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Effect of diet and lifestyle factors on bone health in postmenopausal women.

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Abstract

Our objective was to examine the effect of nutritional intake and lifestyle factors on bone mass in postmenopausal Saudi women. A total of 122 apparently healthy postmenopausal Saudi women were recruited from the Center of Excellence for Osteoporosis Research in Jeddah. A questionnaire on lifestyle habits and dietary intake was administered to all participants. Anthropometric and bone mineral density (BMD) values were measured. Fasting blood samples were taken to measure concentrations of bone-related parameters and hormones. Most of the sample population was found to be vitamin D deficient with a serum vitamin D level below 50 nmol/l. Those participants with normal BMD values had significantly lower serum vitamin D levels than osteopenic individuals ($P < 0.05$). Overall, mean total caloric, total fat, and saturated fat intakes were above recommended levels. Almost 60% of the total study population had lower calcium intake than the estimated average requirements whereas the whole population had vitamin D intake level below the estimated average requirements. Only BMD of the femoral neck showed significant correlations with serum vitamin D level and dietary cholesterol intake. After adjustment for confounding variables; serum vitamin D levels were significantly correlated with cholesterol intake. Dietary calcium intake was significantly correlated with intake of protein and fiber whereas dietary vitamin D intake was significantly correlated with intake level of total fat, all fatty acids, cholesterol, and fiber. Our findings reveal the important role of dietary vitamin D and calcium in osteopenic patients and the likely requirement for supplementation of these nutrients in the Saudi population.