

Strength Training In Postmenopausal Women: Effects On Bone And Body Composition

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OBJECTIVES:

The effects of a supervised 1-year high intensity strength training program on bone and body composition were examined in 10 healthy postmenopausal women, aged 50-70 years. Subjects were randomly assigned to either a sedentary control group (no strength training) or a high intensity strength training program. Eight repetitions of each of the following exercises; leg press, leg extension, lat pull down, back extension and abdominal flexion on Keiser machines was identified as a set. Two days per week, this set was repeated 3 times with a weight equal to 80% of 1 repetition maximum (the maximum amount of weight an individual can lift one time).

RESULTS:

Bone mineral density of the lumbar spine increased by $\approx 6.3\%$ in the 6 exercising women and decreased by $\approx 3.7\%$ in the 4 sedentary controls. Bone measurements (total bone, spine, and hip) did not change over the year and there were no differences between groups. Lean body mass measured by underwater weighing, increased in the exercising women and was unchanged in the sedentary controls. Body weight and fat mass did not change in either group over the year.

SUMMARY:

The results of this study indicate that high intensity strength training increased bone density of the lumbar spine and lean body mass in post-menopausal women. This has direct implications for prevention of osteoporosis and physical frailty. It is important to note that the 6.3% increase in bone density becomes even more significant when compared to the 3.7% loss of bone mineral density experienced by the sedentary group.

KEISER PIECES USED:

Leg press, leg extension, lat pull down, abdominal, and lower back machines.

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