

# Low potassium linked to high blood pressure

November 9 2008

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As a risk factor for high blood pressure, low levels of potassium in the diet may be as important as high levels of sodium—especially among African Americans, according to research being presented at the American Society of Nephrology's 41st Annual Meeting and Scientific Exposition in Philadelphia, Pennsylvania.

"There has been a lot of publicity about lowering salt or sodium in the diet in order to lower blood pressure, but not enough on increasing dietary potassium," comments lead author Susan Hedayati, MD, of the University of Texas Southwestern Medical Center in Dallas, Texas, and the Dallas VA Medical Center. The new study suggests that low potassium may be a particularly important contributor to high blood pressure among African Americans, and also identifies a gene that may influence potassium's effects on blood pressure.

The researchers analyzed data on approximately 3,300 subjects from the Dallas Heart Study, about half of whom were African American. The results showed that the amount of potassium in urine samples was strongly related to blood pressure. "The lower the potassium in the urine, hence the lower the potassium in the diet, the higher the blood pressure," says Dr. Hedayati. "This effect was even stronger than the effect of sodium on blood pressure."

The relationship between low potassium and high blood pressure remained significant even when age, race, and other cardiovascular risk factors—including high cholesterol, diabetes, and smoking—were taken into account.

Previous studies, including the landmark "Dietary Approaches to Stop Hypertension" study (DASH), have linked potassium deficiency to high blood pressure. The new results support this conclusion, and provide important new data on the relationship between potassium and blood pressure in a sample that was 50% African American. "Our study included a high percentage of African-Americans, who are known to consume the lowest amounts of potassium in the diet," according to Dr. Hedayati.

Research performed in the laboratory of Dr. Chou-Long Huang, a co-author of this study, has found evidence that a specific gene, called WNK1, may be responsible for potassium's effects on blood pressure. "We are currently doing more research to test how low potassium in the diet affects blood pressure through the activity of this gene," adds Dr. Hedayati.

The conclusions are limited by the fact that people in the Dallas Heart Study weren't following any specific diet. The researchers are currently performing a study in which participants are on fixed potassium diets while measuring the activity of the WNK1 gene to see if WNK1 is responsible for this phenomenon.

Meanwhile, they urge efforts to increase the amount of potassium in the diet, as well as lowering sodium. "High-potassium foods include fruits such as bananas and citrus fruits and vegetables," says Dr. Hedayati. "Consuming a larger amount of these foods in the diet may lower blood pressure."

Source: American Society of Nephrology

2024 from <https://medicalxpress.com/news/2008-11-potassium-linked-high-blood-pressure.html>

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