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Annals of Biological Research

Abstract

[The Effects of Combined Training on Physical Fitness Factors in](#)

[Academic Level Athletes](#)

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Endurance training increased VO₂ max, mitochondrial and oxidative enzymes. In contrast, strength training increased muscle mass and anaerobic enzymes that can be led to decrease in mitochondrial volume and density. The results of the previous study about the effects of combined training and compared of the strength and endurance training sequence on aerobic power, anaerobic power and maximum strength is unclear. The aim of this semi-experimental study was determined and compared of the effects of combined training sequence on aerobic power, anaerobic power and maximum strength in academic level trained men. 50 trained male (Age: 17.22 ± 0.94 yrs; Height: 175.62 ± 7.11 cm and Body Mass: 62.82 ± 7.78 kg) randomly divided into strength (ST), endurance (ET), strength-endurance (SE), endurance-strength (ES) and control (CO) groups (N = 5*10). Maximum aerobic power, with 1600 meters running test; lactate-anaerobic power, with RAST test; non lactate-anaerobic power, with Vertical Jump power test and strength, with one repetition maximum test measured in first and eight week later. Means compared with ANOVA and paired t tests (p < 0.05). Significant increase of aerobic power was observed in ET, SE and ES groups. Significant increase of lactate-anaerobic power was observed in ST group. Significant increase of maximum strength was observed in ST and ES groups. Therefore, combination of strength and endurance training increased maximum aerobic power, anaerobic power and maximum strength. These results suggested that endurance training must be performed before the strength training.

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