

## News Release

### Title

Effect of various exercises on frailty among older adults with subjective cognitive concerns: a randomized controlled trial

### Key Points

- Aerobic training potentially reverses frailty, especially in the depression and anxiety component, in older adults with subjective cognitive concerns.
- Using a comprehensive tool such as Frailty Index to assess intervention effects is warranted.
- Home-based exercise program with minimal equipment and space is worth incorporating into management of frailty.

### Summary

The team of Professor Masafumi Kuzuya from Institute of Innovation for Future Society and Department of community Health & Geriatrics carried out a single-blind randomized controlled trial in Toyota, Japan. The trial aimed to clarify the effects of physical exercise in community-dwelling older adults with subjective cognitive concerns. The results showed that a 26-week aerobic training reduced frailty modestly in older adults with subjective cognitive concerns, especially in the depression and anxiety component. However, neither resistance training nor combined training (aerobic training plus resistance training) provided benefits on frailty reduction.

### Research Background

Frailty is a clinical state in which there is an increase in an individual's vulnerability for developing increased dependency or mortality. In addition, frailty has been widely shown to be associated with poor health outcomes, including falls, hospitalization, and institutionalization. Frailty can occur as the result of a range of diseases and medical conditions.

Physical exercise has been linked to reduced frailty for patients with mild cognitive impairment and dementia. However, there is insufficient favorable evidence of physical exercise for community-dwelling older adults with subjective cognitive concerns. To clarify the effects and the most beneficial types of physical exercise in this population, we conducted a single-blind randomized controlled trial in Toyota, Japan.

### Research Results

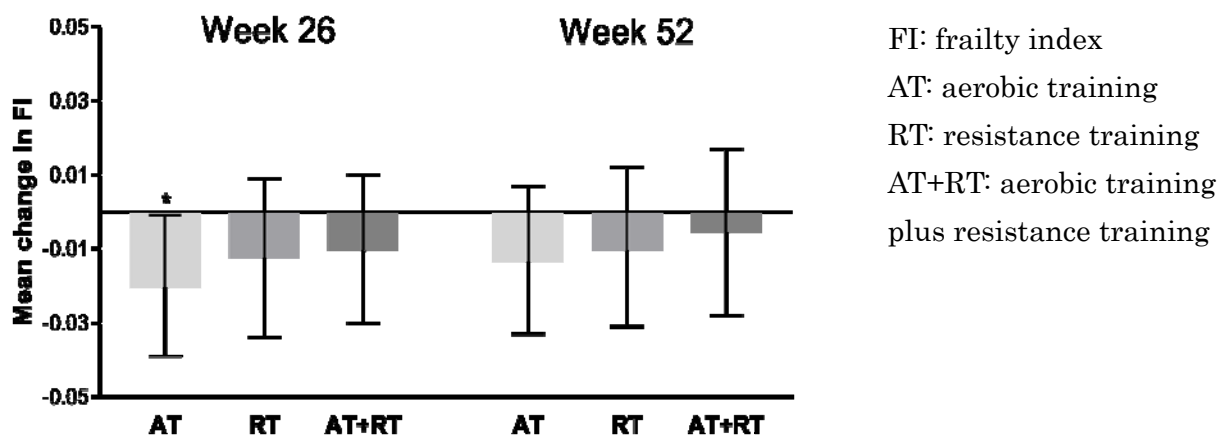
We screened residents aged 65–85 years using the Kihon checklist; those with subjective cognitive concerns were invited for eligibility assessment. In total, 415 community-dwelling older adults were enrolled and randomized.

All participants were randomized into aerobic training (step-in-place exercise and walking workout), resistance training (resistance-band workouts and bodyweight exercises), combined training programs (aerobic training plus resistance training), or the control group. Participants in the intervention groups underwent a group training program and self-paced home training for 26 weeks. The control group only received lectures about health promotion. A 95-item frailty index (the lower the better) was utilized to determine the effects of physical training. Participants were followed up at weeks 26 and 52.

At baseline, mean age of all participants (47% women) was 72.3±4.6 years. Compared with control group, aerobic training improved total frailty index by -0.020 (effect size -0.275) and the depression and anxiety component of frailty index by -0.051 (effect size -0.469) at week 26, but the effects waned at week 52.(figure) No significant differences in frailty index were found in resistance training and combined training groups at week 26 and 52.

### Research Summary and Future Perspective

A 26-week aerobic training reduced frailty modestly, especially in the depression and anxiety component, in older adults with subjective cognitive concerns. To reverse frailty and improve management, implementation of aerobic exercise training is recommended to be an integral part of comprehensive intervention strategies.



### Publication

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