

Popular prostate cancer treatment associated with bone decay

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Using novel technology allowing "virtual bone biopsies" researchers have found that a common treatment for prostate cancer called androgen deprivation therapy (ADT) is associated with structural decay of cortical and trabecular bone. The study has been accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism* (JCEM).

Prostate cancer is the second most common cancer in men worldwide and estimates suggest there are currently 600,000 men in the United States with the condition who are being treated with ADT. Prostate cancer relies upon male hormones for its growth and ADT is a common treatment because it suppresses or blocks the production or action of male sex hormones. This is the first study to examine changes in [bone](#) structure during ADT.

"We used a new technology that allows us to assess bone microarchitecture and we found ADT is associated with structural decay of cortical (hard outer shell) and trabecular (spongy inner mesh) bone," said Emma Hamilton, MBBS and Mathis Grossmann, MD, PhD, of the University of Melbourne in Australia and lead authors of the study.

"This technology may be a useful test in predicting fractures in patients, but further research is needed in identifying individuals at greatest fracture risk as well as optimal therapeutic strategies."

In this study, researchers conducted a 12 month prospective observational study of 26 men with prostate cancer who began ADT. At

several points during the study, measurements were taken for sex steroid levels, bone turnover markers and bone mineral density. Furthermore, researchers used three-dimensional high resolution peripheral quantitative computed tomography (HR-pQCT) to assess bone microarchitecture. This technology allows researchers to take virtual bone biopsies, according to Grossmann.

"Sex steroid deficiency induced by ADT for [prostate cancer](#) results in microarchitectural decay," said Grossmann. "Bone fragility in these men may be more closely linked to testosterone than estradiol deficiency."

More information: The article, "Structural Decay of Bone Microarchitecture in Men with Prostate Cancer treated with Androgen Deprivation Therapy," will appear in the December 2010 issue of *JCEM*.

Provided by The Endocrine Society

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