Understanding APOL1 Kidney Disease Among Black Americans

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The rates of severe kidney disease are high in individuals of African and Caribbean descent. This could be attributed to genetic variants in the APOL1 gene found only in individuals with recent African or Caribbean ancestry. These variants greatly increase rates of hypertension-associated kidney failure, FSGS, HIV-associated nephropathy, and other forms of non-diabetic kidney disease.

What is APOL1 FSGS?

Every human being inherits 2 copies of the APOL1 gene, one from each parent. Sometimes, there is a mutation in one or both of the APOL1 genes. Those that inherit two mutations of the APOL1 genes have 10x the risk for developing kidney disease, including a rapidly-progressive form of FSGS. These mutations, or variants, of the APOL1 gene are only found in people of African or Caribbean ancestry.

Black Americans account for **35%** of all kidney failure in the US[4]

African Americans are **4-5X** more likely to develop kidney failure than Americans of European descent[1]

31M Americans are affected by some form of kidney disease

Black Americans make up **13%** of the US population

45% of Black Americans under 60 years old on dialysis have the high-risk APOL1 genotype[5]

Approximately **1 in 5** people with 2 copies of the APOL1 gene variant will develop kidney disease[2]

The high-risk APOL1 genotype is found in **75%** of Black patients with FSGS[2]

Many people with the high-risk APOL1 genotype do not show any signs or symptoms of FSGS until kidney failure is approaching.

Knowing if you have the APOL1 gene variants is the key to unlocking the mystery of kidney disease in people with African and Caribbean ancestry.

References

1. *Friedman, D. J., & Pollak, M. R. (2016). Apolipoprotein L1 and Kidney Disease in African Americans. Trends in endocrinology and metabolism: TEM, 27(4), 204–215. https://doi.org/10.1016/j.tem.2016.02.002*
2. *Friedman, D.J. & Pollak, M.R. (2021). APOL1 nephropathy: From genetics to clinical applications. CJASN, 16(2) 294-303. https://doi.org/10.2215/CJN.15161219*
3. *NephCure Kidney International website (2019). The Genetic FSGS Discovery Trailblazing Possible Kidney Disease Treatment.*
4. *National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases (2016). U.S. Renal Data System, USRDS 2016 Annual Data Report: Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States.*
5. *Tzur, S., Rosset, S., Skorecki, K., & Wasser, W.G. (2012). APOL1 allelic variants are associated with lower age of dialysis initiation and thereby increased dialysis vintage in African and Hispanic Americans with non-diabetic end-stage kidney disease. Nephrology Dialysis Transplantation, 27(4), 1,498-1,505. https://doi.org/10.1093/ndt/gfr796*