

## **DD SIG: Backward Walking and Cerebellar Dysfunction in People with Multiple Sclerosis- with Nora Fritz - Episode 34**

In this episode of 4D, we talk with Dr. Nora Fritz about her expansive research in the field of Multiple Sclerosis (MS) rehabilitation. Dr. Fritz talks with host Katy McGraw about her research on the relationship between backward walking velocity and falls, and the effects of cerebellar involvement on the motor and cognitive function in people with MS. Tune in to learn more about what PTs can be assessing and addressing to best serve the MS patient population. The Degenerative Diseases Special Interest Group is part of the Academy of Neurologic Physical Therapy –[www.neuroPT.org](http://www.neuroPT.org)

### **Guest information**

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<https://wayne.edu/people/fy7078>

### **Related Resources:**

Symbol Digit Modalities Test: <https://www.wpspublish.com/sdmt-symbol-digit-modalities-test>

Brief Visuospatial Memory Test:

[https://www.annarbor.co.uk/index.php?main\\_page=index&cPath=416\\_249\\_487](https://www.annarbor.co.uk/index.php?main_page=index&cPath=416_249_487)

### **Referenced Articles**

Edwards, E. M., Daugherty, A. M., & Fritz, N. E. (2022). Examining the influence of cognition on the relationship between backward walking and falls in persons with multiple sclerosis. *International Journal of MS Care*. <https://doi.org/10.7224/1537-2073.2021-130>

Edwards, E. M., Daugherty, A. M., Nitta, M., Atalla, M., & Fritz, N. E. (2020). Backward walking sensitively detects fallers in persons with multiple sclerosis. *Multiple Sclerosis and Related Disorders*, 45, 102390. <https://doi.org/10.1016/j.msard.2020.102390>

Edwards, E. M., Fritz, N. E., & Therrien, A. S. (2021). Cerebellar dysfunction in multiple sclerosis: Considerations for Research and Rehabilitation therapy. *Neurorehabilitation and Neural Repair*, 36(2), 103–106. <https://doi.org/10.1177/15459683211065442>

Edwards, E. M., Kegelmeyer, D. A., Kloos, A. D., Nitta, M., Raza, D., Nichols-Larsen, D. S., & Fritz, N. E. (2020). Backward walking and dual-task assessment improve identification of

gait impairments and fall risk in individuals with MS. *Multiple Sclerosis International*, 2020, 1–10. <https://doi.org/10.1155/2020/6707414>

Fritz, N. E., Edwards, E. M., Ye, C., Prince, J., Yang, Z., Gressett, T., Keller, J., Myers, E., Calabresi, P. A., & Zackowski, K. M. (2022). Cerebellar contributions to motor and cognitive control in multiple sclerosis. *Archives of Physical Medicine and Rehabilitation*, 103(8), 1592–1599. <https://doi.org/10.1016/j.apmr.2021.12.010>

Saymua, S., Laird, H., Nitta, M., Atalla, M., & Fritz, N. E. (2019). Motor, cognitive, and behavioral performance in middle-aged and older adults with multiple sclerosis. *Topics in Geriatric Rehabilitation*, 35(3), 199–208. <https://doi.org/10.1097/tgr.0000000000000235>