

## **What are GFR and eGFR? How are they used?**

The glomerular filtration rate (GFR) is a common measure of kidney function. It measures how quickly a person's kidneys remove a waste product called creatinine from the blood.

A higher GFR result means a person's kidneys are working better. A lower GFR suggests the kidneys are not working well. A very low GFR (such as a result of 20 mL/minute or lower) is a sign of kidney failure.

While GFR can be measured directly, a direct GFR test requires a person to have multiple blood draws over several hours. A simpler test is called an estimated glomerular filtration rate (eGFR). This involves a single blood test and a mathematical calculation of the rate.

A number of different mathematical formulas may be used to calculate an eGFR. The formulas compare the amount of creatinine in a person's blood against similar creatinine results for a reference group of people whose GFR has been measured directly. The formula then uses a conversion factor to determine the rate, then calculating what the GFR rate should be. This [frequently asked questions \(FAQ\) document](#) provides additional information.

GFR and eGFR are both commonly used to assess when a person needs dialysis or a transplant to treat end-stage kidney disease.

## **Is eGFR calculated differently for Black individuals?**

Some eGFR formulas have used a separate calculation for people identified as Black. This was first done as eGFR calculations were developed beginning in the late 1990s, to adjust for findings that showed an average difference in blood creatinine between Black and non-Black individuals. The Black race factor generally predicts a higher level of kidney function than a race-neutral eGFR using the same blood test result. In some of the early research findings that led to the eGFR, Black individuals were not represented as fully as they should have been in the group of people sampled.

Recently, researchers have found that race-adjusted eGFR calculations have erred by being too high on average. A higher eGFR suggests the person has a higher degree of kidney function. This error in interpretation has caused some Black people to be identified with and treated for kidney failure at a much later stage of their disease. This may include their access to a timely kidney transplant.

The removal of race variables from eGFR calculations has been broadly supported by institutions including the [National Academies of Sciences, Engineering and Medicine](#), as well as a [joint task force](#) of the American Society of Nephrology (ASN) and the National Kidney Foundation (NKF). Many healthcare providers no longer use a Black race modifier.

## **How does the OPTN use eGFR?**

In OPTN policy, eGFR is one of the factors that may be used to set the date a kidney transplant candidate starts to get credit for waiting time. Total waiting time is an important part of the overall transplant priority a kidney candidate has when getting organ offers. (Other qualifying factors for waiting time may include when the person began regular dialysis, or when a creatinine clearance test

met a threshold for kidney failure). Kidney transplant programs routinely submit directly measured GFR or eGFR test results to the OPTN as part of a transplant candidate's listing.

### **How has the OPTN addressed inequity in race-inclusive eGFR?**

In two different actions in 2022, the OPTN Board of Directors approved actions to ensure that any transplant candidate negatively affected by use of a race-inclusive eGFR can be eligible to have a waiting time modification, if a race-neutral eGFR test shows they would have qualified sooner.

#### **June 2022 OPTN Board action**

In June 2022, the OPTN Board of Directors unanimously approved a measure to [require transplant hospitals to use a race-neutral calculation](#) when estimating a patient's level of kidney function.

The June 2022 OPTN board action also stated that if a kidney program could determine a candidate's current waiting time credit was based on a race-inclusive eGFR, the waiting time start date could be adjusted earlier if the following conditions were met:

- A race-neutral eGFR result, using data from the same date, shows that the candidate had a value of 20 mL/minute or lower
- The new date would have qualified the candidate to start accruing waiting time earlier than their current date in the OPTN system

Under the June board action, the transplant program could only apply any backlisted waiting date as far back as the date the person was first registered for a transplant. This did not apply for any date prior to when the person was first registered for a transplant. (As noted above, waiting time credit can begin prior to the time a person is registered at a transplant hospital). As a result, OPTN committees and the OPTN board continued to develop a way to apply the action prior to a listing date, and to establish a systematic process to ensure that any eligible candidate receives full waiting time credit.

#### **December 2022 Board action**

At its December 2022 meeting, the OPTN Board of Directors [unanimously approved an additional measure](#) that will allow waiting time credit to be adjusted for any candidate affected by a race-inclusive eGFR, to apply to any date where the candidate met the qualifications. The following criteria need to apply for waiting time adjustment:

- The kidney transplant program must document that on or before the date for which the candidate currently gets waiting time credit in the OPTN system, he or she had an eGFR value higher than 20 mL/minute, which was based on a calculation specifically for Black individuals.
- Recalculation of the candidate's kidney function using a race-neutral eGFR should have qualified them on that date with an eGFR value of 20 mL/minute or lower. This date could be prior to when the candidate was registered for a transplant.

- The credit will apply only to currently registered kidney transplant candidates, not to people who have received a transplant or otherwise have been removed from the transplant waiting list.

#### **How will the OPTN monitor and assist in the process?**

The OPTN will assess over the coming year the progress of kidney transplant programs' notification and resulting requests for waiting time adjustment. The OPTN is also actively assisting kidney programs with education and resources to notify candidates and document their actions, including a resource toolkit and frequently asked questions (FAQ) document for members. In addition, the OPTN is preparing a FAQ document for transplant candidates about eGFR and how they may qualify for waiting time adjustment.