

Public Abstract

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Title: THE RELATIONSHIP BETWEEN INSULIN LIKE GROWTH FACTOR 1 AND BONE MINERAL DENSITY IN OSTEOPENIC MEN FOLLOWING A 12 MONTH OSTEOGENIC EXERCISE INTERVENTION

INTRODUCTION: Plyometric [PLY] and resistance training [RT] have been successfully used to improve BMD in both men and women. Often, the hormonal response to exercise training is an important mediator of exercise-induced adaptations. PURPOSE: To assess the relationship between changes in IGF-1 and changes in BMD during a 12-mo exercise intervention involving either PLY or RT. METHODS: Twenty males with osteopenia were randomly assigned to either of two, 12 month exercise interventions: RT [n=10] or PLY [n=10]. Dual energy X-ray absorptiometry [DXA] was used to measure bone area and BMD of the LS, WB, Hip, and FN at 0 and 12-mo time points. IGF-1 concentrations were assessed at 0 and 12-mo time points with immunoassays. RESULTS: Subjects in both groups experienced increases in WB BMD [time, $p=0.025$] and LS BMD [time, $p=0.047$]. Hip BMD was improved only in the RT group [group x time, $p=0.068$]. IGF-1 concentrations were increased in both groups [group x time, $p=0.000$]. No significant relationships were found between percent change in IGF-1 concentration and percent change in BMD at any site. CONCLUSION: RT and PLY may be effective interventions to maintain or improve BMD in osteopenic men. However, changes in circulating IGF-1 concentration are not related to changes in BMD during a 12-mo exercise intervention in men with osteopenia.