

## Turning Parameters Affect Time up and Go Test Performance in Pre-Frail Community-Dwelling Elderly

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**Abstract :** Background: Frailty is associated with decreased physical performances that affect mobility of the elderly. Time up and go test (TUG) was the common method to evaluate mobility in the community. The purpose of this study was to compare the parameters in different stages of Time up and go test (TUG) and physical performance between pre-frail elderly (PFE) and non-frail elderly (NFE). We also investigated the relationship between TUG parameters and physical performance. Methods: Ninety-two community-dwelling older adults were as participants in this study. Based on Canadian Study of Health and Aging Clinical Frailty Scale, 22 older adults were classified as PFE ( $71.77 \pm 6.05$  yrs.) and 70 were classified as NFE ( $71.2 \pm 5.02$  yrs.). We performed body composition and physical performance, including balance, muscular strength/endurance, mobility, cardiorespiratory endurance, and flexibility. Results: Pre-frail elderly took significantly longer time than NFE in TUG test ( $p=.004$ ). Pre-frail elderly had lower turning average angular velocity ( $p = .017$ ), turning peak angular velocity ( $p = .041$ ) and turning-stand to sit peak angular velocity ( $p = .037$ ) than NFE. The turning related parameters related to open-eye stand on right foot, 30-second chair stand test, back scratch, and 2-min step tests. Conclusions: Turning average angular velocity, turning peak angular velocity and turning-stand to sit peak angular velocity mainly affected the TUG performance. We suggested that static/dynamic balance, agility, flexibility, and muscle strengthening of lower limbs exercise were important to PFE.

**Keywords :** mobility, agility, active ageing, functional fitness

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