

# HIV-infected postmenopausal women at high risk for bone fractures

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According to a new study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism* (JCEM), postmenopausal HIV-infected women have a high prevalence of low bone mineral density and high bone turnover placing them at high risk for future bone fractures.

"As HIV-infected individuals live longer with potent antiretroviral therapy (ART), metabolic complications such as low [bone](#) density and osteoporosis are increasingly recognized," said Michael Yin, MD of Columbia University Medical Center in New York and lead author of the study. "Although numbers of HIV-infected [postmenopausal women](#) are increasing and postmenopausal women are at highest risk for osteoporotic fractures, few studies have evaluated skeletal status in this group. We hypothesized that postmenopausal women might be particularly vulnerable to the adverse effects of HIV infection or ART on the skeleton and our results indicate that this may indeed be the case."

To test their hypothesis, Yin and his colleagues initiated a longitudinal study to assess bone health in 92 HIV-positive and 95 HIV-negative postmenopausal women. Bone mineral density of the lumbar spine, femoral neck and hip as well as body composition were measured by dual x-ray absorptiometry (DXA). Researchers found that HIV-positive postmenopausal women had lower bone mineral density at both the spine and hip than HIV-negative postmenopausal women.

"HIV infection was independently associated with lower [bone mineral density](#) after adjusting for body mass index (BMI) and traditional osteoporosis risk factors," said Yin. "While the reason for HIV-associated bone loss remains unclear, it may be related to increased levels of cytokines (proteins produced by cells that aid communication between cells), direct effects of antiretrovirals on bone cells or hormonal/nutritional deficiencies that are

common in HIV."

"Estrogen protects against the effect of cytokines on bone resorption," said Yin. "Therefore, as HIV-positive women become estrogen deficient during menopause, they may be at higher risk for accelerated bone loss and fracture."

**More information:** The article, "Low bone mass and high bone turnover in postmenopausal HIV-infected women," will appear in the February 2010 issue of JCEM.

Provided by The Endocrine Society

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