

Public Abstract

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Title:Six months of resistance training or plyometrics exercise positively affects bone mineral density and bone turnover marker ratios in men with osteopenia

The long-term effects of weight-bearing exercise on bone mineral density (BMD) in men with low bone mass are unknown . **PURPOSE:** To determine the effects of six months of resistance training (RT) or plyometrics (PLYO) exercise on BMD and blood markers of bone formation and breakdown in men with osteopenia. **METHODS:** Twenty-one recreationally active (>4 h/wk of activity) healthy males (25-55 years of age) with osteopenia in the hip or lumbar spine were randomized into a 6-mo RT or PLYO exercise program. Dual-energy X-ray absorptiometry was used to measure BMD of the lumbar spine, hip, and whole body (WB). Blood markers of bone resorption and formation were measured. **RESULTS:** There was a significant increase in WB BMD after six months of exercise in the RT and PLYO groups (+1.32 and 0.52 %, respectively). In addition, the ratio of bone formation to bone resorption increased, suggesting that the exercise interventions favorably affected the balance between bone formation and breakdown. **CONCLUSION:** The results of this study are the first to show that 6 mo of RT or PLYO can improve WB BMD and bone turnover in men with low bone mass.