1-Year of Strength Training and Weight Loss In Older Women: Effects on Body Composition

M. Nelson, S. Bortz*, B. Crawford*, M. Fiatarone*, C. Economos, W. Evans, FACSM, USDA Human Nutrition Research Center, Tufts University, Boston, MA

OBJECTIVES:
The effects of a 1 year progressive strength training program on body composition were examined in 10 obese women aged 50-70 years. Randomly, 6 women were assigned to a strength training group and 4 women were assigned to a sedentary group. In addition, all 10 women underwent a behavior modification weight loss program. Two times per week, the strength training group performed 3 sets of 8 repetitions on 5 different Keiser machines. They trained at 80% of their one repetition maximum.

RESULTS:
There were no differences between the two groups in the amount of body weight or fat-free body mass (measured by HYDRO) lost over the year. Thigh muscle area increased in the strength training group and decreased in the sedentary group.

SUMMARY:
These data indicate that when calories are restricted enough to result in weight loss, significantly more muscle mass is preserved in a strength training program combined with a weight loss program, when compared to a weight loss program alone. Maintaining muscle mass is very important in helping to prevent physical frailty and all of its complications. Therefore, preserving muscle mass should be of considerable concern to individuals who are undergoing a weight loss program.

KEISER PIECES USED:
Leg press, leg extension, lat pull- down, lower back, and abdominal machines.

Published in Medicine and Science in Sports and Exercise Copyright 1994 by the American College of Sports Medicine.

Abstracts #6 under Bone Density, #22 under Hormonal Responses, and #38 under "Other" also refer to body composition.