Resistive Training Decreases Insulin Resistance In Healthy Older Men

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OBJECTIVES:
This study tests the hypothesis that strength training improves oral glucose tolerance by decreasing insulin resistance (inefficient usage) in older subjects. Nine healthy sedentary men aged ** years, with normal blood pressure and oral glucose tolerance, were weight stabilized for one month prior to measurement of aerobic capacity and body composition. They were placed on a diet with a pre-set number of calories prior to a 2 step glucose test. Subjects completed a 12 week strength training program involving all major muscle groups worked at 80-90% of their 3 repetition maximum.

RESULTS:
There were no changes in weight or maximum aerobic capacity but strength increased by 38%. Lean body mass increased and body fat decreased. Metabolic testing was repeated 24 hours after the last exercise session. Fasting blood glucose levels did not change but oral glucose tolerance improved after strength training. Insulin sensitivity, increased 33% during both low and high doses of the 2 step glucose test.

SUMMARY:
Improvements in insulin-sensitivity were not related to changes in aerobic capacity, body composition or strength. These results suggest that strength training may reduce the insulin resistance associated with aging, perhaps by altering glucose uptake from muscle tissue. Improved efficiency of insulin usage has significant implications for the prevention and management of diabetes.

KEISER PIECES USED:
Leg press, chest press, leg curl, leg extension, lat pull down, shoulder press, upper back, hip abductor, triceps and abdominal machines.

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