

Effect of Concurrent Training and Detraining on Insulin Resistance in Obese Children

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Abstract : The main purpose of the present study was to examine the effect of 12 weeks (3 days/week) concurrent training followed by 4 weeks detraining on insulin resistance in obese boys without dietary intervention. Methods: 24 obese children boys (body mass index > 28, age = 11- 13 year old) voluntarily participated in the study. Biochemical factors, body composition, and functional physical fitness were assessed in three stages [baseline, after 12 week's combined endurance and resistance training and 4 week's detraining in the experimental group (n=12); baseline and after 12 weeks in control group (n=12)]. Results: Independent - Sample T test revealed that in experimental group after 12 weeks trainings the insulin resistance, and body fat mass were significantly declined, whereas endurance and strength of abdominal muscles significantly increased compared to control group ($p < 0.05$). One-way ANOVA for three different periods showed that insulin resistance, body fat mass, strength of abdominal muscles after 12 week training was significantly improved in the experimental group compared with the baseline. Following 4 weeks detraining insulin resistance again significantly increased ($p < 0.05$). After detraining disturbances of physiological adaptation in obese children have more rapid course in comparison with those anthropological and functional indices. Conclusion: Results showed that participation in the regular concurrent trainings provides a decrease of insulin resistance in obese children. It may serve as a strategy in treatment of obesity and management on insulin resistance, as well as to increase endurance and strength muscles in obese children. Adaptations resulting from regular exercises following detraining are reversible.

Keywords : endurance and resistance trainings, detraining, insulin resistance, obese children

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