Medical Xpress

How might eliminating race-based adjustments in estimates of kidney function affect kidney transplant waitlisting?

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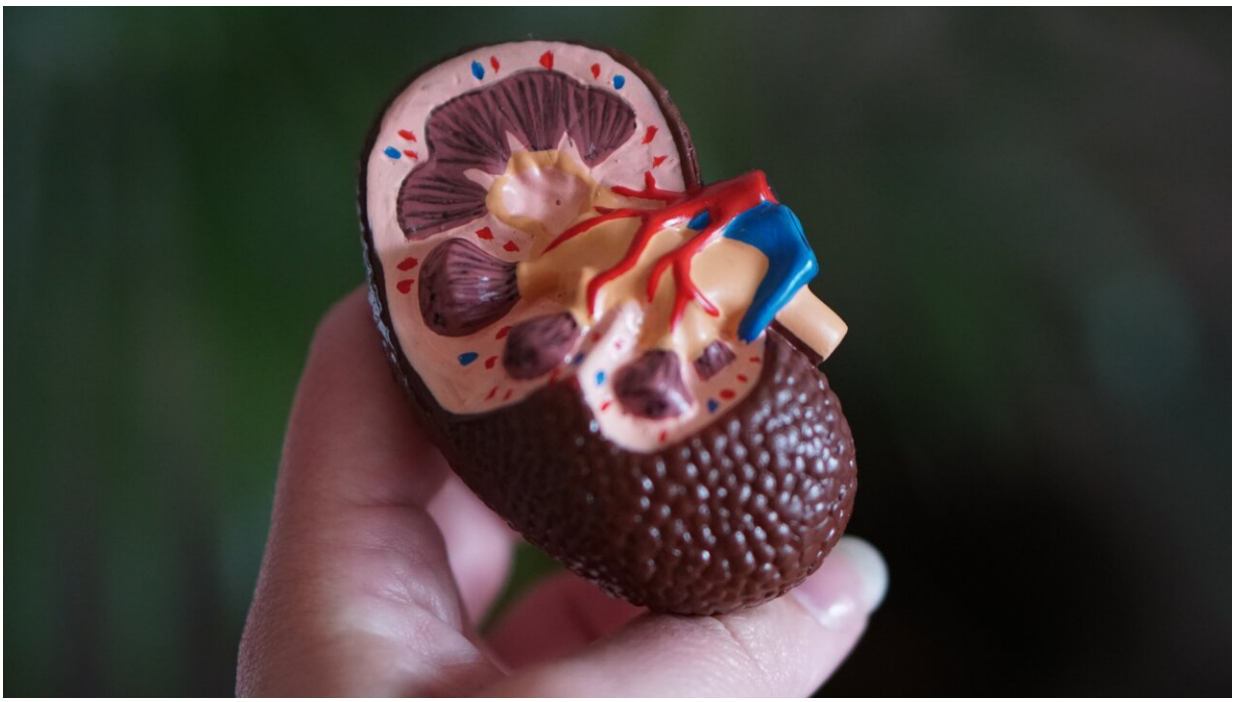

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Recent efforts have been working to do away with race-based algorithms in medicine—such as an adjustment for Black race in equations that estimate individuals' kidney function. New research published in the *Clinical Journal of the American Society of Nephrology (CJASN)*

examines the impact of using these new equations on kidney transplant waitlist access.

Assessing individuals' kidney function plays an important role in screening for and treating kidney diseases, and current methods primarily rely on estimating kidney function, what's known as a patient's estimated glomerular filtration rate (eGFR), from the serum creatinine level. Historically, eGFR equations include an adjustment for Black versus non-Black race, resulting in higher eGFR values for a Black patient compared with a non-Black patient. Recognizing that race is a social and not a biological construct, however, several healthcare institutions no longer report eGFR with an adjustment for Black race, and ASN and the National Kidney Foundation have endorsed the idea that race modifiers should not be included in equations to estimate kidney function. A new set of race-free equations to estimate GFR were published in 2021.

A measurement of eGFR is the primary criterion for determining eligibility for registration on the kidney transplant waitlist in patients not yet treated with dialysis—called preemptive waitlisting. Preemptive wait time accrual, or the waiting time that can accumulate before a patient starts dialysis, impacts when a patient may ultimately receive an offer for a kidney transplant. According to current national policy, patients can begin to accrue wait time for transplantation when their eGFR is 20 mL/min or less.

Elaine Ku, MD, MAS (University of California, San Francisco) and her colleagues examined whether using new race-free equations to guide preemptive waitlisting could minimize racial differences in accruable preemptive wait time. The team determined the association between race (Black or white) and time spent with eGFR under 20 mL/min/1.73 m^2 using the new race-free creatinine-based equation or a new race-free cystatin C-based equation, which could potentially be accrued as

preemptive wait time. (Blood levels of creatinine and cystatin C are different indicators of kidney function.)

In a previous study, the authors showed that when using the older equation that included Black race, Black individuals had a shorter time to kidney failure (and would theoretically accrue less wait time). In this study, they found that using the new race-free creatinine-based equation, time to kidney failure was similar between Black and white patients. However, the time to kidney failure was still shorter for Black patients using the cystatin C-based race-free equation. The findings suggest that using the race-free creatinine-based equation to determine preemptive waitlist eligibility is the strategy that may reduce racial differences in access to preemptive wait time accrual.

"We believe that the findings in our study are helpful in providing some preliminary data on how use of the different GFR estimating equations would theoretically affect wait time accrual prior to the start of dialysis," said Dr. Ku. "We found that the new creatinine-based equation seemed to be associated with more similar wait time that could potentially be accrued compared with use of the cystatin-C based equation, but our findings require further validation in larger groups of patients."

An accompanying editorial notes that although a race-free creatinine-based equation for eGFR may attenuate racial differences in access to kidney transplantation, it is uncertain what consequences there may be from widespread implementation of this formula. "Although the number of Black patients affected by use of the new formula will be smallest for dialysis initiation and referral for transplantation, more Black patients will be affected at higher eGFR thresholds, including kidney donor candidacy and post-donation follow-up. There would be a corresponding increase in the prevalence of CKD among individuals in the general population who identify as Black and may now be excluded from kidney donation, thus limiting access to living donation in a population already

at a disadvantage," the authors wrote.

"There are also potential implications for enrollment and conduct of clinical trials, such as fewer outcomes observed in trials where events are more likely to occur in those with lower eGFR who may now be excluded. Furthermore, although systematic overestimation among non-Black patients has the potential to result in inappropriate drug continuation or overdosing for medications, underestimation among Black patients may result in drug discontinuation and underdosing, including of chemotherapeutic agents and weight loss medications."

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More information: Elaine Ku et al, Comparison of 2021 CKD-EPI Equations for Estimating Racial Differences in Preemptive Waitlisting for Kidney Transplantation, *Clinical Journal of the American Society of Nephrology* (2022). DOI: 10.2215/CJN.04850422

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