



National Multiple Sclerosis Society
733 Third Avenue
New York, New York 10017-3288
Tel +1 212.986.3240
Fax +1 212.986.7981
E-mail nat@nmss.org
Nationalmssociety.org

RESEARCH/CLINICAL UPDATE

February 16, 2015

Small Study Highlights Potential Benefits Of Exercise For Improving Cognition In People With MS

A small study involving 24 people with multiple sclerosis found that 20 minutes of treadmill walking, stationary cycling, and guided yoga significantly improved reaction times but not accuracy over pre-exercise levels in individuals, compared to quiet rest periods. The researchers also found that treadmill walking provided additional benefits in relation to cognitive performance. This research provides new preliminary evidence of the potential benefits of exercise for people with MS, as well as information needed to design larger, longer studies to determine the optimal exercise regimens to enhance cognition in people with MS. Drs. Brian Sandroff, Robert Motl and collaborators (University of Illinois, Urbana-Champaign; State University of New York at Buffalo) [report](#) their findings online on February 6, 2015 in the *Journal of Clinical and Experimental Neuropsychology*.

Background: People with MS may experience problems with speed of information processing and memory, and right now effective therapies to improve cognitive function are still experimental. Exercise training has been shown to improve cognitive function in older normal adults and in those with early Alzheimer's disease. Early findings have suggested this is true for people with MS, but this has not been fully verified.

The collaborating team that launched this study aimed to gather information about the comparative impacts of several types of aerobic and non-aerobic exercise on speed of information processing and accuracy and other aspects of cognition, and to help pinpoint study methods and the type and intensity of exercise to test in a larger clinical trial that could provide more definitive answers for people with MS.

The Study and Results: Although the study was open to people with all forms of MS, after recruitment the study group consisted of 24 people who all had relapsing-remitting MS with low levels of disability and minimal or no signs of cognitive impairment. Individuals underwent repeated cognitive testing before participating in rounds of alternating types of exercise (20

minutes of treadmill walking, stationary cycling, and guided yoga) or quiet rest. They were tested for speed and accuracy on a computerized task along with other aspects of cognition before and after exercising. The computerized task involved on-screen distractions that could adversely affect speed and accuracy.

Data were analyzed after all participants had been tested after participating in each type of exercise or quiet rest. Overall, compared to quiet rest periods, all three exercise types significantly improved reaction times but not accuracy over pre-exercise levels. The researchers also found that treadmill walking provided additional benefits in relation to cognitive performance.

Comment: Although this study was small, it provides new preliminary evidence of the potential benefits of exercise for people with MS, as well as information needed to design larger, longer studies to determine the optimal exercise regimens to enhance cognition in people with MS and more significant cognitive impairment. Members of this collaborative team are now involved in a National MS Society-supported, larger-scale clinical trial at the University of Washington, testing whether aerobic exercise or stretching and toning can improve thinking speed in people with MS who have experienced subtle cognitive changes. This trial is currently recruiting participants ([read more](#)).

[Read more](#) about exercise and MS

[Read more](#) about cognitive changes in MS

[Download](#) a brochure about managing cognitive challenges