

Effect Of Resistance Training With Or Without Chromium Picolinate Supplementation On Glucose Metabolism In Older Men And Women

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OBJECTIVE:

This study sought to determine whether resistance training (RT) combined with high-dose chromium picolinate (Cr-pic) supplementation would significantly alter glucose metabolism in weight-stable, moderately overweight sedentary older men and women. Thirty two older men and women (62 ± 4 yr) completed a 12 week progressive resistance training program; seventeen of these subjects received Cr-pic supplementation, and the remaining subjects received a placebo. Fasting glucose, insulin and C-peptide concentrations were measured through blood samples.

RESULTS:

Cr-pic did not significantly effect any measure of glucose metabolism during resistance training. For all 32 subjects combined, fasting glucose increased but there were no significant changes in insulin or C-peptide concentrations after 12 weeks of RT. In response to an oral glucose test, the glucose and C-peptide areas under the curve (AUCs) were unchanged, whereas there was a 19% decrease in the insulin AUC. The decrease in the insulin AUC without any change in insulin secretion, suggests enhanced insulin clearance from the circulation with RT. In addition, changes in glucose, and insulin AUC were highly correlated with baseline glucose, meaning subjects with high baseline readings experienced the greatest changes.

SUMMARY:

This research suggests that resistance training decreases the insulin response following an oral glucose challenge in older moderately overweight men and women without affecting glucose tolerance. The data also suggest that the decrease in insulin circulating in the blood stream may result from an increase in insulin clearance from the circulation, not a decrease in insulin secretion. High-dose Cr-pic supplementation does not appear to have an effect on any measure of glucose metabolism during RT. This study does, however, support previous studies showing that resistance training can play a role in diabetes prevention and control.

KEISER PIECES USED:

Leg extension, leg curl, chest press, double leg press, and arm pull.

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