Labcorp Offers eGFR Calculation with Both Cystatin C and Creatinine for Improved Diagnosis and Management of CKD

Introduction

An estimated 37 million U.S. adults have chronic kidney disease (CKD). In addition to cardiovascular-associated events, they are at risk for kidney failure or end-stage kidney disease (ESKD) requiring dialysis or kidney transplant. In the 2015-2016 National Health and Nutrition Examination Survey, prevalence of CKD stages G1-4 was 14.2% among adult participants. One in three U.S. adults is at risk for CKD due to prevalent risk factors such as diabetes and/or high blood pressure. The incidence of CKD is projected to increase during the next 20 years because of increasing obesity rates and an aging U.S. population.[1]

Early-stage CKD is often asymptomatic, making laboratory testing imperative for at-risk patients. This typically includes two tests, a serum creatinine with estimated glomerular filtration rate (eGFR), a test of kidney function, and a urine albumin-to-creatinine ratio (uACR), a test of kidney damage. While eGFR results are commonly reported as part of metabolic panels, this test alone is insufficient for CKD detection: The presence of albuminuria reflects endothelial inflammation that may cause proximal tubular damage and progressive kidney function loss.[1]

Asymptomatic individuals with diabetes, hypertension, family history of kidney disease and cardiovascular disease are considered to be at high risk for CKD and should be tested at least annually for eGFR and albuminuria.[2] Additionally, total urine protein measurements may be warranted in some individuals to detect other etiologies of CKD missed by urine albumin measurements.[3]

The Kidney Disease: Improving Global Outcomes (KDIGO) clinical practice guidelines suggest measurement of cystatin C, an alternative endogenous filtration marker, in specific circumstances when GFR estimates based on serum creatinine are thought to be less accurate and when decisions depend on more accurate knowledge of GFR, such as confirmation of CKD diagnosis, determining eligibility for transplant or adjusting dosage of drugs excreted by the kidney.[4]

A 2021 report from the National Kidney Foundation (NKF) and the American Society of Nephrology (ASN) Task Force on Reassessing the Inclusion of Race in Diagnosing Kidney Diseases recommended increased, routine and timely use of cystatin C combined with creatinine as a confirmatory assessment of kidney function, because combining filtration markers (creatinine and cystatin C) for eGFR calculation is more accurate and would support better clinical decisions than either marker alone. A new eGFR equation, the CKD-EPI 2021 eGFR creatinine-cystatin C equation without a race variable, was recommended for clinical use.[5,6] More recently, the Chronic Kidney Disease Prognosis Consortium reported that the use of the new eGFR creatinine-cystatin C equation had significantly greater discrimination of risk of kidney failure with replacement therapy compared to creatinine only based eGFR equations, supporting the Task Force recommendations to increase cystatin C testing.[7]

Key highlights

- A 2021 report from the National Kidney Foundation (NKF) and the American Society of Nephrology (ASN) Task Force on Reassessing the Inclusion of Race in Diagnosing Kidney Diseases recommended increased, routine and timely use of cystatin C combined with creatinine as a confirmatory assessment of kidney function
- Combining filtration markers (creatinine and cystatin C) for eGFR calculation is more accurate and would support better clinical decisions with significantly greater discrimination of risk of kidney failure than either marker alone
- Labcorp is offering testing using the CKD-EPI eGFR creatinine-cystatin C (eGFRcr-cys) calculation without race that has been shown to more accurately estimate true GFR than equations using either the creatinine or cystatin C level separately

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Labcorp's solution

Labcorp is proud to offer the CKD-EPI eGFR creatinine-cystatin C (eGFRcr-cys) calculation without race that has been shown to more accurately estimate measured GFR than equations using either the creatinine or cystatin C level alone.[5] The new eGFRcr-cys equation has smaller differences in bias between race groups than the corresponding eGFRcr equations, with less effect on prevalence estimates for CKD and GFR stages than the corresponding eGFRcr equations.[6]

Labcorp offers three tests containing eGFRcr-cys, one with the eGFR calculation alone and two in combination with recommended urine tests, to simplify the ordering process for diagnosing or confirming CKD:

Labcorp offers

Test Name	Test No.
eGFR Creatinine-Cystatin C Calculation	121022
eGFR Creatinine-Cystatin C Calculation With Albumin:Creatinine Ratio, Urine	121054
eGFR Creatinine-Cystatin C Calculation With Albumin:Creatinine-Protein:Creatinine Ratios, Urine	121065

*For the most current information regarding test options, including specimen requirements and CPT codes, please consult the online Test Menu at www.labcorp.com.

References

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6. Inker LA, Eneanya ND, Coresh J, et al. New Creatinine- and Cystatin C-Based Equations to Estimate GFR without Race. *N Engl J Med.* 2021 Nov 4;385(19)1737-1749.
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