**Objective.** - To test the effect of water fluoridated to 1 ppm on the incidence of hip fractures in the elderly.

**Design.** - Ecological cohort.

**Setting.** - The incidence of femoral neck fractures in patients 65 years of age or older was compared in three communities in Utah, one with and two without water fluoridated to 1 ppm.

**Patients.** - All patients with hip fractures who were 65 years of age or older over a 7-year period in the three communities, excluding (1) those with revisions of hip fractures, (2) those in whom the hip fracture was anything but a first diagnosis, (3) those in whom metastatic disease was present, or (4) those in whom a second fracture (n=246).

**Outcome Measure.** - Rate of hospital discharge for hip fracture.

**Results.** - The relative risk for hip fracture for women in the fluoridated area was 1.27 (95% confidence interval (CI)=1.08 to 1.46) and for men was 1.41 (95% CI=1.00 to 1.81) relative to the nonfluoridated area's.

**Conclusions.** - We found a small but significant increase in the risk of hip fracture in both men and women exposed to artificial fluoridation at 1 ppm, suggesting that low levels of fluoride may increase the risk of hip fracture in the elderly.

HIP fractures, or fractures of the femoral neck, are a major public health problem. In the United States, the cost of hip fracture is approximately $7 billion annually, and hip fracture is the second most common cause of admission to nursing homes, accounting for approximately 60,000 admissions each year.