Conclusions: Physical activity was reduced in PwMS from before to during the pandemic. Concerns of contracting COVID-19 and a loss of support were highly associated with reduced physical activity. There is a need to support PwMS aiming to increase physical activity. Physical activity programmes which address walking (the most frequent), disability and the use of wearable technology may be preferable.

Disclosure
Authors have nothing to disclose.

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Changes in sedentary behaviour and physical activity in response to an exercise intervention in persons with multiple sclerosis

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Introduction: A substantial body of evidence supports the beneficial effects of exercise for persons with Multiple Sclerosis (PwMS). However, recent systematic reviews indicate that current exercise interventions only increase self-reported exercise participation, but fail to increase objective measures of total physical activity (PA). This could indicate that PwMS compensate for exercise training (i.e. by decreasing their non-exercise PA or increasing sedentary behaviour [SB]), which might blunt exercise effects.
Objective: To assess physical activity changes of PwMS during a structured exercise intervention, in order to optimise exercise prescription guidelines and exercise benefits.
Aim: In this non-randomised pilot study, the effects of a running exercise intervention on whole-week PA, non-exercise PA and SB are compared between PwMS and healthy controls (HC).
Methods: Twenty-nine mildly-disabled PwMS (EDSS 0-4) and 26 HC completed 10 months of home-based, periodized exercise in which high-intensity interval training and moderate-intensity continuous training sessions were alternated. PA (stand time, low-intensity PA [LIPA] and moderate-to-vigorous PA [MVPA]) and SB (total SB and time in sedentary bouts of ⩾60min) were measured by accelerometry (activPAL3) for 7 consecutive days at baseline, and after 5 and 10 months of exercise. PA and SB were calculated as percentages of waking time/day for the whole week and for exercise (EX) and non-exercise (NONEX) days separately. Secondary outcomes included changes in fatigue, cardiorespiratory fitness, blood pressure, resting heart rate and fat percentage.
Results: There were no differences in baseline PA and SB between groups. During the intervention, both groups trained at a similar mean exercise intensity (mean±SEM: 79±1% of their maximal heart rate) for a total exercise duration of 62.2±1.5h. Interestingly, whole-week MVPA only increased in HC (MS: +0.2±0.4% *vs.*HC: +1.9±0.5%, p=0.035). Moreover, on NONEX days at both 5 and 10 months, PwMS significantly increased their total SB (MS: +2.8±1.2% *vs.*HC:-0.4±1.3%, p=0.029) and time in sedentary bouts of ⩾60min (MS: +0.7±0.2h*vs.*HC: +0.1±0.2h, p=0.003), while HC did not. Fatigue, cardiorespiratory fitness, resting heart rate and fat percentage improved similarly in both groups.
Conclusion: In contrast to HC, PwMS did not show a net increase in MVPA during a structured exercise training intervention due to increases in sedentary behaviour on non-exercise days.

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Can a seated 6-minutes knee antiphase movement test help understand walking fatigability in moderately disabled people with MS through a movement control perspective? Preliminary results

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Introduction: People with multiple sclerosis (pwMS) present often abnormal walking fatigability (prevalence among moderately disabled patients ~50%). Recent findings indicated that a seated 6-minute knee flexion/extension antiphase movement test (6AMT), which minimizes muscle and balance effort compared to the 6-minute walking test (6MWT), is a promising test to "isolate" and investigate central driven mechanisms. However, the feasibility and performance of moderate pwMS presenting walking fatigability on the 6AMT is not known.
Objectives: To investigate the performance in the 6AMT in moderate pwMS with and without walking fatigability and healthy people.
Methods: Twenty-four pwMS were divided into walking fatigability (MSWF: 55±7 years, EDSS 4.9±1, n=17) and non-walking fatigability (MSNWF: 58±11 years, EDSS 5.3±0.9, n=7) groups, using the distance walking index (DWI_{6-1}, cut-off of 10% of decline in distance), derived from the 6MWT, for allocation. Seventeen healthy people (HC- 51±6 years, n=17) composed the healthy control group. The participants performed the 6MWT at their maximum self-selected speed, recording the distance walked minute-by-minute and the total distance. After resting for 30 minutes, two trials (30 minutes apart) of a seated 6AMT were performed. Participants were asked to perform the 6AMT as fast as possible, simulating a walking pattern. Movement variability,