Aerobic exercise to improve fitness, walking ability and cognitive function in multiple sclerosis: a randomized controlled trial

Submission date	Recruitment status No longer recruiting	Prospectively registered		
06/10/2011		☐ Protocol		
Registration date	Overall study status Completed	Statistical analysis plan		
12/12/2011		[X] Results		
Last Edited	Condition category	Individual participant data		
28/10/2013	Nervous System Diseases			

Plain English summary of protocol

Background and study aims:

Several studies have shown that fitness training can increase well-being and quality of life in patients with multiple sclerosis. However, most of the available studies have included patients during the early phase of disease with mild to moderate disability. In this study, we investigated if standardized fitness training is possible for patients with progressive disease and which training form may be most suitable for this group. In addition, we will explore if exercise can enhance physical fitness, walking ability and cognitive function (e.g. memory).

Who can participate?

Male or female patients aged 30 60 years with secondary-progressive multiple sclerosis and an Expanded Disability Status Scale (EDSS) between 4 and 6.

What does the study involve?

The patients were randomly allocated to one of three different groups of fitness training or to a wait list control group (where these patients would have to wait to receive the fitness training). All patients in the three fitness training groups will exercise for approximately 30-45 minutes, 2 or 3 times a week, for 8 weeks. The intensity of the training was adjusted to their individual fitness level which was assessed at the initial fitness evaluation at the Department of Sports Medicine. The patients in the wait list control group will be offered an 8 week exercise training program of their choice free of charge after the study is completed.

What are the possible benefits and risks of participating?

Participants could increase their level of physical fitness under medical supervision. However exercise may lead to an increase of some symptoms of multiple sclerosis due to increases in body temperature while exercising.

Where is the study run from?
University Hospital Hamburg-Eppendorf, Hamburg, Germany

When is the study starting and how long is it expected to run for? The study started in August 2010 and ended in January 2012.

Who is funding the study? University Hospital Hamburg-Eppendorf, Germnay

Who is the main contact? Prof Christoph Heesen heesen@uke.de

Contact information

Type(s)

Scientific

Contact name

Prof Christoph Heesen

Contact details

Martinistrasse 52 Hamburg Germany 20246 heesen@uke.de

Additional identifiers

Protocol serial number

PV3689

Study information

Scientific Title

Hamburg Pilot Trial on Exercise in Secondary Progressive Multiple Sclerosis (HAPITEX-SPMS)

Acronym

HAPITEX-SPMS

Study objectives

The aim of the study is to investigate the safety and feasibility of exercise in multiple sclerosis (MS) patients with advanced disability. We will also test the potential of standardized exercise interventions to improve physical fitness, enhance cognitive function and decrease fatigue and depression in MS patients with progressive disease.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Medical Board Hamburg, Germany, 1 August 2011, ref: PV3689

Study design

Randomised controlled trial with wait list control group

Primary study design

Interventional

Study type(s)

Quality of life

Health condition(s) or problem(s) studied

Multiple Sclerosis

Interventions

Subjects are randomly assigned to one of four conditions (biased coin randomization):

- 1. Bicycle ergometry
- 2. Hand ergometry
- 3. Rowing
- 4. Waitlist control

The goal is to have 10 subjects in each group, 8 weeks with 2-3 sessions per week

Intervention Type

Other

Phase

Not Applicable

Primary outcome(s)

Physical fitness pre and post intervention as determined by a standardized ergometer test

Key secondary outcome(s))

- 1. Walking ability (6-minute walk test)
- 2. Cognitive function (assessed by a neuropsychological battery including learning and memory, attention, executive function and processing speed)
- 3. Depression (IDS-30R)
- 4. Fatigue (MFIS)

Assessed pre and post intervention.

Completion date

31/01/2012

Eligibility

Key inclusion criteria

- 1. Patients with secondary-progressive multiple sclerosis (MS)
- 2. Disease duration <20 years
- 3. Expanded disability status scale (EDSS) 4-6

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Other

Sex

All

Key exclusion criteria

- 1. Immunomodulatory therapy in the last 3 months
- 2. Steroid therapy in the last 4 weeks
- 3. Relapsing-remitting or primary progressive MS
- 4. Laboratory markers of liver and kidney function outside of the normal range
- 5. Immunodeficiency or other serious medical illnesses (based on the judgement of the physician)
- 6. Hepatitis B or hepatitis C infection or other chronic liver diseases
- 7. Patients taking psychoactive medication (benzodiazepines, neuroleptics, antidepressants)

Date of first enrolment

01/08/2011

Date of final enrolment

31/01/2012

Locations

Countries of recruitment

Germany

20246

Study participating centre Martinistrasse 52 Hamburg Germany

Sponsor information

Organisation

Institute for Neuroimmunology and Clinical Multiple Sclerosis Research (Germany)

Funder(s)

Funder type

University/education

Funder Name

Institute for Neuroimmunology and Clinical Multiple Sclerosis Research, University Hospital Hamburg-Eppendorf (Germany)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration

Study outputs

Output type	Details	Date created Date added	Peer reviewed?	Patient-facing?
Results article	results	01/03/2014	Yes	No
Participant information sheet	Participant information sheet	11/11/2025 11/11/2025	No	Yes