TACSM Abstract

Effects of Exercise Training on Cardiovascular Risk and Anti-Risk Factors in Adolescent Boys

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ABSTRACT

Adolescence is a critical period in the formation of cardiovascular risk factors. Long-term exercise training has been found to be reversely related to risk factors levels in adolescents.

PURPOSE: To determine the effects of training (swimming and soccer) over a twelve week timeframe on some cardiovascular risk and anti-risk factors in adolescent boys.

METHODS: Forty two boys, including swimmers (SW n=14), soccer players (SO n=13), and a control group (C n=15) (Age=11.8±1.38yrs; Ht=149±.8.38cm; Wt=40±7.8kg) volunteered for this study. Fasting blood samples were obtained prior to initiation of training, at weeks 4, 8, and 12. A 3×4 repeated measures ANOVA with LSD post hoc analysis was conducted to determine the difference between three groups in ApoA1, ApoB, Apo A1/ApoB, Apo B/Apo A1, and VLDL.

RESULTS: Participants in training groups had greater changes in ApoA1 (p=0.01), ApoB (p=0.000), ApoA1/ApoB ratio (p=0.000), and ApoB/ApoA1 ratio (p=0.000). Significant changes were not observed in VLDL levels (p=0.65) across all three groups.

CONCLUSION: Exercise training had a significant effect to change ApoA1, ApoB, ApoA1/ApoB, and ApoB/ApoA1 levels in adolescent athletes. Participation in regular training is recommended for adolescents to improve cardiovascular risk and anti-risk factor profiles. Significant effects of training on VLDL levels were inconclusive for 12-week training period.