

EPIDEMIOLOGY

Exposure to Natural Fluoride in Well Water and Hip Fracture: A Cohort Analysis in Finland.

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ABSTRACT

In the retrospective cohort study based on record linkage, the authors studied a cohort of persons born in 1900--1930 (n =144,627), who had lived in the same rural locality (median, 0.1 mg/liter; maximum, 2.4 mg/liter) for most of their lives. The authors used a median smoothing method based on ground water fluoride concentrations in the well water in either men or women. The authors used the Hospital Discharge Registry for 1981--1994. No association was modified by age and sex so that the risk of hip fractures increased among older persons. The adjusted rate ratio was 2.09 (95% confidence interval, 1.13--3.87) for those exposed (>1.5 mg/liter) when compared with those who were not exposed. The authors conclude that fluoride increases the risk of hip fractures only among women.

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SUMMARY

Kurttio and colleagues studied over 144,000 elderly Finnish people admitted to hospitals with their first hip fracture, who lived at the same address from 1967 to 1994. They found that women aged 50-64 years old exposed to natural water fluoride levels greater than 1.5 mg/liter had significantly more hip fractures than similar women least exposed to fluoride at 0.1 mg/liter or less. "These results suggest that fluoride may be associated with some gender-dependent mechanisms or risk factors for hip fractures," report the research team. "The scientific evidence clearly shows that fluoride damages bone even at levels added to public drinking water," says Dr. John R. Lee, physician and authority on fluoride and its bone effects.