

Fatigability during a Standardized Walk Can Identify Older Adults in Early Stage of Functional Decline

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Fatigue in older adults is believed to be responsible for the well-established age-related decline in physical activity and functional capacity; however, there are limited objective assessments for measuring fatigue. Fatigability, a newly developed construct of fatigue assessment, is defined as the degree of fatigue experienced while performing a standardized task. **PURPOSE:** To determine whether measured fatigability during a standardized walking task can be used to identify well-functioning elderly individuals in early stage of functional decline. **METHODS:** Fatigability was assessed using the Borg rating of perceived exertion (RPE) scale (range 6-20) after 5 minutes of treadmill walking at 1.5 mile per hour (0.67 m/s) in 11 older members (5 women, aged 68 ± 7 yrs) of the Towson University Wellness Center. Functional capacity was assessed using components of the expanded Short Physical Performance Battery (SPPB) test consisting of time to complete 5 repeated chair stands, standing balance (semi-, full-tandem, and one-legged standing), and two measures of gait speed over 6 meters (normal walk and narrow walk). Aerobic capacity was assessed as time to complete the 400 meter portion of the Long Distance Corridor Walk. **RESULTS:** RPE after treadmill walking was inversely correlated with gait speed during the narrow walk ($r = -0.59$, $P = 0.05$), indicating that those who experienced greater fatigability required more time to complete this higher level functional task. Also, longer time to walk 400 meters showed a trend towards a higher degree of fatigability ($r = 0.53$, $P = 0.09$). The other components of the SPPB (chair stands, balance, and normal walk) were not significantly related to RPE. **CONCLUSION:** Greater fatigability assessed using a simple standardized treadmill test is associated with reduced performance during a higher level functioning task and reduced aerobic capacity, and thus may be used to identify well-functioning elderly individuals in the early stage of function decline.