Commentary on “Perception of Postural Limits in Elderly Nursing Home and Day Care Participants”

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THE perceptions held by older adults are important, because they often lend insight into a variety of behaviors including cognition, memory, and motoric activities related to balance and postural stability. In the article by Robinovitch and Cronin in this issue (pages B124–B130), attention is drawn to the role of perception with respect to the recognition of reaching capabilities among younger and older individuals. The authors suggest that those older adults whose reach capabilities appeared more restricted tended to overestimate their abilities to reach and that this fact might be associated with a lack of awareness of their movement capabilities and may potentially predispose these individuals to falls. There may well be some merit to this hypothesis. At the very least, their results reinforce the importance of studying the roles of attention and cognition in postural stability, concepts that have recently drawn much needed discussion through the excellent work of Shumway-Cook and colleagues (1) as well as other investigators (2,3).

Robinovitch and Cronin conclude from the data that younger individuals underestimate reaching limits, thus invoking cautionary or safety considerations during reaching, whereas older adults might be less careful and overestimate their reaching ability. This interpretation can be open to alternative interpretations. The fact is that in terms of actual versus estimated arm length or reach, older subjects were actually more accurate than younger subjects (Table 1). Moreover, the suggestion that older subjects tended to overestimate reach may be “stretching” interpretation of the data too far. The reality is that the prediction of fall events from the functional reach test is more closely aligned with older adults whose reach capability was limited to 6–8 inches (4). Applying that fact to the data the authors present in Table 2 and Figure 3 does not diminish the statistical finding but does lead to a potential exaggeration of the data. So, if one limits the evaluation of the data in Figure 3 to those older subjects whose actual arm reach is 20 cm (about 8 inches) or less (those most prone to potential falls) and who overestimated their bending by 10 cm or more, then only 12 of 46 older subjects (approximately 25%) account for the overestimating group, hardly enough to place firm belief in the conclusion drawn from the data.

An alternative interpretation is that the older subjects are actually far more aware of the accuracy of their actual and estimated arm length and bending but overestimate because to do otherwise would betray their concern for eminent loss of independence. Often older individuals will overestimate if the alternative is to reveal behaviors that might threaten the security of maintained living in their immediate environment or the autonomy of the life to which they have become accustomed. Alternatively, a lack of experience in the task might lead some older individuals to overestimate capabilities based upon a recall of what they used to be able to do.

In either event, looking at other factors, such as comorbidities, immediate past falls histories or living/activities environment (nursing home vs day care centers), or movement limitations (e.g., leg length discrepancies, scoliosis or kyphosis or axial skeletal pathologies, including spondylosis or arthritis) as covariates might lend further clarification to interpreting the data set. In our experience during the FICSIT (Falls and Injuries Cooperative Studies on Intervention Techniques), falls often occurred, not because of “risk taking” or inadequate recognition of reach, but probably because of an inability to process multiple sensory stimuli within the context of the environment (5). In our present exercise studies, among the 110 older adults transitioning toward frailty whom we have screened, there is no apparent relationship between past falls histories and functional reach. All these subjects have fallen at least once in the past year and their reach has varied from just a few inches to over 14 inches.

Finally, in the present study it would not be prudent to address “motor impairments” as an explanation for reach limitations without first measuring such limitations. In any event, Robinovitch and Cronin should be complemented for drawing the importance of older adults’ perceptions of reach as a basis to explore a variety of physiologic, behavioral and environmental correlates that might contribute to compromised postural stability.

REFERENCES