

Publication

Trunk sway in mildly disabled multiple sclerosis patients with and without balance impairment

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 1194620**Author(s)** Findling, Oliver; Sellner, Johann; Meier, Niklaus; Allum, John H J; Vibert, Dominique; Lienert, Carmen; Mattle, Heinrich P**Author(s) at UniBasel** [Allum, John H.J.](#) ;**Year** 2011**Title** Trunk sway in mildly disabled multiple sclerosis patients with and without balance impairment**Journal** Experimental brain research**Volume** 213**Number** 4**Pages / Article-Number** 363-70**Keywords** Multiple sclerosis, Posturography, Balance, Rehabilitation

Multiple sclerosis (MS) causes a broad range of neurological symptoms. Most common is poor balance control. However, knowledge of deficient balance control in mildly affected MS patients who are complaining of balance impairment but have normal clinical balance tests (CBT) is limited. This knowledge might provide insights into the normal and pathophysiological mechanisms underlying stance and gait. We analysed differences in trunk sway between mildly disabled MS patients with and without subjective balance impairment (SBI), all with normal CBT. The sway was measured for a battery of stance and gait balance tests (static and dynamic posturography) and compared to that of age- and sex-matched healthy subjects. Eight of 21 patients (38%) with an Expanded Disability Status Scale of 1.0-3.0 complained of SBI during daily activities. For standing on both legs with eyes closed on a normal and on a foam surface, patients in the no SBI group showed significant differences in the range of trunk roll (lateral) sway angle and velocity, compared to normal persons. Patients in the SBI group had significantly greater lateral sway than the no SBI group, and sway was also greater than normal in the pitch (anterior-posterior) direction. Sway for one-legged stance on foam was also greater in the SBI group compared to the no SBI and normal groups. We found a specific laterally directed impairment of balance in all patients, consistent with a deficit in proprioceptive processing, which was greater in the SBI group than in the no SBI group. This finding most likely explains the subjective symptoms of imbalance in patients with MS with normal CBT.

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