

# OSTEOSCOOP

News on current events in osteoporosis and rheumatology

## Effects of three years of low-dose thiazides on mineral metabolism in healthy elderly persons

N°88 – July 2009

Previous studies have shown increased bone density and reduced risk of fracture in patients taking thiazide diuretics. In vitro, a direct effect of thiazides on osteoblasts has been reported. However, the long-term effects of low-dose thiazides on mineral metabolism have not been reported in normal subjects. The authors of this study [1] conducted a randomized, double-blinded trial in normal subjects aged 60 to 79 years, using hydrochlorothiazide 12.5 or 25 mg/d or placebo for 3 years. Subjects were encouraged to maintain calcium intake of 1 to 1.5 g/day. Measurements of serum and urine calcium metabolism were done at baseline, 6 months, and yearly. Data were analyzed in 88 men and 177 women who had taken study medication. Adjusted changes in the measurements from baseline to 1 and 3 years were compared among groups.

The calcium intake increased in all groups. Urine calcium per day was significantly lower in thiazide than placebo groups in men at 1 year but not at 3 years; in women the changes were not significantly different. Serum bicarbonate was higher in thiazide compared to placebo groups at 1 and 3 years. No changes were seen in serum calcium, phosphate, parathyroid hormone, sodium, or magnesium.

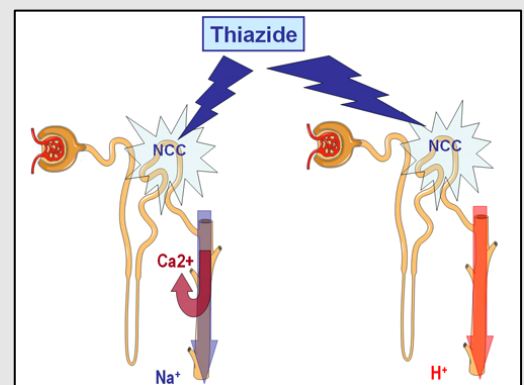
These results suggest that both increased calcium availability from a hypocalciuric effect and reduction in acid-induced bone buffering could be mechanisms for the beneficial skeletal effects. Nevertheless, long-term treatment with thiazides cannot be considered at present as a treatment for osteoporosis.

1. Ott SM et al. *Osteoporos Int.* 2008; 19:1315-1322.

### Effects of 3 years of low-dose thiazides on mineral metabolism in healthy elderly persons

Previous studies have shown increased bone density and reduced risk of fracture in patients taking thiazide diuretics. The effect of low dose thiazide treatment on mineral metabolism in subjects aged 60 to 79 years old was evaluated. Thiazide treatment reduced calcium urinary excretion over a 3-year period. Moreover, serum bicarbonate concentration was higher under thiazide therapy.

These results suggest that both increased calcium availability from a hypocalciuric effect and reduction in acid-induced bone buffering could be mechanisms for the beneficial skeletal effects.



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