

## Accelerometer Protocol Adherence in a Sample of People with MS and Cognitive Impairment

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**Background:** Impaired cognitive function affects up to 70% of persons with MS, is regularly under diagnosed, poorly managed, and has few treatment options. Physical activity has been related to better cognitive performance in both healthy and cognitively impaired older adults. Research scientists have suggested the possibility of a comparable linkage between greater physical activity and better cognitive functioning in persons with MS. Methods used to quantify physical activity in persons with MS, such as wearing an accelerometer during waking hours for seven days, may be more challenging for a sample of persons with MS and cognitive impairment.

**Objectives:** To determine the feasibility of using accelerometers to characterize physical activity in persons with MS and cognitive impairment enrolled in a study investigating the effects of physical activity on cognitive function.

**Methods:** Persons with MS enrolled in the study scored  $\leq 55$  on the Symbol Digit Modalities Test (SDMT). Participants were given verbal and written instructions on wearing an ActiGraph GT3X accelerometer for seven consecutive days during waking hours. Participants wearing the accelerometer for  $\geq 600$  minutes were considered to have adequately adhered to the protocol.

**Results:** Sample characteristics (n=14): mean age  $41.9 \pm 9.8$ ; mean MS duration  $11.4 \pm 7.5$ ; mean years of education  $16.4 \pm 2.6$  years; mean SDMT raw score  $41.9 \pm 9.8$ ; 64% female; 79% White; 21% Black; 21% Hispanic; 79% relapsing-remitting MS; 7% secondary progressive MS; 14% primary progressive MS; 50% employed full or part-time and 29% unemployed due to disability. Eleven of fourteen participants (78.6%) had three or more days of  $\geq 600$  minutes of accelerometer wear time.

**Conclusions:** A sample of persons with MS and cognitive impairment was able to adhere to a seven-day accelerometer protocol. Improved adherence may be achieved by sending daily text, phone, or email reminders and/or by placing the accelerometer in a conspicuous place overnight (by their cell phone or tooth brush).

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