

The Diagnostic Role of Genetic Testing in APOL1-Mediated Kidney Disease (AMKD)

Learn when to consider APOL1 genetic testing and how APOL1-specific ICD10-CM codes can support diagnosis, documentation and care.



What is APOL1?



APOL1 is a gene that provides instructions for making apolipoprotein L1, a protein involved in the body's immune system. Certain mutations (variants) of the APOL1 gene, called G1 and G2 risk variants, are associated with increased risk of kidney disease.

APOL1-mediated kidney disease (AMKD) has an autosomal recessive pattern of inheritance with incomplete penetrance (not everyone who has two copies of the risk variants will develop AMKD):

- Having two copies of the APOL1 risk variant is considered a major genetic risk factor for developing AMKD.
- Most people with two APOL1 risk variants do not develop AMKD. Other genetic, environmental or health-related factors may contribute to whether AMKD develops.

When should you consider APOL1 testing?

Case study 1

African American male, 28 years old, with swollen legs, foamy urine, biopsy shows focal segmental glomerulosclerosis (FSGS) and family history of kidney failure.

➔ **Consider APOL1 genetic testing:** He has several features that raise suspicion for AMKD, including:

- Western or Central African ancestry
- Early onset kidney disease at a young age
- FSGS on kidney biopsy
- Family history of kidney disease or failure
- No other secondary cause explaining the disease

Genetic testing for APOL1 may help clarify the cause of kidney disease, inform discussions about prognosis and family risk, and identify potential eligibility for APOL1-related clinical trials.

Case study 2

Female of Western African ancestry, 39 years old, considering donating a kidney to younger brother in kidney failure:

- No evidence of kidney disease
- Western African ancestry and strong family history of kidney failure

➔ **Consider APOL1 genetic testing:** A potential living kidney donor with Western African ancestry and strong family history of kidney disease may benefit from APOL1 testing as part of the donor evaluation.

Having two APOL1 risk variants is associated with an increased lifetime risk of chronic kidney disease. However, the individual risk after kidney donation cannot yet be precisely predicted. Genetic testing and counseling can support informed decision-making for the potential donor and transplant team.

What are ICD-10-CM codes?

ICD-10-CM codes are alphanumeric strings used by providers to classify diagnoses, symptoms and injuries.



ICD-10-CM codes for AMKD:

- **N07.B** – Hereditary nephropathy, not elsewhere classified with AMKD
 - Applicable to AMKD with glomerulonephritis or glomerulosclerosis
- **Z84.11** – Family history of AMKD

Why use ICD-10-CM codes?

ICD-10-CM codes are important to use because they:

- Accurately document AMKD in the medical record
- Support continuity and coordination of care
- Improve tracking of AMKD prevalence and outcomes
- Support research and better understanding of AMKD
- Improve recognition and visibility of AMKD within the healthcare system
- Help identify patients who may be eligible for clinical trials

Action steps for providers

- ✓ **Educate patients about APOL1** – Discuss the APOL1 gene with patients who have recent African ancestry and clinical or family history that may suggest increased risk for AMKD.
- ✓ **Consider genetic testing of APOL1 when clinically appropriate** – Testing may be considered for people with Western or Central African ancestry who:
 - Have kidney disease
 - Are being evaluated as potential living donors, or
 - Have a relative with an APOL1 high-risk genotypeTesting should be based on the individual's clinical situation and whether the results could inform care or decision-making.
- ✓ **Provide appropriate genetic counseling for APOL1 genetic testing** – Before testing, patients should understand the potential benefits, limitations and implications of APOL1 genetic testing. Appropriate genetic counseling or other qualified counseling should be available to support informed decision-making and interpretation of results.
- ✓ **Document with ICD-10-CM codes** – When AMKD or a family history is established, use the appropriate ICD-10-CM code in the patient's medical record.



Resources

Genetic counseling can help individuals understand their genetic test results and options for next steps. Reviewing test results with a genetic counselor or other healthcare provider is recommended.

To find a genetic counselor, visit:



[National Society of Genetic Counselors](https://www.nsgc.org/)

To search for current AMKD clinical trials, visit:



[ClinicalTrials.gov](https://www.clinicaltrials.gov/)