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BONE

DENTAL RADIOGRAPHY AND FRACTURE RISK

The coarseness of mandibular bone trabeculation seen in routine dental radiographs correlates with fracture risk in women, shows a new study by researchers from the University of Gothenburg, Sweden.

Reduced trabecular complexity is associated with osteoporosis. In an earlier study, Grethe Jonasson and colleagues observed that sparse mandibular trabeculation was associated with an increased likelihood of previous fractures.

In the new study, Jonasson *et al*. assessed the relationship between mandibular trabeculation and fracture risk prospectively, using data from the Prospective Population Study of Women in Gothenburg. Panoramic dental radiographs taken in 1968 in women aged 38–54 years were analyzed and the relationship between coarseness of trabeculation—sparse, mixed or dense—and time to occurrence of a first non-cranial fracture was investigated. Fractures were self-reported from 1968 to 1980 and verified from hospital registries between 1980 and 2006.

In a model that included the whole study period, 222 fractures in 731 women were taken into account. When compared with mixed trabeculation, sparse trabeculation was significantly associated with an increased risk of fracture (HR 2.9, 95% CI 2.2–3.8), whereas dense trabeculation was significantly associated with a decreased risk (HR 0.21, 95% CI 0.1–0.4).

"Approximately 30% of all radiographic examinations are performed by dentists," comments Jonasson, "and these dental radiographs contain a lot of information about bone structure." The study findings indicate that "a simple dental radiograph showing very sparse trabeculation identifies subjects at high risk of future fracture at an early age, often long before the first fracture occurs."

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Original article Jonasson, G. *et al*. A prospective study of mandibular trabecular bone to predict fracture incidence in women: a low-cost screening tool in dental clinics. *Bone* doi:10.1016/j.bone.2011.06.036

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