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Combination of Resistance and Aerobic Exercise Best for Older Persons with Obesity

Clinical Question

In older adults with obesity who have mild to moderate frailty, what is the best type of exercise program?

Bottom Line

In older patients with obesity embarking on a program to improve their health, weight loss accompanied by resistance training and aerobic training resulted in the biggest gains in functional status and physical performance. (Level of Evidence = 1b)

Synopsis

A previous study by these researchers showed that in older adults with obesity, the combination of exercise and weight loss was better at improving function than either alone (*N Engl J Med*. 2011;364(13):1218-1229). The current study identified 160 adults, 65 years and older, with a body mass index (BMI) of at least 30 kg per m² who had mild to moderate frailty based on a standardized test of

physical function (the Physical Performance Test; range = 0 to 36 points, where higher is better). All were deemed healthy enough to participate in an exercise program. The mean age of participants was 70 years, approximately two-thirds were women, nearly 90% were white, and their average BMI was 37 kg per m². They were randomized into one of four groups: aerobic exercise plus weight loss, resistance exercise plus weight loss, both types of exercise plus weight loss, and no intervention. Aerobic exercise consisted of three one-hour sessions per week, and resistance training also consisted of three one-hour sessions weekly. Of the 160 patients, 141 completed the six-week trial; analysis was by intention to treat, and a similar number were lost to follow-up in each group. Outcomes were assessed by persons masked to the intervention.

At the end of the study, persons in the intervention groups lost an average of 8% to 10% of their body weight. The authors evaluated a range of measures, both physiologic and functional. The Physical Performance Test and the Functional Status Questionnaire score increased the most in the group that did resistance training plus aerobic exercise. This group's improvements in strength were similar to those of the resistance training-only group; one theory was that doing both would mitigate the benefit of each type of exercise, which was not the case. Finally, exercise was not without risks. Adverse events included atrial fibrillation and a variety of joint pains and back pains.

Study design: Randomized controlled trial (single-blinded)

Funding source: Government

Allocation: Uncertain

Setting: Population-based

Reference: Villareal DT, Aguirre L, Gurney AB, et al. Aerobic or resistance exercise, or both, in dieting obese older adults. *N Engl J Med*. 2017;376(20):1943-1955.

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