

## Is there enough evidence to prescribe exercise to older adults living in residential care?



The management of health conditions that predispose individuals to the loss of independence (eg, frailty or cognitive impairment) is a public health concern and a topic of great interest to professionals who care for older adults. Evidence from randomised clinical trials shows that exercise improves physical performance in community-dwelling older adults.<sup>1,2</sup> However, little information is available to guide prescription of physical exercise for maintenance or improvement of physical function of older adults living in residential care, which can increase their quality of life.<sup>3</sup>

In *The Lancet Healthy Longevity*, Pedro Valenzuela and colleagues<sup>4</sup> report their findings from a systematic review and network meta-analysis of the effects of physical exercise on older adults in residential care. They report that individual exercise types (eg, resistance and endurance) and multicomponent exercises can improve the physical function of older adults living in long-term care. The findings were drawn from a comprehensive literature search that encompassed six well established databases, and included articles published in English and Spanish. Pooled results of the network meta-analysis showed that the most consistent benefits were had with endurance-based training protocols compared with other single-exercise categories, and moderate-to-large effects were reported by studies conducted in nursing homes or with older adults with dependence for activities of daily living, frailty, or cognitive impairment.<sup>4</sup>

Despite the encouraging findings, some important points need consideration. Several studies included in the meta-analysis compared exercise and control groups with highly heterogeneous baseline characteristics, did not perform intention-to-treat analyses, or did not control results for physical activity levels. Concerningly, only 12.9% of the included studies specified exercise variables (eg, intensity, volume, and frequency) and only 42.9% gradually tailored the exercise load to keep it constant.<sup>4</sup>

These limitations prevented Valenzuela and colleagues from conducting deeper statistical analyses to establish which exercise characteristics could maximise improvements in physical performance in older adults living in residential care homes. Not all exercise protocols

are equally effective at increasing muscle strength, power, and mobility,<sup>5</sup> and specific combinations might be required for different subpopulations.<sup>5,6</sup> In the absence of definite guidance, exercise prescribers need to consider a vast array of possibilities to select the most suitable training choices.

Valenzuela and colleagues' finding that endurance training protocols had more consistent effects than other exercise types is of particular interest. Older adults living in residential care homes are often physically disabled, frail, and have low resistance to fatigue,<sup>7</sup> and might not be able to perform endurance training, particularly at the beginning of the intervention. Thus, this finding might be a reflection of the results seen with participants living in assisted living or home-care settings. Notwithstanding, the authors found that nursing-home residents had greater improvements in physical performance than did residents in other settings. Taken together, these findings emphasise the heterogeneity of the population of older adults living in residential care, and who might consequently benefit more from individually tailored interventions than from one-size-fits-all training programmes.

Physical performance is a large construct that encompasses several motor tasks, from simple actions that involve only small muscle groups and single joint movements (eg, metacarpal flexion), to complex motor tasks that require interaction among numerous motor units, muscle groups, and joints (eg, walking). As such, physical performance cannot easily be examined in its entirety, but data pertaining to individual physical tests should be routinely collected to allow for a better appreciation of an individual's functional status. Physical capacities that are apparently similar—such as muscle strength and power, for example—might predict negative health outcomes quite differently.<sup>8</sup> Likewise, muscle strength tests for upper and lower extremities are not equally associated with whole-body strength and physical performance,<sup>9</sup> and performance-based and self-reported functional measures capture different aspects of physical function.<sup>10</sup> Hence, a toolkit of validated functional tests suitable for older adults living in residential care homes is necessary

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to obtain comparable results. To advance the care of this clinically vulnerable population, convening task forces of experts in geriatric medicine, exercise physiology, and physical and occupational therapy will be essential for the identification of appropriate exercise interventions combining efficacy, safety, and feasibility, and that will bring maximum benefits to older adults in long-term care.

We declare no competing interests.

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