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**Low urine pH and acid excretion do not predict bone fractures or the loss of bone mineral density: a prospective cohort study.**

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**BACKGROUND:**

The acid-ash hypothesis, the alkaline diet, and related products are marketed to the general public. Websites, lay literature, and direct mail marketing encourage people to measure their urine pH to assess their health status and their risk of osteoporosis. The objectives of this study were to determine whether 1) low urine pH, or 2) acid excretion in urine [sulfate + chloride + 1.8x phosphate + organic acids] minus [sodium + potassium + 2x calcium + 2x magnesium mEq] in fasting morning urine predict: a) fragility fractures; and b) five-year change of bone mineral density (BMD) in adults.

**METHODS: DESIGN:**

Cohort study: the prospective population-based Canadian Multicentre Osteoporosis Study. Multiple logistic regression was used to examine associations between acid excretion (urine pH and urine acid excretion) in fasting morning with the incidence of fractures (6804 person years). Multiple linear regression was used to examine associations between acid excretion with changes in BMD over 5-years at three sites: lumbar spine, femoral neck, and total hip (n = 651). Potential confounders controlled included: age, gender, family history of osteoporosis, physical activity, smoking, calcium intake, vitamin D status, estrogen status, medications, renal function, urine creatinine, body mass index, and change of body mass index.

**RESULTS:**

There were no associations between either urine pH or acid excretion and either the incidence of fractures or change of BMD after adjustment for confounders.

**CONCLUSION:**

Urine pH and urine acid excretion do not predict osteoporosis risk.