



Are Bone Mineral Density and Fractures Associated with the Incidence and Progression of Radiographic Osteoarthritis of the Knee, Hip and Hand in the Elderly Population?

SCIENCE

[Abstracts](#)

Key Take-Away:

This study presents strong evidence that high BMD is a significant risk factor for the development of subsequent knee and hip OA. The occurrence of the radiographic knee and hip OA but not radiographic hand OA is concerned with high baseline femoral neck BMD (FN -BMD). Prevalent vertebral fractures are related to the incidence of radiographic hand osteoarthritis, but not with knee and hip ROA. Non-vertebral fractures are not associated with the incidence or progression of either knee, hip or hand OA.

Introduction:

To determine the longitudinal relationship between bone mineral density (BMD) and incidence and progression of the knee, hip and hand osteoarthritis, and the association between prevalent vertebral and non -vertebral fractures and incidence and progression of OA in older men and women in the Rotterdam Study.

Methods:

Age- and sex-specific quartiles of the baseline femoral neck BMD were constructed for a total 4,154 subjects. Radiographs were obtained for incidence and progression of knee and hip OA, and incidence of hand OA. The prevalent vertebral fractures were scored via the McCloskey/Kanis method. As for prevalent non-vertebral fractures, the baseline interview was used.

Results:

Subjects in the highest quartile of femoral neck BMD had an increased risk of incident knee radiographic osteoarthritis (ROA) (OR 1.58; 95%CI: 1.14 to 2.18), and an increased risk of incident hip ROA (OR 1.57; 95%CI: 1.06 to 2.32) as opposed to the lowest quartile. No significant relationship was found between high femoral neck BMD and progression of the knee or hip ROA, or the incidence of hand ROA. Prevalent vertebral and non-vertebral fractures were not associated with the incidence or progression of the knee or hip ROA. Vertebral fractures were however concerned with incident hand ROA (OR 1.74; 95%CI: 1.02 to 2.98).

Conclusion:

The outcomes from the present study confirm the earlier studies. Hence, it provides strong evidence that high femoral neck BMD is a prognostic risk factor for the development of knee and hip ROA. Vertebral fractures were portrayed as a risk factor for incident hand ROA.



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