Title: A CORRELATION STUDY BETWEEN PLASMA MYOSTATIN AND PEAK TORQUE STRENGTH GAINS OF BILATERAL KNEE EXTENSORS AND FLEXORS AFTER RESISTANCE TRAINING IN HEALTHY ASIAN INDIANS

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History:  
Accepted 7 February 2011

Abstract:  
Objective: To accurately quantify percentage changes in strength gains and correlate it with percentage changes in plasma myostatin levels. Study design: Same Subject Experimental Study. Setup: Faculty of Sports Medicine and Physiotherapy, Guru Nanak Dev University, Amritsar, India. Method of study: We used a longitudinal experimental design in which our subjects were assessed before and after the resistance training programs designed to induce muscle hypertrophy. A total of 18 subjects were selected, including both males (N = 15) and females (N = 3), to begin the study. Subjects were given circuit resistance training program for a period of six weeks. Subject's maximal isometric voluntary contraction for both the limbs knee extensors and flexors were measured using HUR 5340 Leg Extension/curl computer controlled machine prior to the training and after the training. The plasma myostatin levels were determined by ELISA analysis. Results: We have found a strong negative correlation of -0.73 (p < 0.01) and -0.75 (p < 0.05) between percentage change in plasma myostatin and percentage peak torque gains in bilateral knee extensors and flexors, respectively. Conclusion: Myostatin is negatively correlated to the strength gains in the bilateral knee extensors and flexors with resistance training.  
Keywords:  
Plasma myostatin; Peak torque; Resistance training