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Editorial

Pacing longevity: Serial gait speed measurements and survival in older adults

Physical performance measures are key indicators of overall health and powerful predictors of clinical outcomes in older adults [1,2]. Gait speed has long been recognized as a simple yet robust predictor of negative health-related events (e.g., disability, hospitalization, mortality) in older adults across different settings [2,3]. However, gait speed has traditionally been treated as a static measurement, taken at one point in time to evaluate an individual's physical function.

The article by Perera et al. [4] provides novel insights into the dynamic relationship between gait speed and mortality. The authors evaluated how changes in gait speed (collected annually or every other year) predicted survival over 14 years in older community-dwellers from the Health, Aging and Body Composition Study. The authors used a jointly model approach for the simultaneous analysis of longitudinal gait speed data and mortality to appraise the impact of gait speed dynamics on mortality risk.

Consistent with existing literature [3], Perera et al. [4] showed that a faster gait speed was associated with reduced mortality, with 23% and 25% lower risk of death per 0.1 m/s increments in men and women, respectively. Sex-specific differences were found in the relationship between gait speed trajectories and mortality risk. Each 0.05 m/s annualized decrease in gait speed was associated with a 31–41% increase in mortality in men, while gait speed slope was not significantly associated with mortality in women. This suggests that men may be more vulnerable to the consequences of functional decline. Indeed, men may experience a time compression of the disabling cascade preceding death compared with women in whom non-fatal disabling conditions are more prevalent [5]. Alternatively, gait speed changes over time might capture different information in men and women. The study also shows that distant gait speed history plays a minimal role in predicting mortality risk beyond the most recent assessment. The authors infer that two most recent gait speed measurements are sufficient for assessing mortality risk. This is not surprising. Gait speed is acknowledged as a true vital sign in older adults. As such, one can expect the most accurate information be provided by measurements closer to the event rather than by those collected years earlier. This emphasizes the practical implications of the study by Perera et al. [4]. Indeed, the findings support the importance of incorporating serial measurements of gait speed into routine clinical assessments. Gait speed is increasingly being used to refine risk assessment in older adults undergoing cardiac surgery [6], in patients with blood cancers [7], and for the early detection of those at risk for falls [8] or dementia [9].

The study by Perera et al. [4] can contribute to the operationalization of the intrinsic capacity concept and the ICOPE (Integrated Care for Older People) approach promoted by the World Health Organization [10]. Intrinsic capacity refers to the "composite of all the physical and mental capacities that an individual can draw on at any point in time" [11], encompassing a broader view of health beyond chronological age and specific diseases. Gait speed is a key marker of the locomotor domain of intrinsic capacity [12]. The regular monitoring of gait speed, as highlighted by Perera et al. [4], provides a valuable indicator of how well mobility is preserved over time, with declines often signaling substantial health deterioration. The ICOPE approach emphasizes person-centered care to maintain and optimize functional capacity [13]. Serial gait speed measurements allow for early detection of mobility decline, enabling healthcare providers to timely intervene with targeted strategies, such as the promotion of physical activity or delivery of rehabilitation programs, to preserve function and prevent adverse outcomes [14].

Despite the promising findings, the study leaves room for further investigation. The authors acknowledge that more frequent gait speed assessments could yield further insights into short-term fluctuations in physical performance, which may be particularly relevant for high-risk populations. Moreover, the study sample was limited in terms of race and geography (i.e., participants were exclusively of White and Black races from specific metropolitan areas in the United States), suggesting that broader studies are needed to extend the generalizability of the results. Differences in healthcare access, socioeconomic status, and lifestyle factors across regions may affect gait speed trajectories and their relationship with mortality, making it essential to validate the findings in different settings and populations [15,16].

In conclusion, Perera et al. [4] made a valuable contribution to geriatric research by demonstrating the importance of serial gait speed measurements in predicting mortality in older adults. Their findings suggest that recent changes in gait speed offer a reliable indicator of mortality risk, especially when considering sex-specific differences in physical function decline. By integrating dynamic gait speed assessments into routine practice, clinicians will have useful information to design timely interventions to improve health outcomes in older adults.

Conflict of interest

The authors have no conflict of interest to disclose.

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