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Mobility decline in old age: A time to intervene

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By 2050, the number of adults aged 60 years and older will double from approximately 10% to 20% of the world's population. It likely will be the first time that that older adults outnumber younger adults. The aging of the population will undoubtedly result in higher levels of physical and cognitive disabilities that result from the aging process and chronic disease conditions that plague older adults. Mobility impairments in community dwelling older adults represent a pre-clinical transitional stage in the pathway to disability. Those who lose independent mobility are less likely to remain in the community, have higher rates of disease, have a poorer quality of life and greater likelihood of social isolation (4). The review provided by Rantakokko and colleagues in this issue of Exericse and Sport Sciences Reviews highlights a collection of work that provides a thorough understanding of mobility decline in older adults (5). The contribution is important because it outlines measurements, origins, and risk factors for mobility impairments. Such an effort provides useful targets for interventions to treat and prevent mobility impairments and the onset of physical disability in older adults.

Mobility impairments in older adults are a dynamic process characterized by frequent transitions between being independent and dependent on others. Work by Gill and colleagues have demonstrated that those who respond they need personal assistance walking one quarter mile — a seemingly fixed event — often spontaneously recover their independence (2). Additionally, approximately 80% of those who report needing help with basic activities of daily living (bathing, dressing, walking, and transferring) recover their ability to perform these activities independently within one year (3). While the factors causing a person to spontaneously recover their independence is not completely known, persons who were older age, female, severely disabled, cognitively impaired, and physically frail when they first reported their impairments were less likely to recover (2, 3). These findings suggest mobility disability and declines are often transient and not an enduring condition without recovery. Given the high prevalence and major health impact of mobility impairments, interventions that target maintaining recovery during transitional states are highly needed.

There are few evidence-based treatments or prevention strategies for reducing mobility impairments in older adults. Fortunately, the complex nature of mobility impairment that includes both intra-individual (*e.g.*, depression, physical fitness, pathologies) and environmental factors (*i.e.*, social and physical) provides ample opportunities to intervene. There is a wealth of evidence that mobility function is closely linked to cardiovascular and muscular fitness, and, therefore, exercise can have important role in prevention and treatment of mobility impairments despite underlying comorbidities. Behavioral interventions that use lifestyle modification of physical activity behaviors are promising and

there is evidence of benefit in specific “at risk” populations. For example, obese older adults with osteoarthritis significantly improved their mobility function following aerobic and resistance exercise (1). While there is a large literature reporting mobility improvements following exercise interventions, these studies tend to be small, short in duration and in select populations. Long-term behavioral interventions to combat mobility impairments originating from a variety of conditions have yet to be rigorously tested in clinical trials. However, there are challenges to using behavioral interventions for both prevention and treatment of mobility impairments. For prevention to be successful, the intervention needs to be started early in life and maintained. For treatment, a population at risk for mobility impairments needs to be identified and treated for an indefinite amount of time. To meet these challenges, treatment and prevention of mobility impairments will require a major collaborative effort (*e.g.*, psychologists, geriatricians, and exercise physiologists). It is hoped that overcoming these challenges will reduce the burden of mobility impairments for older adults and their families.

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