Strength vs. endurance—does exercise type matter in the fight against obesity?

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Credit: Peter Griffin/Public Domain

Medical experts widely recommended a combined program of diet and fitness to fight obesity. But when it comes to the type of exercise most effective a reducing weight and body mass—strength training, endurance exercise or a combination of both—opinions vary widely on which exercise regimen is best. Now, a new clinical study by a team of Spanish researchers working as part of the Nutrition and Physical Activity Programs for Obesity Treatment project suggests that the type of exercise may be less important than previously thought.

Researchers from the Technical University of Madrid and La Paz University Hospital set out to measure whether the type of exercise—endurance training, strength training, strength plus endurance training or simply following government recommendations for weekly activity goals—combined with diet made a significant difference on body weight and body composition. Their article "Change in weight and body composition in obese subjects following a hypocaloric diet plus different training programs or physical activity recommendations" is published in the *Journal of Applied Physiology*.

The research team followed 96 obese subjects (48 men and 48 women) ranging in age from 18 to 50 through a 22-week supervised program. All participants followed a similar reduced-calorie diet. The diet was measured to provide each individual with 30 percent fewer calories than he or she burned each day.

In addition to the diet, participants were randomly assigned to follow one of three different types of exercise training programs or to follow the American College of Sports Medicine recommendations for weekly physical activity. Subjects assigned to exercise training groups performed either endurance exercise alone (their choice of running, elliptical or cycling); strength exercises alone (shoulder press, squats, barbell row, biceps curl, lateral split, front split, bench press and French press); or a combination of strength and endurance exercises (choice of cycling, treadmill or elliptical plus squats, rowing machine, bench press and front split). All subjects performed their exercise programs three times a week for the same length of time and at the same intensity (51 minutes at 50 percent intensity during weeks 2–5; 50 minutes at 60 percent intensity in weeks 6–14; 60 minutes at 60 percent intensity in weeks 15–22).

Participants following the physical activity guidelines were advised to get 30–60 minutes of exercise on most, if not all, days of the week for a total of 200–300 minutes of moderate-intensity activity. They were also encouraged to swap walking for driving, take the steps instead of the elevator and to undergo other lifestyle interventions to increase daily activity.

Perhaps surprisingly, the outcomes for the participants—including significant reductions in body weight, body mass index, waist circumference, total fat mass, and a significant increase in lean mass—were positive across the board despite the

differences in the type of exercise performed.

"To our knowledge, this is the first clinical trial designed to examine the effect of different physical activity interventions, in combination with a hypocaloric diet, on body weight and composition variables in obese Spanish people," the research team wrote. "The present study shows that, when adhered to alongside a hypocaloric diet, different exercise training programs (endurance, strength, or their combination) or the following of physical activity recommendations are equally efficient in terms of improving body weight and body composition variables in obesity management." They stressed the importance of adding exercise from the health point of view. "One calorie burned in exercise is not the same as one not ingested," they said.

More information: "Change in weight and body composition in obese subjects following a hypocaloric diet plus different training programs or physical activity recommendations." *Journal of Applied Physiology* Published 15 April 2015 Vol. 118 no. 8, 1006-1013 DOI: 10.1152/japplphysiol.00928.2014

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