natera™ | Renasight™
Kidney gene panel

Genes have a lot to say

Providing insights with genetic testing for chronic kidney disease

Introducing a new tool for the management of chronic kidney disease (CKD)

Renasight™ is a kidney gene panel for patients who have been diagnosed with or who have a family history of CKD.

Renasight has been designed for seamless integration into clinical practice:

- Leverages next-generation sequencing and other methodologies on more than **380 genes** associated with monogenic disorders linked to adult CKD
- Identifies autosomal dominant, autosomal recessive, and X-linked disorders
- Reports out on pathogenic and likely pathogenic variants that were hand-selected by genetics experts to provide actionable information
- Results available within **two to three weeks**

Renasight provides valuable information for patient management

Gain prognostic insight

Test family members and offer genetic counseling

Identify an etiology for patients with unknown cause of their CKD

Prescribe targeted therapies

Refer patients earlier for extra-renal features

Enroll patients in clinical trials

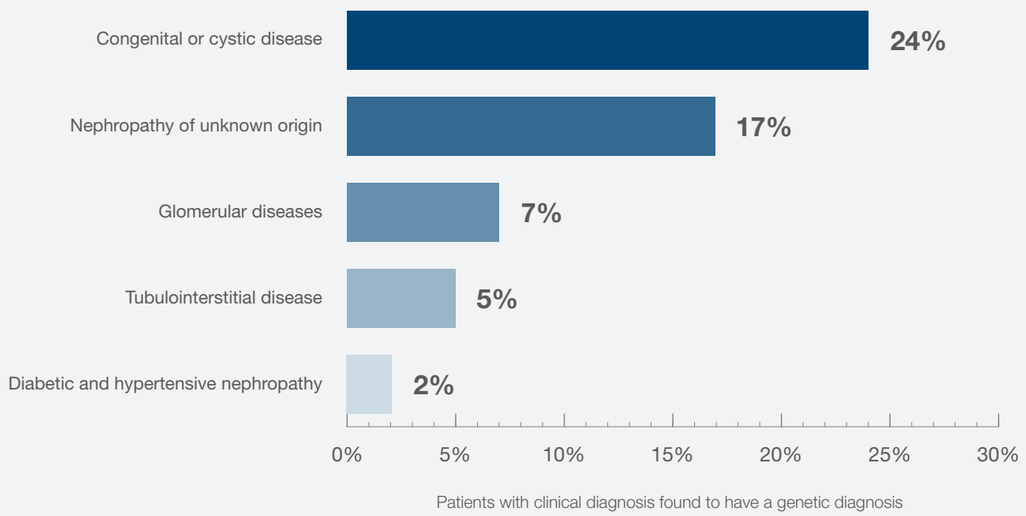
Built on evidence

A recent *New England Journal of Medicine* publication assessing the incidence of genetic disease in a CKD population found **~1 in 10 patients** have a genetic diagnosis.

"This yield is similar to that observed for [hereditary] cancer, for which genomic diagnostics are **routinely used."**[1]

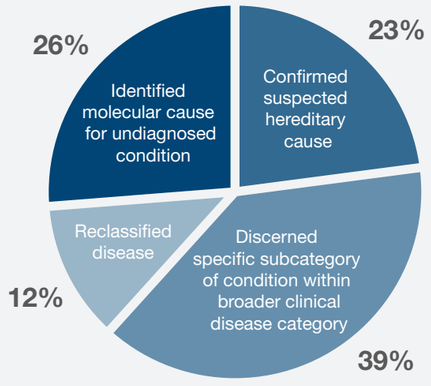
Pinpoint and plan

Detected diagnostic variants in **9.3%** of 3315 patients with CKD and ESRD[1]



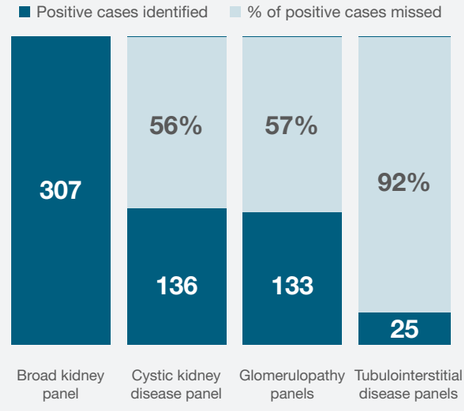
Manage CKD with more information

In **89%** of patients with CKD, a genetic diagnosis had implications for clinical management



Benefit with a broad panel

Targeted panels miss roughly **56%–92%** of positive cases, compared to a broad panel*



*A broad panel was compared to commercially available targeted panels to determine the number of cases identified by the broad panel that targeted panels would potentially be unable to identify.

