



PRESS RELEASE

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CERTAIN GENETIC VARIANTS PREDISPOSE PATIENTS WITH DIABETES TO KIDNEY DISEASE

Highlights

- Researchers have uncovered 16 genetic regions linked to diabetic kidney disease.
- The findings point to potential targets for prevention and treatment.

Washington, DC (September 19, 2019) — In an unprecedented scale, researchers have begun to unravel the genetics that may predispose some individuals to develop kidney disease once they have diabetes, independent of the degree of blood sugar control. The findings appear in an upcoming issue of *JASN*.

Many individuals with type 1 diabetes develop kidney disease despite adequate blood sugar control, while others maintain normal kidney function despite long-term high blood sugar levels. Studies have shown that diabetic kidney disease (DKD) has a heritable component, but little is known about the genes involved.

To identify genetic variants that predispose people to DKD, Jose C. Florez, MD, PhD (Massachusetts General Hospital, Broad Institute, Harvard Medical School) and his colleagues completed genome-wide association analyses in 19,406 individuals of European descent with type 1 diabetes, with and without kidney disease. The researchers identified 16 novel gene regions linked to DKD, and they provided supportive biological data related to this link for some of them. For example, the team uncovered a variant at *COL4A3*, a gene that encodes a collagen protein that is important to kidney health.

“This study represents a substantial advance in the genetics of DKD, where previous studies had yielded few robust associations,” said Dr. Florez. “The 16 DKD-associated regions provide novel insights into the pathogenesis of DKD, identifying potential biological targets for prevention and treatment.”

Study co-authors include Rany M. Salem, Jennifer N. Todd, Niina Sandholm, Joanne B. Cole, Wei-Min Chen, Darrel Andrews, Marcus G. Pezzolesi, Paul M. McKeigue, Linda T. Hiraki, Chengxiang Qiu, Viji Nair, Chen Di Liao, Jing Jing Cao, Erkka Valo, Suna Onengut-Gumuscu, Adam M. Smiles, Stuart J. McGurnaghan, Jani K. Haukka, Valma Harjutsalo, Eoin P. Brennan, Natalie van Zuydam, Emma Ahlqvist, Ross Doyle,

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The article, entitled “Genome-Wide Association Study of Diabetic Kidney Disease Highlights Biology Involved in Glomerular Basement Membrane Collagen,” will appear online at <http://cjasn.asnjournals.org/> on September 19, 2019, doi: 10.1681/ASN.2019030218.

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