The effects of an acute resistance exercise bout on the circulating concentrations of growth hormone and insulin like growth factor-I in different molecular weight plasma fractions in well-trained men and women

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ABSTRACT

Introduction: Endogenous Growth Hormone (GH) and Insulin-Like Growth Factor I (IGF-I) super families are known to mediate many of the growth and repair processes of skeletal muscle in response to long term resistance training. No data exist to describe the dynamics of the IGF-I family within the molecular weight ranges in which GH variants exist. In addition, gender differences in the responses of IGF-I and immunoreactive GH to an acute bout of resistance exercise within these molecular weight ranges have not been examined. **Purpose:** The primary purpose of this investigation was to assess IGF-I and GH in three different molecular weight ranges (i.e., 0-30 kD (C fraction), 30-60 kD (B fraction) and > 60 kD (A fraction) plasma fractions which contain different GH variants to an acute resistance exercise bout in well-trained men and women. **Methods:** Eight men (BM: 87.0±18.5 kg; Ht: 175.3±6.7 cm; Age: 21±1 yrs) and seven women (BM: 76.4±8.8 kg; Ht: 164.6±6.7 cm; Age: 24±5 yrs) volunteered to participate in this study. Each subject performed an acute resistance exercise bout and blood was collected pre-, immediately post- (IP), and 70 minutes (+70)

The Effects Of An Acute Resistance Exercise Bout On The Circulating Concentrations Of Growth Hormone And Insulin Like Growth Factor-I In Different Molecular Weight Plasma Fractions In Well-trained Men And Women

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Summary : Free the effects of an acute resistance exercise bout on the circulating concentrations of growth hormone and insulin like growth factor-i in different molecular weight plasma fractions in well-trained men and women pdf download - introduction endogenous growth hormone gh and insulin-like growth factor i igf-i super families are known to mediate many of the growth and repair processes of skeletal muscle in response to long term resistance training no data exist to describe the dynamics of the igf-i family within the molecular weight ranges in which gh variants exist in addition gender differences in the responses of igf-i and immunoreactive gh to an acute bout of resistance exercise within these molecular weight ranges have not been examined purpose the primary purpose of this investigation was to assess igf-i and gh in three different molecular weight ranges i e 0-30 kd c fraction 30-60 kd b fraction and 60 kd a fraction plasma fractions which contain different gh variants to an acute resistance exercise bout in well-trained men and women methods eight men bm 87 0 -18 5 kg ht 175 3 -6 7 cm age 21 -1 yrs and seven women bm 76 4 -8 8 kg ht 164 6 -6 7 cm age 24 -5 yrs volunteered to participate in this study each subject performed an acute resistance exercise bout and blood was collected pre- immediately post- ip and 70 minutes 70 post-exercise results women had significantly higher resting values of ice-i gh and igfbp-3 exercise-induced increases in circulating igf-i and gh were observed in both genders with women demonstrating a significantly p 0 05 higher concentration of igf-i at the ip and 70 time points significant exercise-induced increases were observed for igf-i binding proteins 1 and 2 igfbp-1 and 2 for the women at ip and 70 and

70 for the men igfbp-1 and at ip for both genders igfbp-2 increases ip exercise were observed in medium size plasma fractions fraction b 30-60 kd for igf-i and gh in both genders but the only gender was observed in igf-i fraction b conclusion the results from this research demonstrate the dynamic nature of the pituitary-hepatic axis of the gh responses in the different molecular weight fractions furthermore igf-i in the circulation may be complexed in a higher molecular weight fraction suggesting biological activity apart from the free hormone hypothesis finally women demonstrated higher resting concentrations of igf-i

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