Improved prognostication of polycystic kidney disease (PKD) progression with genetics[2]

PKD1/PKD2 mutation-positive

PKD1 Truncating mutations	*PKD1* Non-truncating mutations	*PKD2*
58 Average age of ESRD onset	**67** Average age of ESRD onset	**79** Average age of ESRD onset

Earlier progression of ESRD by up to 20 years, depending on mutation

PKD1/PKD2 mutation-negative

- **6%–11%** of patients with clinical autosomal dominant PKD (ADPKD) **are negative for mutations in *PKD1* or *PKD2*.**
- Other conditions may present with features similar to PKD but have different disease progression and risks to family members. Genetic testing can distinguish classic ADPKD from other cystic conditions for a more complete clinical picture.

Clear clinical utility for disease management

Disease	Utility
Primary Hyperoxaluria (PH1, PH2, PH3)	Three forms of PH have been identified, and are associated with different enzyme-producing genes. Specific mutations within these genes may also affect disease severity. Timely diagnosis of PH1 is essential to slow progression, manage medications, and provide appropriate pre-transplant workup.[5]
Fabry disease	X-linked disorder with ESRD typical in the third to fifth decade for males, and variable presentation in females. Early diagnosis can lead to testing of at-risk relatives, enzyme-replacement therapy, and referrals to other specialists.[6]

Individualize patient care with actionable clinical insights for **common inherited disorders** and **less-frequent disorders**

Enhanced insight for glomerular disease[3,4]

COL4A3, COL4A4, COL4A5 MUTATIONS

Disease	Utility
Focal segmental glomerulosclerosis (FSGS)	Identification of a genetic cause for nephrotic syndromes can prevent unnecessary immunosuppression.
Thin basement membrane disorder (TBMD)	Heterozygous carriers rarely progress to more advanced CKD or ESRD.
Alport syndrome	Establish a diagnosis in individuals without extra-renal manifestations; determine inheritance pattern for genetic counseling.

Applicable for patients being evaluated for kidney transplant

Up to **30%** of patients have end-stage renal disease of unknown etiology

Assess risk of recurrence
C3 glomerulopathy (C3G)*

Accurate diagnosis
FSGS*

Provide treatment info
aHUS*

Disease examples

*KDIGO Clinical Practice Guideline on the Evaluation and Management of Candidates for Kidney Transplantation.

Natera is committed to supporting you

We welcome all insurance plans

and provide affordable testing through a variety of payment methods.

How much will it cost?

- Compassionate Care Program: Natera proactively verifies eligibility for all patients. Patients who meet criteria will owe between $0-149, based on federal income criteria. Patients who aren't eligible for the Compassionate Care Program will generally have an out-of-pocket responsibility of $0-$349 depending on their plan.
- Commercial Insurance: To protect against unexpected costs, Natera will estimate a patient's out-of-pocket cost and if it exceeds $349 the patient will be contacted to discuss discounted cash pay options as an alternative to billing insurance.
- Government Insurance (Medicare and Medicaid): We do not expect patients to have any out-of-pocket expense.

Access board-certified genetic counselors

Natera has more than 50 certified genetic counselors who are available to answer any provider or patient questions.

Patients can schedule a complimentary information session with a board-certified genetic counselor before or after their Renasight test.

Discover multiple sample options

Natera accepts both blood and saliva samples. Collection kits can be shipped directly to the patient.

REFERENCES

1 Groopman EE, Marasa M, Cameron-Christie S, et al. Diagnostic utility of exome sequencing for kidney disease. *N Engl J Med*. 2019;380(2):142–51.
2 Lanktree MB, Iliuta IA, Haghighi A, Song X, Pei Y. Evolving the role of genetic testing for the clinical management of autosomal dominant polycystic kidney disease. *Nephrol Dial Transplant*. 2019;34(9):1453-1460.
3 Bullich G, Domingo-Gallego A, Vargas I, et al. A kidney-disease gene panel allows a comprehensive genetic diagnosis of cystic and glomerular inherited kidney diseases. *Kidney Int*. 2018;94(2):363-371.
4 Stokman M, Renkema K, Giles R et al. The expanding phenotypic spectra of kidney diseases: insights from genetic studies. *Nat Rev Nephrol*. 2016 Aug;12(8):472-83.
5 Hopp K, Cogal A, Bergstralh E et al. Phenotype-Genotype Correlations and Estimated Carrier Frequencies of Primary Hyperoxaluria. *J Am Soc Nephrol*. 2015 Oct; 26(10): 2559-2570.
6 Mehta A and Hughes D. Fabry Disease. GeneReviews(R) ncbi.nlm.nih.gov/books/NBK1116/?term=fabry

201 Industrial Road, Suite 410, San Carlos, CA 94070 | Main +1 650.425.4005 | Fax +1 650.412.1974

natera™

Learn more about Renasight:
Call us +1 650.425.4005