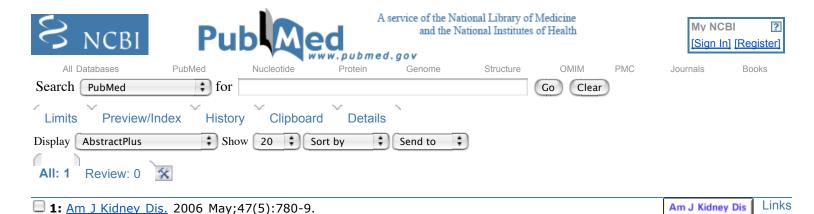
Entrez PubMed 07/28/2006 06:58 AM



Association of prevalent hypertension with 24-hour urinary excretion of calcium, citrate, and other factors.

## Taylor EN, Mount DB, Forman JP, Curhan GC.

Renal Division, Department of Medicine, Brigham Women's Hospital, Harvard Medical School, Boston, MA, USA. entaylor@partners.org

BACKGROUND: The relation between hypertension and the urinary excretion of calcium, citrate, and other factors is unclear. It has been proposed that increased urinary calcium excretion is a central feature of essential hypertension. Metabolic acidosis also may be associated with hypertension and decreases urinary citrate levels. METHODS: To compare the urine composition of individuals with and without hypertension, we studied 24-hour urinary excretion of calcium, citrate, oxalate, uric acid, sodium, magnesium, potassium, phosphorus, and creatinine and pH in a subset of participants with and without nephrolithiasis in the Nurses' Health Study I (older women; N = 1,284), Nurses' Health Study II (younger women; N = 952), and the Health Professionals Follow-up Study (men; N = 788). Logistic regression models adjusted for age, weight, dietary intake, and urinary factors. RESULTS: In participants with and without nephrolithiasis, citrate was the only urinary factor consistently related to hypertension. Compared with those in the lowest quartile of urinary citrate excretion, multivariate odds ratios of prevalent hypertension in the highest quartile were 0.37 (95% confidence interval [CI], 0.24 to 0.55; P trend < 0.001) for older women, 0.54 (95% CI, 0.32 to 0.92; P trend = 0.03) for younger women, and 0.27 (95% CI, 0.16 to 0.45; P trend < 0.001) for men. Urinary calcium levels were not related consistently to hypertension. Excluding participants with single 24-hour urine collections and those administered thiazide diuretics or angiotensin-converting enzyme inhibitors did not change the results. CONCLUSION: Lower urinary citrate excretion is associated independently with prevalent hypertension. Factors that regulate urinary citrate excretion may play a role in hypertension.

PMID: 16632016 [PubMed - indexed for MEDLINE]

Display AbstractPlus \$\display\$ Show 20 \$\display\$ Sort by \$\display\$ Send to \$\display\$

Write to the Help Desk
NCBI | NLM | NIH
Department of Health & Human Services
Privacy Statement | Freedom of Information Act | Disclaimer

Iul 25 2006 06:31:58

## **Related Links**

Twenty-four-hour urine chemistries and the risk of kidney stones among w [Kidney Int. 2001]

Nephrolithiasis in Cushina's disease: prevalence, etiopath [J Clin Endocrinol Metab. 2003]

Urinary excretion of citrate. glycosaminoglycans, r [Scand J Urol Nephrol. 1992]

Obesity, weight gain, and the risk of kidnev stones. [JAMA. 2005]

The role of overweight and obesity in calcium oxalate stone formation. [Obes Res. 2004]

See all Related Articles...