News Release

Title

What type of exercise is the most effective for preventing cognitive decline in older adults?

Key Points

- Aerobic exercise training can improve delayed memory in older adults.
- The effect is more pronounced in individuals without objective memory decline.
- The findings of the current study could be applied to the development of evidence-based guidelines for the dementia risk reduction.

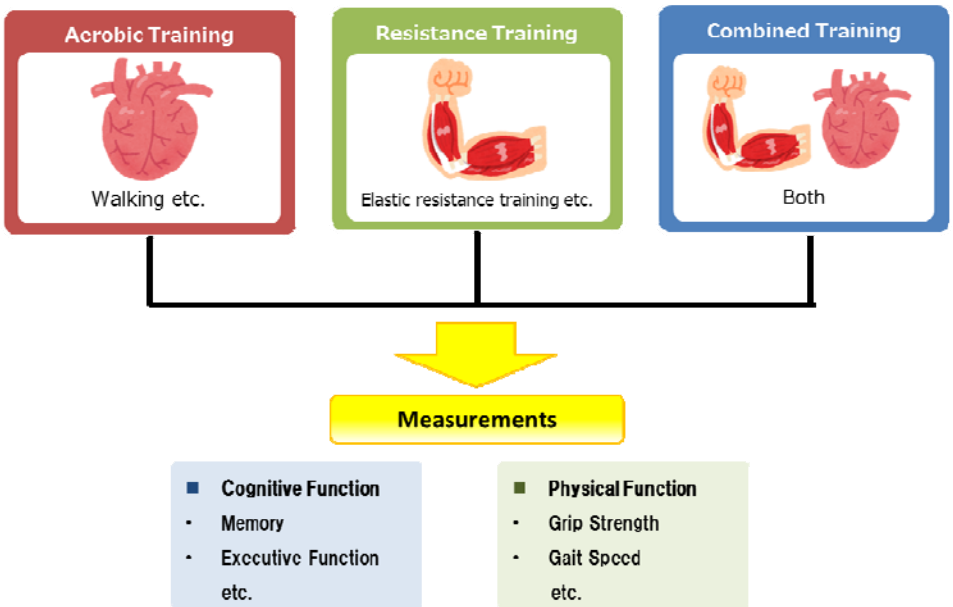
Summary

The research team led by Dr. Masafumi Kuzuya from Institute of Innovation for Future Society and Department of community Health & Geriatrics investigated the effects of different exercise modalities on cognitive function in community-dwelling older adults.

Physical activity and exercise have been suggested to be effective for preventing cognitive decline in older adults, but the relative efficacy of different types of exercise have yet to be clarified. We evaluated similarities and differences among the effects of aerobic exercise training, resistance exercise training, and combined exercise training on cognitive function in community-dwelling older adults.

Participants in the aerobic exercise training group showed a significant improvement in delayed memory function compared to those in the control group. The effect of training was more pronounced in the non-amnesia group than in the amnesia group. The findings of the current study could be applied to the development of evidence-based guidelines for the dementia risk reduction.

This work was supported by JST COI Grant Number JPMJCE1317.



Research Background

There has been considerable interest in slowing cognitive decline and delaying dementia onset through behavioral interventions. Physical activity and exercise have been suggested to be effective for preventing cognitive decline in older adults, but the relative efficacy of different types of exercise have yet to be clarified. We evaluated similarities and differences among the effects of aerobic exercise training, resistance exercise training, and combined exercise training on cognitive function in community-dwelling older adults.

Research Results

A single-blinded RCT named "TOyota Prevention Intervention for Cognitive decline and Sarcopenia" (TOPICS) was designed. Older adults at high risk for future decline in instrumental activities of daily living, were screened using the "Kihon Checklist" questionnaire, which was sent by the Toyota City municipal government to citizens aged ≥65 years. After completion of the baseline assessment, participants were randomly assigned to one of the four groups using a minimization algorithm. Participants in the aerobic exercise training, resistance exercise training, and combined exercise training groups exercised under the supervision of well-trained fitness instructors for 60 minutes/day, two days/week, for a total of 52 sessions over the first 26 weeks. The participants were evaluated at baseline before randomization, 26 weeks (postintervention), and 52 weeks (follow-up).

Participants in the aerobic exercise training group showed a significant improvement in delayed memory function compared to those in the control group. The effect of training was more pronounced in the non-amnesia group than in the amnesia group.

The current study suggests that the AT intervention can improve delayed memory function in older adults, particularly in individuals without objective memory decline.

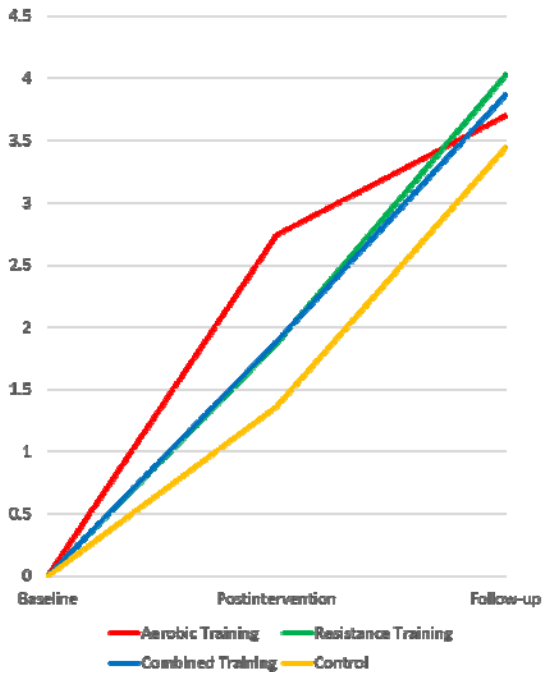


Figure. Changes in delayed memory scores

Research Summary and Future Perspective

The findings of the current study could be applied to the development of evidence-based guidelines for the dementia risk reduction.

Publication

Taeko Makino, Hiroyuki Umegaki, Masahiko Ando, Xian Wu Cheng, Koji Ishida, Hiroshi Akima, Yoshiharu Oshid*a*, Yasuko Yoshida, Kazuki Uemura, Hiroyuki Shimada, Masafumi Kuzuya

Effects of Aerobic, Resistance, or Combined Exercise Training Among Older Adults with Subjective Memory Complaints: A Randomized Controlled Trial

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https://www.med.nagoya-u.ac.jp/medical_J/research/pdf/Alz_Dis_210529.pdf