

National task force recommends removing race from kidney function equation

September 25 2021



Nwamaka Eneanya, MD, MPH, an assistant professor of Medicine and Epidemiology, has been a vocal advocate for the removal of race from the kidney function algorithm and is a member of the joint task force that generated the new clinical recommendations. Credit: Perelman School of Medicine at the University of Pennsylvania

A national task force announced Thursday that it is recommending the immediate implementation of a new diagnostic equation for measuring kidney function, which advocates say will promote health equity and increase access to transplantation for Black patients.

The recommendation is supported by ongoing research from clinical researchers in the Perelman School of Medicine at the University of Pennsylvania, who have played a critical role in quantifying the benefits and risks of abandoning race in [kidney function](#) estimation. The clinical change, which is anticipated to go into effect at Penn Medicine this year, was identified as a key priority for the health system's [Action for Cultural Transformation \(ACT\)](#) strategic plan that launched in 2020.

"My hope is that this change will spearhead a movement across all of medicine for clinicians to reevaluate whether they are using race responsibly," said Nwamaka Eneanya, MD, MPH, a nephrologist, an assistant professor of Medicine and Epidemiology, and director of Health Equity, Anti-Racism, and Community Engagement in the Division of Renal-Electrolyte and Hypertension at Penn.

Eneanya has been a vocal advocate for the removal of race from the kidney function algorithm and is a member of the joint task force of the American Society of Nephrology and the National Kidney Foundation, which generated the recommendations. She is also a co-author on a paper published this week in the *New England Journal of Medicine (NEJM)*, which introduces new equations for measuring kidney function that do not include race. A second *NEJM* paper published this week—co-
led by Harold Feldman, MD, MSCE, a professor of Epidemiology and Medicine at Penn—recommends that, as a more long-term solution, national efforts should be made to increase the widespread use of the protein cystatin C as a biomarker of kidney health.

Because the direct measurement of kidney function is infeasible at the

bedside, clinicians instead evaluate its level using an estimating equation called eGFR, which stands for estimated glomerular filtration rate. eGFR estimates how much creatinine is in a patient's blood to give a picture of how well their kidneys are working. Its value is an important part of the information used to determine if and when a patient is referred to some types of clinical care, including kidney transplantation.

The problem, critics of the current equation say, is that it assigns a higher eGFR to patients who self-identify as Black. This means that Black patients must reach a higher creatinine level than white patients to be put on the kidney transplant waitlist.

In a widely-cited opinion piece [published in JAMA in 2020](#), Penn Medicine researchers argued that it is harmful for eGFR equations to assert that existing organ function is different between individuals who are otherwise identical except for race. They write that population studies reveal only small differences in gene distributions between racial groups, and that "the history of [medicine](#) offers abundant evidence that racial categories were often generated arbitrarily and at times implemented to reinforce social inequality."

The piece—authored by Eneanya, along with Peter Reese, Ph.D., MD, MSCE, a professor of Medicine and Epidemiology, and Wei Yang, Ph.D., an associate professor of Biostatistics—helped to spark a national conversation about removing race from the kidney function algorithm. In response, the American Society of Nephrology and the National Kidney Foundation created a joint task force to reassess the inclusion of race in eGFR, as well as its implications for diagnosis and subsequent management of patients with kidney diseases.

The task force's final report recommends that U.S. clinical laboratories immediately implement a newly refit CKD-EPI creatinine equation that does not incorporate race information. This new equation "has

acceptable performance characteristics and potential consequences that do not disproportionately affect any one group of individuals," the authors say.

However, the task force report also notes that there should be long-term national efforts to increase the routine and timely measurement of cystatin C, rather than or in addition to creatinine, to estimate [kidney](#) function. This is because—as data from 1,248 patients in the Chronic Renal Insufficiency Cohort (CRIC) Study published in the *NEJM* paper co-authored by Feldman shows—"estimating GFR using cystatin C generates similar results to estimates based on creatinine and race while eliminating the negative consequences of today's race-based approaches." Currently, Feldman says, cystatin C tests are costly and less readily available at hospitals and other clinical laboratories around the country.

While increasing access to cystatin C-based lab tests will be an important future step in the nephrology field, the removal of race from the eGFR algorithm is a major milestone toward advancing health equity, according to Eneanya and the authors of the joint task force report.

More information: Lesley A. Inker et al, New Creatinine- and Cystatin C–Based Equations to Estimate GFR without Race, *New England Journal of Medicine* (2021). [DOI: 10.1056/NEJMoa2102953](https://doi.org/10.1056/NEJMoa2102953)

Provided by Perelman School of Medicine at the University of Pennsylvania

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