

The Study:

Weight Training Increases Fat-free Mass and Strength in Untrained Young Women. (1998). K. Cullinen and M. Caldwell. *Journal of the American Dietetic Association* 98: 414-418.

It is often recommended that a part of an adult fitness program should include strength training because of the additional benefits it provides. But much of the strength training research has been done on male subjects. Consequently, the purpose of this study was to determine what effects weight training had on untrained healthy, young women. Twenty-three healthy, normal-weight women participated in the weight training program and 10 women served as the control group. The program consisted of two sessions per week and included two sets of 10 reps for each exercise. The exercises performed during Session 1 were dumbbell bench press, seated dumbbell press, latissimus pull down, dumbbell curl, leg extension, and leg curl. Session 2 exercises were chest fly, upright row, latissimus pull down, "EZ" curl (biceps curl), leg extension, and leg curl.

At the end of 12 weeks, the weight-trained group demonstrated no change in body weight. However, percent body fat significantly decreased (29.8 ± 2.8 to 26.9 ± 2.8) and fat-free mass (44.2 ± 5.4 to 46.2 ± 6.0 kg) significantly increased. This represents an impressive 10% loss in percent body fat. Muscular strength also increased for the weight-trained women. Although resting metabolic rate (absolute and standardized to kilograms fat-free mass) did not statistically increase, it did increase 8% in this 12-week training period.

The Message:

This study's findings of increased strength, fat-free mass, resting metabolic rate and decreased body fat indicate the potential favorable effect of resistance training in weight management programs. It is of interest that these results occurred without a restriction of dietary intake.