TACSM Abstract

Maintenance of Muscle Size and Function Following In-Season Training of Division I Football Athletes

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ABSTRACT

During in-season training for collegiate athletes, there are fewer metabolically demanding resistance training sessions compared to other seasons of the programmed macrocycle. The shift of training duration and intensity for the in-season mesocycle may hinder an athlete's ability to maintain gains from prior training cycles. In-season training commonly focuses on maintaining muscle mass and reducing the probability of atrophy. **PURPOSE:** The purpose of this study is to examine the potential adaptations following in-season training on muscle size and function in Division I (DI) athletes **METHODS:** Fifteen DI football athletes (mean ± sd; age, 20 ± 2 years; height, 189.6 ± 11.6 cm; weight, 114.1 ± 19.5 kg) completed two separate visits to the Human Performance Laboratory immediately before and after in-season training. Using an S-beam load cell, peak force (PF) was measured from the right leg during maximal voluntary contractions of the isometric knee extension exercise. Muscle CSA was obtained from the rectus femoris and vastus lateralis using ultrasonography. Paired samples t-test were used to compare pre and post measures of strength and size (i.e. PF, CSA). **RESULTS:** The results from a dependent t-test revealed no significant difference between preseason and postseason PF (684.87 ± 213.95 N vs 805.87 ± 325.77 ; p = 0.22), as well as no significant difference between CSA of the right leg VL (37.09 ± 16.67 cm^3 vs 40.84 ± 8.01 cm^3; p = 0.42) and RF (19.35 ± 7.41 cm^3 vs 21.82 ± 3.63 cm^3; p= 0.28) **CONCLUSION:** The Division I football athletes maintain muscle size and strength during in-season and pre-season training. This data set indicates the effectiveness of resistance programming during in season training.