

Accelerated hip bone loss in diabetic women across menopause

In findings presented by Dr. Naila Khalil at the American Society for Bone and Mineral Research (ASBMR) 31st Annual Meeting in Denver, CO. on September 13, 2009, women with diabetes mellitus show a greater rate of total hip bone loss as they transition through menopause, compared with women who do not have diabetes. However, bone loss in the spine was slower in women with diabetes than non-diabetic women.

This longitudinal study evaluated data from 2245 multiethnic women, aged 42 and 52 years, participating in the Study of Women's Health Across the Nation (SWAN) at 5 research centers in the United States between 1996 to 2004. At baseline, all women were premenopausal and those with diabetes had, on average, higher bone density at the hip and the spine. Over an average follow-up period of 3.3 years, the rate of decline in hip bone mineral density for women with diabetes was almost 10-fold greater than for women without diabetes. Women without diabetes, however, had a faster rate of spinal bone loss than for women with diabetes. The proportion of women with diabetes who reported a fracture over this follow-up period was 2-times higher (4%) than those without diabetes (2%).

The mechanism for the higher rate of bone loss and fracture risk seen in diabetic women remains unclear, but factors such as high blood sugar levels and impaired insulin may be involved. Diabetes has also been associated with poorer bone composition and bone quality, which could lead to lower mechanical strength and a propensity to fracture.

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The most interesting finding of this study was that there was more rapid bone loss at the hip in women with diabetes, but yet the opposite was found at the spine. Previous bone related research in women with diabetes has also shown more rapid bone loss at the hip, despite a higher baseline BMD, compared to women without diabetes. These findings suggest that diabetes affects the spine (trabecular) in a positive fashion while diabetes is harmful to the bone type (cortical) that make up the hip. Furthermore, these findings also underscore the need to be aware of the higher risk of fractures among women with diabetes. It is important that doctors that treat women with diabetes monitor the health of the bones of these patients.