

Aerobic exercise trumps resistance training for weight and fat loss

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Aerobic training is the best mode of exercise for burning fat, according to Duke researchers who compared aerobic training, resistance training, and a combination of the two.

The study, which appears Dec. 15, 2012, in the [Journal of Applied Physiology](#), is the largest [randomized trial](#) to analyze changes in [body composition](#) from the three modes of [exercise](#) in overweight or [obese adults](#) without diabetes.

Aerobic exercise – including walking, running, and swimming – has been proven to be an effective way to lose weight. However, recent guidelines have suggested that resistance training, which includes weight lifting to build and maintain muscle mass, may also help with weight loss by increasing a person's resting metabolic rate. Research has demonstrated health benefits for resistance training, such as improving [glucose control](#), but studies on the effects of resistance training on fat mass have been inconclusive.

"Given that approximately two-thirds of adults in the United States are overweight due to excess body fat, we want to offer clear, evidence-based exercise recommendations that will truly help people lose weight and body fat," said Leslie H. Willis, MS, an [exercise physiologist](#) at Duke Medicine and the study's lead author.

Researchers enrolled 234 overweight or obese adults in the study. Participants were randomly assigned to one of three [exercise training](#) groups: resistance training (three days per week of weight lifting, three sets per day, 8-12 repetitions per set), aerobic training (approximately 12 miles per week), or aerobic plus resistance training (three days a week, three set per day, 8-12 repetitions per set for resistance training, plus approximately 12 miles per week of aerobic exercise).

The exercise sessions were supervised in order to accurately measure adherence among

participants. Data from 119 people who completed the study and had complete body composition data were analyzed to determine the effectiveness of each [exercise regimen](#).

The groups assigned to aerobic training and aerobic plus resistance training lost more weight than those who did just resistance training. The resistance training group actually gained weight due to an increase in lean body mass.

Aerobic exercise was also a more efficient method of exercise for losing body fat. The aerobic exercise group spent an average of 133 minutes a week training and lost weight, while the resistance training group spent approximately 180 minutes exercising a week without shedding pounds.

The combination exercise group, while requiring double the time commitment, provided a mixed result. The regimen helped participants lose weight and fat mass, but did not significantly reduce body mass nor fat mass over aerobic training alone. This group did notice the largest decrease in waist circumference, which may be attributed to the amount of time participants spent exercising.

Resting metabolic rate, which determines how many calories are burned while at rest, was not directly measured in this study. While theories suggest that resistance training can improve resting metabolic rates and therefore aid in weight loss, in this study, resistance training did not significantly decrease fat mass nor body weight irrespective of any change in resting metabolic rate that might have occurred.

"No one type of exercise will be best for every health benefit," Willis added. "However, it might be time to reconsider the conventional wisdom that resistance training alone can induce changes in body mass or fat mass due to an increase in metabolism, as our study found no change."

Duke researchers added that exercise recommendations are age-specific. For older adults experiencing muscle atrophy, studies have found resistance training to be beneficial. However, younger, healthy adults or those looking to lose weight would see better results doing [aerobic training](#).

"Balancing time commitments against health benefits, our study suggests that [aerobic exercise](#) is the best option for reducing fat mass and body mass," said Cris A. Slentz, PhD, a Duke exercise physiologist and study co-author. "It's not that [resistance training](#) isn't good for you; it's just not very good at burning fat."

Provided by Duke University Medical Center

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