



1725 I Street NW • Suite 510 • Washington, DC 20006  
Tel 202-659-0599 • Fax 202-659-0709 • [www.asn-online.org](http://www.asn-online.org)

**Contact:** Shari Leventhal: 202-416-0658, [sleventhal@asn-online.org](mailto:sleventhal@asn-online.org)

## ***High Phosphate Levels Linked to Increased Mortality Risk in Chronic Kidney Disease***

**Washington, DC (January 14, 2005)** — For people with chronic kidney disease (CKD), elevated levels of the mineral phosphate may signal an increased risk of death, suggests a study in the February *Journal of the American Society of Nephrology* (JASN).

Dr. Bryan Kestenbaum and colleagues of University of Washington, Seattle, collected data on nearly 3,500 CKD patients seen at Veterans' Affairs hospitals. All patients had a recent measurement of blood phosphate level. The patients' average age was 71 years— many had other medical problems, such as heart disease or diabetes.

Over the next few years, patients with higher phosphate levels were at significantly increased risk of death. By three years, just 56 percent of patients with the highest phosphate levels were still alive, compared with 67 percent of those in the middle levels and 72 percent at the lowest level.

Phosphate levels tended to be higher for patients with lower levels of kidney function. After adjustment for other measures of kidney function, risk of death was significantly increased for CKD patients with a phosphate level of 3.5 milligrams per deciliter (mg/dL)— high, but still in the normal range for healthy people.

Over 3.5 mg/dL, risk of death increased steadily, by about 23 percent for each additional one-milligram increase in phosphate level. Risk of acute myocardial infarction (heart attack) increased by 35 percent per milligram increase in phosphate.

Phosphate plays an essential role in bone formation and other body processes. High phosphate levels are a known risk factor for death for patients with kidney failure requiring dialysis. For these patients, high phosphate levels lead to calcium deposits in the large blood vessels, increasing the risk of cardiovascular disease.

The new study is one of the first to examine phosphate as a risk factor for the much larger group of patients with CKD, which is estimated to affect one in nine individuals. The number of patients with CKD who will require kidney dialysis or transplantation is expected to double in the next decade. A previous study in JASN confirmed that most Americans with CKD— even severe CKD— are unaware they have kidney disease.

The new results suggest that elevated phosphate levels are an important danger sign in CKD. It remains to be seen if high phosphate levels are a causative factor or merely a warning sign of complications, especially cardiovascular disease. If causative, then treatments to lower phosphate levels might help to reduce the risk of death in people with CKD.

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The study's results appear in the article entitled, "Serum phosphate levels and mortality risk among people with chronic kidney disease" on Page 520 of February's JASN and on the JASN website under the category of Clinical Epidemiology and Outcomes. A related editorial is also available, entitled "Calcification or Classification" by Glenn Chertow, MD and Sharon Moe, MD on Page 293.

The ASN is a not-for-profit organization of 9,000 physicians and scientists dedicated to the study of nephrology and committed to providing a forum for the promulgation of information regarding the latest research and clinical findings on kidney diseases.

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