

P899**Inpatient rehabilitation improves walking capacity and reduces fatigability in people with MS with walking fatigability**

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Introduction: Walking fatigability (WF) is a prevalent and disabling symptom in people with multiple sclerosis (pwMS), yet its responsiveness to exercise interventions remains underexplored.

Objectives/Aims: To evaluate the impact of inpatient multimodal rehabilitation program on walking capacity and WF in pwMS.

Methods: The 6-Minute Walk Test (6MWT) was performed before and after a 3-week inpatient rehabilitation program consisting of 12 sessions. WF was assessed using the Distance Walked Index (DWI, calculated as the percentage change in distance walked between minute 6 and minute 1 of the 6MWT). PwMS presenting a DWI $\leq -10\%$ (i.e., presenting WF) were included.

Results: Pre- and post-rehabilitation data from 111 pwMS with WF (55.4 ± 11.3 years) were analyzed. After rehabilitation, a significant increase in the total 6MWT distance was observed (233.4 ± 149.2 m to 263.8 ± 156.1 m, $p < 0.001$), along with a significant reduction in the DWI (-23.0 ± 13.7 to -9.8 ± 21.1 , $p < 0.001$). In a subgroup with a baseline 6MWT distance of less than 200 m ($n=60$) – considered a proxy for severe disability – significant improvements were observed in the 6MWT distance (120.3 ± 49.5 to 151 ± 71.2 , $p < 0.001$) and DWI (-28.1 ± 15.7 to -15.5 ± 18.9 , $p < 0.001$). Also, in pwMS walking more than 200 m at baseline, 6MWT distance significantly increased (from 366.5 ± 112.4 m to 396.4 ± 120.1 m, $p < 0.001$), along with a marked reduction in DWI (from -17.1 ± 7.6 to -3.2 ± 21.7 , $p < 0.001$).

Conclusion: A multimodal inpatient rehabilitation program significantly improved walking capacity and reduced WF in pwMS. Notably, even those with severe walking limitations showed improvements. These findings highlight the potential and provide the first evidence that inpatient rehabilitation interventions are effective in mitigating WF and increasing walking capacity in pwMS with WF.

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