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## **MITOCHONDRIAL DNA LEVELS IN THE BLOOD MAY PREDICT RISK OF DEVELOPING CHRONIC KIDNEY DISEASE**

*High levels of mitochondrial DNA linked with lower kidney disease risk*

### **Highlights**

- High levels of mitochondrial DNA in the blood was linked with a 25% reduced risk of developing chronic kidney disease compared with low levels.

*An estimated 26 million people in the United States have chronic kidney disease.*

**Washington, DC (January 21, 2016)** — The health of blood cells' energy-producing mitochondria may predict a person's risk of developing chronic kidney disease (CKD), according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN). The findings could lead to improvements in the prevention and treatment of CKD.

In the United States, approximately 26 million people, or 13% of US adults, have CKD. While there are a variety of causes of CKD, many cases involve dysfunction of kidney cells' mitochondria, or the cellular components that produce energy that's critical for cells to survive.

To investigate whether the number of copies of mitochondrial genes (mitochondria DNA copy number) in blood might be a marker of CKD risk, Adrienne Tin, PhD (Johns Hopkins Bloomberg School of Public Health) and her colleagues analyzed data from 9058 participants of the Atherosclerosis Risk in Communities (ARIC) Study, a prospective epidemiologic study conducted in 4 US communities.

Over a median follow-up of 19.6 years, the researchers found that higher levels of mitochondrial DNA copy number were linked with a lower risk of developing CKD. After adjusting for various factors including age, sex, race, diabetes, and hypertension, individuals with the highest levels of mitochondrial DNA copy number had a 25% lower risk of developing CKD compared with individuals with the lowest levels.

"This result suggests modifiable factors influencing mitochondrial DNA copy number may be potential targets for the prevention and treatment of CKD," said Dr. Tin.

Study co-authors include Morgan Grams, MD, PhD; Foram Ashar, BS; John Lan, BS; Avi Rosenberg, MD, PhD; Megan Grove, PhD; Eric Boerwinkle, PhD; Elizabeth Selvin, PhD; Josef Coresh, MD, PhD; Nathan Pankratz, PhD; and Dan Arking, PhD.

Disclosures: The authors reported no financial disclosures.

The article, entitled “Association between Mitochondrial DNA Copy Number in Peripheral Blood and Incident Chronic Kidney Disease: Results from the Atherosclerosis Risk in Communities (ARIC) Study,” will appear online at <http://jasn.asnjournals.org/> on January 21, 2016, doi: 10.1681/ASN.2015060661.

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