

Effect of Exercise Program on the Bone Mineral Density in Sedentary Females

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Background: Osteoporosis is a widespread disorder, which affects postmenopausal women, causing fractures after simple trauma. Exercise is long being known to reduce the risk of osteoporosis.

Objective: A prospective study was carried out to scientifically assess the effect of exercise in sedentary Saudi Women.

Methods: The study was carried out on 100 women with clearly defined criteria of inclusion in the study. The height, weight, abdomen, and thigh girth was measured pre and post exercise. Women in the age range of 25-50 years were included in the study. They were randomly divided into two groups. Both groups had Bone Mineral Density (BMD) measurement of the lumbar spine and hip region before the start of the study. One group was subjected to a structured exercise program within the hospital confines, three times a week for three months. At the end of the three months the measurements were repeated.

Results: The average age of the subjects studied was 39 years (ranges 27.5 -50 years). The mean bone mineral density (BMD) of the lumbar spine and hip prior to exercise was 1.115 gm/cm², with a range of 0.94gm/cm² and 1.53 gm/cm². Post exercise the BMD was 1.32 gm/cm² (range 0.97 and 1.720 gm/cm²) with statistical significance of p Value <0.0001. The mean BMD in women with more than 5 children was 1.2 gm/cm² as compared to the women with less than 5 children was 1.1gm/cm², with a P value <0.05. The age and sex matched BMD showed that Saudi women had significantly lower BMD as compared to western women of the same age P value <.0001.

Conclusions: This prospective study confirms that the average bone mineral density of the Saudi Arabian women is much lower as compared with the western women and there was a statistical significance between the post and pre-exercise groups. We believe it is advisable for Saudi women who are sedentary to participate in some type of exercise so as to reduce the risk of osteoporosis and osteoporosis related fractures.