

High-risk prostate cancer associated with significantly lower bone mineral content loss

July 13 2010

Men with prostate cancer lose significantly less bone mineral content (BMC) as they age than men who are free of the disease, according to research in the July issue of *BJUI*. The findings are important because loss of BMC can play a key role in the development of fragile bones, fractures and osteoporosis.

American researchers studied 519 participants who joined the Baltimore [Longitudinal Study](#) at an average age of 56 between 1973 and 1984. The maximum follow-up was 35 years and the median was 22 years. Seventy-six men who took part in the study were later diagnosed with prostate cancer, with just under a quarter (24 per cent) falling into the high-risk category.

When they charted the individual BMCs of the study subjects over an extended period, the researchers could clearly see that the decline was much larger in healthy men than in men later diagnosed with prostate cancer, especially those with high-risk prostate cancer. This occurred despite the fact that the initial baseline readings were very similar for all three groups.

The researchers also adjusted the figures to take account of other factors that affect BMC, such as smoking status, [body mass index](#), [dietary calcium](#) and vitamin D. However, this did not change the significant differences between the healthy men and those with prostate cancer.

"There are numerous possible mechanisms to explain the relationship

between prostate cancer and BMC" says lead author Dr Stacy Loeb, from Johns Hopkins University, Maryland, USA.

"It is well known that prostate cancer frequently metastasizes (spreads) to bone. Although the biology underlying the association between BMC and this form of cancer requires additional research, our findings suggest that common growth factors might be involved in both bone maintenance and the progression of prostate cancer.

"We believe that this may be why the patients with the highest risk prostate cancer also demonstrated the least loss of BMC as they got older, when compared with patients with non high-risk prostate cancer and no prostate cancer."

The baseline demographics between the three groups of men were similar when it came to their body mass index and smoking history.

The authors believe that this is the first study to explore the relationship between longitudinal BMC measurement and the long-term risk of prostate cancer and, more specifically, life-threatening disease. They point out that the study sample was primarily white (96 per cent) and, due to racial differences in bone density, may not be generally applicable to other ethnic groups.

"We would like to see our theories tested further in larger populations of men at risk of developing life-threatening prostate cancer" concludes Dr Loeb. "If we can better understand the link between [prostate cancer](#) and bone, it may help us to find ways of preventing the spread of this disease to bone in the future."

More information: Bone mineral content and prostate cancer risk: data from the Baltimore Longitudinal Study of Aging. Loeb et al. BJUI. 106, pp 28-31. (July 2010). [DOI: 10.1111/j.1464-410X.2009.09109.x](https://doi.org/10.1111/j.1464-410X.2009.09109.x)

Provided by Wiley

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