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Acid levels in the diet could have profound effects on kidney health

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Three new studies suggest that controlling dietary acid intake could help improve kidney health. Results of these studies will be presented at ASN Kidney Week 2013 November 5-10 at the Georgia World Congress Center in Atlanta, GA.

A diet rich in wheat flour and animal protein produces an acidic environment in the body that worsens with age as kidney function declines. This acid load can be detrimental to a variety of tissues and processes. Research suggests that consuming more fruits and vegetables—which are highly alkaline—may help counteract these effects.

In a new study, a team led by Nimrit Goraya, MD (Texas A&M College of Medicine) investigated whether consuming fruits and vegetables can protect the kidney health of individuals with hypertensive nephropathy, a condition in which damage to the kidneys occurs due to high blood pressure. In this study, 23 hypertensive patients received extra dietary fruits and vegetables, 23 patients received an oral alkaline medication, and 25 patients received nothing. One year later, kidney injury progressed in patients who received no intervention, but kidney health was preserved in those receiving fruits and vegetables or oral alkaline medication.

In another study, Eiichiro Kanda, MD, PhD (Tokyo Kyosai Hospital) and his colleagues investigated the role of dietary acid levels in chronic kidney disease (CKD) progression. The retrospective study analyzed data

from 249 CKD patients in Japan. High acid levels were linked with accelerated kidney function decline, and patients with elevated acid levels had an increased risk of CKD progression compared with patients with low acid levels. The findings suggest that monitoring and control of dietary acid levels are necessary for the prevention of CKD progression.

Another study led by Deidra Crews, MD, FASN (Johns Hopkins University School of Medicine) looked to see whether the effect of dietary acid on risk of kidney failure differed by race in a group of 159 non-Hispanic black and 760 non-Hispanic white CKD patients who had an annual household income below 300% of the federal poverty guideline. Participants were taking part in the 1999-2004 National Health and Nutrition Examination Survey. Overall, 12.4% of participants (38.3% whites and 61.7% blacks) developed kidney failure during an average of 6.4 years of follow up. Blacks had higher acid levels than whites. They also had a 3-fold higher risk of developing kidney failure compared with whites after adjusting for factors such as age, sex, and caloric intake. Increased acid levels were more strongly associated with kidney failure among blacks than among whites. The findings indicate that among CKD patients with low socioeconomic status, the detrimental effect of high dietary acid levels on progression to kidney failure appears to be greater for blacks than for whites.

More information: "Fruits and Vegetables or Oral NaHCO3 Prevent Progression of Kidney Injury in Stage 1 CKD Due to Hypertensive Nephropathy." (Abstract FR-PO816)

"Dietary Acid Load Is Associated with Chronic Kidney Disease Progression in Elderly Patients." (Abstract TH-PO243)

"Race, Dietary Acid Load and Risk of ESRD among Low Income Americans with CKD." (Abstract SA-OR050)

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