

J Am Coll Nutr. 2006 Jun;25(3):224-30.

**Dietary acid-base balance, bone resorption, and calcium excretion.**

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**OBJECTIVE:**

Metabolic studies reveal that acidogenic diets increase bone resorption acutely. This study was conducted to examine associations between diet-induced changes in net acid excretion (NAE) and changes in serum parathyroid hormone (PTH), bone resorption, and calcium excretion over a longer period of 60 days.

**METHODS:**

Forty healthy older men and women were given 0.75 g/kg of protein as meat, 600 mg of calcium, and 400 IU of vitamin D3 daily and either cereal (acidogenic) or fruit and vegetable (alkalinogenic) foods as substitutes for some of the cereal in their usual diets. Blood and 24-hr urine measurements were made on days 14 (baseline), 44, and 74.

**RESULTS:**

In all subjects, change in renal NAE was correlated with changes in serum PTH ( $r = 0.358$ ,  $P = 0.023$ ), urinary N-telopeptide (NTX) ( $r = 0.367$ ,  $P = 0.020$ ), and urinary calcium excretion ( $r = 0.381$ ,  $P = 0.020$ , after adjustment for diet group, change in PTH, and change in sodium excretion).

**CONCLUSIONS:**

Diet changes that increase renal NAE are associated with increases in serum PTH, bone resorption, and calcium excretion over a 60-day period.