SWACSM Abstract

Strength Training and Waist Circumference: Evidence Based on 5,581 Randomly Selected U.S. Men and Women

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ABSTRACT

Abdominal obesity is a risk factor for many serious diseases. Waist circumference is a good measure of abdominal adiposity. A number of investigations show that regular exercise reduces abdominal obesity. However, few studies have focused on strength training and abdominal fat. **PURPOSE**: This study evaluated the association between time spent strength training (ST) and abdominal adiposity, indexed by waist circumference (WC), in a random sample of 5,581 U.S adults. **METHODS**: Data collected as part of the National Health and Nutrition Examination Survey (NHANES) was used to answer the research question using a cross-sectional design. The findings are applicable to the general U.S adult population because the sample was randomly selected. Time spent strength training (ST) per week was calculated by multiplying the number of days of ST per week by the number of minutes per session. Total MET-minutes of participation in other types of physical activity (PA) was calculated based on self-reported involvement in 47 other activities. ANOVA and partial correlation were used to determine differences in mean waist circumferences across 3 categories of weekly ST: None, 10-50 minutes/week (Moderate), and 60+ minutes/week (Frequent). Partial correlation and the LSmeans procedure were used to adjust means for differences in potential confounders, including age, race, income, smoking pack years, BMI, and MET-minutes of activity other than ST. Data from U.S. men and women were analyzed separately. **RESULTS**: In U.S. women (n=2,950), (Mean ± SE) Frequent (88.8 ± 1.2 cm) and Moderate lifters (89.5 ± 1.2 cm) each had significantly smaller waists than non-lifters (91.3 ± 0.9), F=5.1, P=0.0126 (denominator df=29). The relationship was stronger in men (n=2,631) given Frequent (91.0 ± 1.1 cm) and Moderate lifters (92.5 ± 1.0 cm) each had significantly smaller waists than non-lifters (94.9 ± 0.8 cm), F=43.5, P<0.0001 (denominator df=29). Waist size did not differ significantly between Frequent and Moderate lifters in men or women, although means showed a dose-response pattern across the ST categories. **CONCLUSION**: Strength training accounts for lower levels of abdominal fat in U.S. men and women.