

Elderly people's frailty and physical fitness.

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Editorial

Frailty, a consequence of the interaction of the aging process and certain chronic diseases, compromises functional outcomes in the elderly and substantially increases their risk for developing disabilities and other adverse outcomes. Frailty follows from the combination of several impaired physiological mechanisms affecting multiple organs and systems. And, though frailty and sarcopenia are related, they are two different conditions. Thus, strategies to preserve or improve functional status should consider systemic function in addition to muscle conditioning. Physical activity/exercise is considered one of the main strategies to counteract frailty-related physical impairment in the elderly.

Exercise reduces age-related oxidative damage and chronic inflammation, increases autophagy, and improves mitochondrial function, myokine profile, Insulin-Like Growth Factor-1 (IGF-1) signalling pathway, and insulin sensitivity. Exercise interventions target resistance (strength and power), aerobic, balance, and flexibility work. Each type improves different aspects of physical functioning, though they could be combined according to need and prescribed as a multicomponent intervention. Therefore, exercise intervention programs should be prescribed based on an individual's physical functioning and adapted to the ensuing response.

The aging process is a somewhat more complex issue than just the passing of time. Aging is characterized by several highly prevalent changes, including an increase in morbidity and a decrease in functional performance which, although linked, are two separate conditions. In fact, as we age, functioning increasingly becomes the factor most strongly associated with quality of life and the risk for several adverse outcomes, including hospitalization, permanent institutionalization, use of health and social resources, and death.

Frailty is a clinical syndrome that affects multiple key systems including the endocrine, respiratory, and cardiovascular systems as well as the skeletal muscle. This syndrome often marks the onset of the process known as "Cycle of Frailty" which leads to

sarcopenia and other multi-systemic failures. Close knowledge on how the aging process interacts with chronic diseases to impair organic systems function and bring about frailty is key for designing successful preventative strategies.

Engaging in regular, physical activity is an important factor affecting the quality of life of older adults. Previous studies have highlighted a strong association between physical functioning and Health-Related Quality Of Life (HRQoL) in older adults, which indicates that physical functioning, may help predict future hospitalization and care needs. Several studies have shown that increasing the physical activity of older adults may lower the risk of falling and physical disabilities and slow down the aging process. Encouraging regular physical activity among community residents is regarded as an important, nonpharmacological treatment.

Especially in older adults, increasing the amount of physical activities performed during leisure time helps maintain health and prevent declines in quality of life, highlighting the important link between physical activity and HRQoL. Similar to muscular strength, muscular endurance and dynamic homeostasis have been identified as risk factors of frailty in studies on older community residents. Thus, further investigation of the impact of physical activity on quality of life in older adults is necessary.

Frailty leading to a decline in physical function is one of the manifestations of geriatric syndrome. As age increases, people who become frail will experience further deterioration in organ function, inducing negative effects across various bodily systems, the outcomes of which will affect health and quality of life. Frailty leads not only to many complicated problems but also to a decline in independent living skills, resulting in the inability to prepare meals or to undertake activities. Insufficient protein intake reduces muscle mass, whereas insufficient caloric intake for daily needs leads to malnutrition. Physical fitness reflects the health status of an individual. Poor health and frailty lead to declining physical function. Pain, disability, depression, chronic disease, and frailty status in older adults have all been identified as significant indicators of quality of life.

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