



TEST INFORMATION UPDATE

New eGFR_{cr} Equation

Effective 12/07/2022

VUMC Implementation of the 2021 CKD-EPI eGFR_{cr} Equation

Effective December 7, 2022, VUMC will replace the calculation of estimated glomerular filtration rate (eGFR) from the MDRD equation to the new CKD-EPI 2021 equation, as recommended by the National Kidney Foundation and the American Society of Nephrology (1,2). Like our current MDRD calculation, the CKD-EPI equation does not include a race coefficient.

The eStar display name for eGFR calculated with CKD-EPI is **eGFR_{cr}** and the eStar BaseName will remain **eGFR** for smartphases, etc.

eGFR_{cr} (calculated with CKD-EPI equation) will not trend with values calculated using the MDRD equation. eGFR_{cr} will be reported with orders for "Creatinine Lvl", "Basic Metabolic Panel (BMP)", "Comprehensive Metabolic Panel (BMP)" and "Renal Pnl".

Using the new CKD-EPI equation, the reportable range is 0-90 mL/min/1.73 m² vs the old equation, which was 0-60 mL/min/1.73 m². For most patients the CKD-EPI eGFR_{cr} result will be similar, however, for some, the values may differ by more than 10%, particularly at higher values of eGFR and for younger adults (3).

The eGFR_{cr} calculation will not be used for patients <18 years of age. For patients <18 years of age, the Bedside Schwartz equation is **still** recommended for use: [Pediatric GFR Calculator | National Kidney Foundation](#).

eGFR_{cr} results are interpreted based on clinical context. Clinical practice recommendations suggest ordering Cystatin C as a confirmatory test for patients with eGFR_{cr} of 45-59 mL/min/1.73m² with urine albumin to creatinine ratio <30 mg/g, and in patients for whom the creatinine may be a less reliable indicator of GFR near decision points.

References

1. Delgado C, Baweja M, Crews DC, et al. A Unifying Approach for GFR Estimation: Recommendations of the NKF-ASN Task Force on Reassessing the Inclusion of Race in Diagnosing Kidney Disease. *Am J Kidney Dis.* 2021 DOI: 10.1053/j.ajkd.2021.08.003
2. Inker LA, Eneanya ND, MCorsh J, et al. New Creatinine- and Cystatin C–Based Equations to Estimate GFR without Race. *New England J Med.* 2021: DOI: 10.1056/NEJMoa2102953
3. Miller WG, Kaufman HW, Levey AS, et al: National Kidney Foundation Laboratory Engagement Working Group recommendations for implementing the CKD-EPI 2021 race-free equations for estimated glomerular filtration rate: Practical guidance for clinical laboratories. *Clin Chem.* 2022 Mar 31;68(4):511-520. doi: 10.1093/clinchem/hvab278