

# Treatment with bisphosphonates associated with increased risk of atypical femoral fractures

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Treatment with bisphosphonate therapy appears to be associated with an increased risk of atypical fractures of the femur, according to a report published Online First by *Archives of Internal Medicine*.

"Current evidence suggests that there is an association between bisphosphonate therapy and atypical femoral fractures, but the extent of this risk remains unclear," according to Raphael P. H. Meier, M.D., and colleagues from University Hospitals of Geneva and Faculty of Medicine, Geneva, Switzerland.

To evaluate the association between bisphosphonate [treatment](#) and atypical femoral fractures the authors examined data on 477 [patients](#) age 50 years and older who were hospitalized with a subtrochanteric or femoral shaft fracture at a single university medical center, and a random sample of 200 healthy individuals without femoral fractures was also identified.

Of the 477 patients, the authors identified 39 patients with atypical fractures and 438 patients with a classic (more common fracture with a typical pattern) fracture. Among the 39 patients in the atypical group, 32 (82.1 percent) had been treated with [bisphosphonates](#), compared with 28 patients (6.4 percent) in the classic group. However, compared with patients without fractures, use of bisphosphonates was associated with a 47 percent reduction in the risk of classic fracture.

When categorized by duration of treatment, compared with no treatment, the odds ratio for an atypical fracture vs. a classic fracture were 35.1 for less than two years of treatment, 46.9 for two to five years of treatment, 117.1 for five to nine years and 175.7 for more than nine years.

"In conclusion, we have demonstrated that the association between bisphosphonate treatment and the occurrence of atypical fractures of the femur is highly likely and that the duration of such treatment significantly correlates with augmented risk," the authors conclude. "However, the incidence rate was very low, and the absolute benefit to risk ratio of bisphosphonate use remains positive."

In an invited commentary, Douglas C. Bauer, M.D., of the University of California, San Francisco, writes, "The case control study by Meier et al in this issue of the *Archives* adds further data suggesting that the association between bisphosphonate use and atypical femur fractures is causal."

Bauer concludes that, "atypical [femur](#) fractures are uncommon but do appear to be more frequent among individuals who are being treated with oral and intravenous bisphosphonates, and longer duration of use further increases the risk. Additional studies of atypical fractures are needed to clarify the mechanism and other key risk factors as well as to confirm that discontinuation of treatment after long-term use substantially lowers the risk."

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