MULTIPLE SCLEROSIS

Cognitive training provides lasting benefits for patients with multiple sclerosis

An intensive neuropsychological rehabilitation programme, administered over a 3-month period to patients with relapsing–remitting multiple sclerosis (MS), provides improvements in cognitive functions and quality of life that persist for at least 6 months after the end of the training period, according to new research published in *Multiple Sclerosis and Related Disorders*.

“...studies ... to date have used a diverse array of treatment strategies and outcome measures...”

Cognitive impairments and mood disorders are frequently experienced by patients with MS, and can profoundly affect quality of life. However, no consensus currently exists on the best way to address these problems, and the studies conducted to date have used a diverse array of treatment strategies and outcome measures, making it difficult to draw generalizable conclusions.

For the latest publication, Flavia Mattioli and her colleagues at the Spedali Civili di Brescia, Italy conducted a single-blind, randomized controlled study in 24 patients with stable relapsing–remitting MS. The study group ($n = 13$) received intensive neuropsychological training, including attention, information-processing and planning exercises, for 3 months, whereas the control group

($n = 11$) received no such intervention. Neuropsychological, mood and quality of life evaluations were conducted at baseline, 3 months and 9 months.

The 3-month results were reported in another paper in 2010, and the current study was designed to assess the persistence of the benefits observed at this stage. At the 9-month time point, 6 months after completion of the training programme, the study group—but not the control group—showed significant improvements in performance on neuropsychological tests. In addition, the study group showed a reduced prevalence of depression and an increased quality of life compared with the control group.

Mattioli and colleagues describe their rehabilitation programme as being “more ecological” than previous approaches; that is, the exercises are more relevant to the types of activities that a patient is likely to encounter in their daily life. The study design allowed the team to assess the effectiveness of the intervention at both individual and group levels, and the inclusion of the control group enabled a clear distinction to be made between practice effects—enhanced performance owing to repeated exposure to neuropsychological tests—and genuine cognitive improvements.

The researchers acknowledge that the homogeneity of their study cohort with respect to disability levels may limit the degree to which the results can be extrapolated to the wider MS population.

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They also highlight the difficulty of designing a suitable placebo control for trials of cognitive interventions. Despite these limitations, however, the team believes that their neuropsychological rehabilitation approach merits further investigation in larger groups of patients with MS.

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Original article Mattioli, F. et al. Persistence of the effects of attention and executive functions intensive rehabilitation in relapsing remitting multiple sclerosis. *Mult. Scler. Relat. Disord.* doi:10.1016/j.msard.2012.06.004

Further reading Mattioli, F. et al. Efficacy and specificity of intensive cognitive rehabilitation of attention and executive functions in multiple sclerosis. *J. Neurol. Sci.* **288**, 101–105 (2010)