**
2019-06-26, 1398/04/05

**Ethics committee reference number**
IR.USWR.REC.1398.051

## 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**
spasticity

**Timepoint**
in the begining and end of the study

**Method of measurement**
modified modified ashworth scale

### 2

**Description**
function

**Timepoint**
in the begining and end of the study

**Method of measurement**
Timed Up and Go test and Timed 25 Foot Walk test

### 3

**Description**
active range of motion

**Timepoint**
in the begining and end of the study

**Method of measurement**
with goniometer

### 4

**Description**
pain

**Timepoint**
in the begining and end of the study

**Method of measurement**
Visual analog scale

## Secondary outcomes

empty

## Intervention groups

### 1

**Description**
Intervention group:static stretching exercises will be applied 3 times in a week totally for 4 weeks.Hamistring,quadriceps,adductors and plantar flexors will be streched by researcher bilaterally.Each stretch will be kept for 30 seconds and repeated for 3 times.
**Category**
Rehabilitation

### 2

**Description**
Intervention group:functional stretching exercises will be done 3 times in a week totally for 4 weeks.Hamistring,quadriceps,adductors and plantar flexors will be streched by patient with guidance of reseacher.Each stretch will be kept for 30 seconds and repeated for 3 times.
**Category**
Rehabilitation

## Recruitment centers

### 1

**Recruitment center**
**Name of recruitment center**
Iran MS society
**Full name of responsible person**
Abolghasem najafi
**Street address**
No. 35, Shams Alley, Vassal Shirazi Street, Enqelab Street
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iranmsociety@gmail.com
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## Sponsors / Funding sources

### 1

**Sponsor**
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University of social welfare and rehabilitation sciences
**Full name of responsible person**
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**Web page address**
http://en.uswr.ac.ir/index.jsp?fkeyid=&siteid=2&fkeyid=&siteid=56&pageid=13761
**Grant name**
**Grant code / Reference number**
**Is the source of funding the same sponsor organization/entity?**
No
**Title of funding source**
vice chancellery for research and technology of USWR
**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**
University of social welfare and rehabilitation sciences
**Full name of responsible person**
Merziye Ergul
**Position**
Master student
**Latest degree**
Bachelor
**Other areas of specialty/work**
Physiotherapy
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## Person responsible for scientific inquiries

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## Person responsible for updating data

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**Other areas of specialty/work**
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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 information.

**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