

## The Effect of Strength Training and Consumption of Glutamine Supplement on GH/IGF1 Axis

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**Abstract :** Physical activity and diet are factors that influence the body's structure. The purpose of this study was to compare the effects of four weeks of resistance training, and glutamine supplement consumption on growth hormone (GH), and Insulin-like growth factor 1 (IGF-1) Axis. 40 amateur male bodybuilders, participated in this study. They were randomly divided into four equal groups, Resistance (R), Glutamine (G), Resistance with Glutamine (RG), and Control (C). The R group was assigned to a four week resistance training program, three times/week, three sets of 10 exercises with 6-10 repetitions, at the 80-95% 1RM (One *Repetition Maximum*), with 120 seconds rest between sets), G group is consuming l-glutamine (0.1 g/kg<sup>-1</sup>/day<sup>-1</sup>), RG group resistance training with consuming L-glutamine, and C group continued their normal lifestyle without exercise training. GH, IGF1, IGFBP-III plasma levels were measured before and after the protocol. One-way ANOVA indicated significant change in GH, IGF, and IGFBP-III between the four groups, and the Tukey test demonstrated significant increase in GH, IGF1, IGFBP-III plasma levels in R, and RG group. Based upon these findings, we concluded that resistance training at 80-95% 1RM intensity, and resistance training along with oral glutamine shows significantly increase secretion of GH, IGF-1, and IGFBP-III in amateur males, but the addition of oral glutamine to the exercise program did not show significant difference in GH, IGF-1, and IGFBP-III.

**Keywords :** strength, glutamine, growth hormone, insulin-like growth factor 1

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