

Resistance training may slow down the progression of multiple sclerosis

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Demyelination by MS. The CD68 colored tissue shows several macrophages in the area of the lesion. Original scale 1:100. Credit: [CC BY-SA 3.0](#) Marvin 101/Wikipedia

In the past, multiple sclerosis patients were advised not to exercise for fear of exacerbating the condition. However, it is now known that physical training can relieve many of the symptoms, including the

excessive fatigue and mobility impairments that are often seen. New research now shows that resistance training may protect the nervous system and thus slow the progression of the disease.

This is the main finding of a study conducted by a research partnership between Aarhus University, Aarhus University Hospital, the University of Southern Denmark and the University Medical Center Hamburg-Eppendorf, that has just been published in the *Multiple Sclerosis Journal*.

The study shows that resistance [training](#) has a number of positive effects on the [brain](#), which go beyond what can be achieved through effective disease-specific medication.

"Over the past six years, we have been pursuing the idea that physical training has effects on more than just the symptoms, and this study provides the first indications that physical exercise may protect the nervous system against the disease," says associate professor Ulrik Dalgas from the Department of Public Health at Aarhus University.

"For the past 15 years, we have known that [physical exercise](#) does not harm people with [multiple sclerosis](#), but instead often has a positive impact on their ability to walk, their levels of fatigue, their muscle strength and their aerobic capacity, which has otherwise often deteriorated. But the fact that physical training also seems to have a protective effect on the brain in people with multiple [sclerosis](#) is new and important knowledge," says Ulrik Dalgas.

In the study, the researchers followed 35 people with multiple sclerosis for six months. Half of the group engaged in resistance training twice a week, while the other half continued to live their lives normally without systematic training.

Prior to and following the six-month period, the researchers conducted

MR scans of the subjects' brains and observed that there was a less brain shrinkage in those patients who undertook [resistance training](#).

"Among persons with multiple sclerosis, the brain shrinks markedly faster than normal. Drugs can counter this development, but we saw a tendency that training further minimises [brain shrinkage](#) in patients already receiving medication. In addition, we saw that several smaller brain areas actually started to grow in response to training," says Ulrik Dalgas.

The researchers are still unable to explain why training has a positive effect on the brain in people with multiple sclerosis. A larger and more in-depth study could help to clarify this, and may also lead to improved treatment options, says Dalgas. However, he stresses that the aim is not to replace medication with physical training.

"Phasing out drugs in favour of training is not realistic. On the other hand, the study indicates that systematic physical training can be a far more important supplement during treatment than has so far been assumed. This aspect needs to be thoroughly explored," he says.

It is not yet clear whether all people with multiple sclerosis can benefit from this type of exercise, as it has not been sufficiently tested in the more severely affected patients. Therefore, Ulrik Dalgas is not recommending that all multiple sclerosis [patients](#) throw themselves into intensive physical training regimes without first seeking professional advice.

More information: Tue Kjølhede et al. Can resistance training impact MRI outcomes in relapsing-remitting multiple sclerosis? *Multiple Sclerosis Journal* (2017). [DOI: 10.1177/1352458517722645](https://doi.org/10.1177/1352458517722645)

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