Does exercise reduce falls in older adults living in nursing homes?

**Bottom line**

The evidence is mixed regarding the efficacy of exercise to prevent falls in older adults living in nursing homes. Combined strength and balance programs lasting 6 months or more, delivered 2 to 3 times a week, may be effective (SOR: C, inconsistent meta-analyses).

**Case**

During a visit to see a new nursing home patient, the patient’s daughter expresses concern regarding the number of falls her father has had in the past year. She wonders if there is anything he or others can do to prevent further falls.

**Evidence summary**

Authors of a 2015 meta-analysis of 13 studies, including nearly 23,000 nursing home residents, investigated fall prevention programs in nursing homes.\(^1\) Seven of the 13 studies included physical activity or exercise; most studies used a multidisciplinary approach. Physical activity was defined as strength and resistance, gait, balance and/or functional training.

The meta-analysis failed to show an effect on number of falls per resident year or number of people falling (RR 0.93; 95% CI, 0.76–1.13).\(^1\)

A 2013 meta-analysis focused on studies specifically designed to assess the effect of exercise on fall prevention in older adults living in nursing homes.\(^2\) This analysis of 9 studies, including 1,292 long-term care patients, concluded that exercise was effective to prevent falls if both strength and balance exercises were emphasized (RR 0.71; 95% CI, 0.5–0.90). Additionally, exercise was more effective if implemented for more than 6 months with a frequency of 2 to 3 times per week (RR 0.70; 95% CI, 0.56–0.87).

Authors of a 2012 systematic review of more than 60,000 patients in both hospitals and long-term care facilities found inconsistent results regarding exercise programs to reduce falls.\(^3\) Overall, no difference was noted in rates of falls (RR 1.03; 95% CI, 0.81–1.31) or risk of falling (RR 1.07; 95% CI, 0.94–1.23) between exercise and control groups. Similar lack of effect was noted in a subanalysis of patients in long-term care facilities only.

Post hoc analysis by level of care, however, found that exercise might reduce falls in people in intermediate-level facilities. The duration of the 4 intermediate-care studies included in this analysis was 6 to 12 months compared to 4 to 12 months in the high-level nursing care facilities. Post hoc analysis by frailty also found that exercise increased falls in people who were more frail.\(^3\)

A 2011 meta-analysis of 41 RCTs assessed the recruitment, attrition, and adherence of falls prevention programs in institutional settings.\(^4\) Of the 41 trials, 15 studies (n=335) were classified as exercise interventions. Of the patients who exercised, there was no significant difference in fall rates between those who adhered to the program and those who did not. This finding was true for all types of exercise, including high intensity, endurance, and tai chi. The authors noted that adherence rates were high for individualized and group-based exercise, although specific rates were not presented.

**Case Wrap-Up**

The family should be made aware that most studies do not support the use of exercise programs to prevent falls in the long-term care setting. Such programs might actually harm more frail patients. To be effective at all, combined strength and balance training would likely be required several times a week for at least 6 months.

**REFERENCES**