Resistive Training Lowers Insulin Levels And Increases Insulin Sensitivity In Older Men

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OBJECTIVES:
This study tests whether strength training lowers insulin levels in older individuals by increasing insulin sensitivity (more efficient distribution and usage) and whether these changes are due to changes in body composition. Eleven healthy sedentary men 50-75 years whose diet and weight had been stabilized for one month, were measured for glucose and insulin responses and insulin sensitivity. Subjects trained 3 times per week for 16 weeks, exercising all major muscle groups on Keiser K-300 machines.

RESULTS:
Strength increased 38% with no change in weight or measures of aerobic capacity. Fat free mass increased and body fat decreased. Strength training did not change fasting insulin levels but improved the efficiency of insulin usage. There was no change in glucose tolerance.

Insulin sensitivity increased 23% during both low and high insulin infusions. This increase in insulin sensitivity was independent of changes in fat free mass or percent body fat.

SUMMARY:
Strength training lowers insulin responses to glucose in older men by increasing insulin sensitivity (i.e. efficiency of use). The mechanism by which strength training improves insulin sensitivity remains to be determined but, in this study, does not seem to be related to body composition. Increased insulin sensitivity has significant implications for prevention and treatment 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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