

Predicting Fracture Risk in Patients with Type 2 Diabetes

At similar bone-mineral densities, fracture risk was higher for diabetic patients.

Type 2 diabetes mellitus is associated with both higher bone-mineral density (BMD) and, paradoxically, higher fracture risk. Normative values for BMD, or other standardized risk assessments, such as the WHO Fracture Risk Algorithm ([FRAX](#)) score, might not perform well in diabetic patients. Data from three national prospective cohort studies were combined to assess fracture risk in 9449 older women (median follow-up, 12.6 years) and 7436 older men (median follow-up, 7.5 years). Among 770 diabetic women, 262 suffered nonspine fractures; among 1199 diabetic men, 133 suffered nonspine fractures. About one quarter of reported fractures were hip fractures.

Age- and sex-adjusted BMD (T-score) predicted fracture risk similarly for participants with or without diabetes. However, at any given T-score, diabetic patients were at higher risk than nondiabetic participants: Diabetic women with T-scores that were 0.59 units higher (i.e., less negative) than nondiabetic women of the same age had similar hip fracture risk; the corresponding value for men was 0.38 units. Similar relations were noted for FRAX scores.

Comment: These results confirm that BMD T-score and FRAX score are useful predictors of hip and nonspine fracture risks in patients with or without diabetes. However, any given T-score or FRAX score is associated with higher fracture risk in a patient with type 2 diabetes than in a patient without diabetes. Further refinement of these values, as they apply to older diabetic patients, would be helpful.

— [Thomas L. Schwenk, MD](#)

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