Item S1. Formulas

Formulas

2021 CKD-EPI

```
fcoefk[gender_] := If[gender == "female", 0.7, 0.9, "]"
fcoefal[gender_] := If[gender == "female", -0.241, -0.302, ""]
fcoefd[gender_] := If[gender == "female", 1.012, 1, ""]

fegfrcras[crea_, age_, gender_] :=
142 * Min[crea / fcoefk[gender], 1] fcoefal[gender] * 
Max[{crea / fcoefk[gender], 1}]^{-1.2} * 0.9938^{age} * fcoefd[gender]
```

Reverse 2009 CKD-EPI

```
f2kappa[gender_] := If[gender == "female", 0.7, 0.9, ""]
f2alpha1[gender_] := If[gender == "female", -0.329, -0.411, ""]
f2genderplus[gender_] := If[gender == "female", 144, 141, ""]
f2race[race_] := If[race == "black", 1.159, 1, ""]

f2creal[crea_, age_, gender_, race_] :=

f2kappa[gender] 0.993^{-age} gfr f2genderplus[gender] f2race[race]

f2crea2[crea_, age_, gender_, race_] :=

f2kappa[gender] 0.993^{-age} gfr f2genderplus[gender] f2race[race]

f2creafinal[crea_, age_, gender_, race_] :=
If[f2creal[crea, age, gender, race] < f2kappa[gender],
f2creal[crea, age, gender, race], f2crea2[crea, age, gender, race]]
```
Formulas for absolute and relative differences

\[
\text{f2ad}[\text{gfr}, \text{age}, \text{gender}, \text{race}] := \\
\text{fegfrcras}[\text{f2creafinal}[\text{gfr}, \text{age}, \text{gender}, \text{race}], \text{age}, \text{gender}] - \text{gfr} \\
\text{f2rd}[\text{gfr}, \text{age}, \text{gender}, \text{race}] := \\
100 \times (\text{fegfrcras}[\text{f2creafinal}[\text{gfr}, \text{age}, \text{gender}, \text{race}], \text{age}, \text{gender}] - \text{gfr}) / \text{gfr}
\]
Item S2. MDRD equation compared with the 2021 CKD-EPI refit

MDRD

Formulas

\[
\begin{align*}
\text{fmdrd}\left[\text{crea}_-, \text{age}_-, \text{gender}_-, \text{race}_-\right] & : = 175 \cdot \text{crea}^{-1.154} \cdot \text{age}^{-0.203} \cdot \\
& \quad \text{If}\left[\text{gender} = \"female\", 0.742, 1\right] \cdot \text{If}\left[\text{race} = \"black\", 1.212, 1\right] \\
\text{fcreamdrd}\left[\text{gfr}_-, \text{age}_-, \text{gender}_-, \text{race}_-\right] & : = \\
\frac{87.84299769292417}{\left(\text{If}\left[\text{gender} = \"female\", 0.742, 1\right] \cdot \text{If}\left[\text{race} = \"black\", 1.212, 1\right]\right)^{0.203}} \cdot \text{gfr} \\
\text{fadmdrd}\left[\text{gfr}_-, \text{age}_-, \text{gender}_-, \text{race}_-\right] & : = \\
\text{fegfrcras}\left[\text{fcreamdrd}\left[\text{gfr}, \text{age}, \text{gender}, \text{race}\right], \text{age}, \text{gender}\right] - \text{gfr} \\
\text{frdmdrd}\left[\text{gfr}_-, \text{age}_-, \text{gender}_-, \text{race}_-\right] & : = \\
100 \cdot \left(\text{fegfrcras}\left[\text{fcreamdrd}\left[\text{gfr}, \text{age}, \text{gender}, \text{race}\right], \text{age}, \text{gender}\right] - \text{gfr}\right) / \text{gfr}
\end{align*}
\]
A. Absolute changes in eGFR (ml/min/1.73m²) with 2021 CKD-EPI refit

B. Relative changes in eGFR (ml/min/1.73m²) with 2021 CKD-EPI refit

C. Reclassification of CKD-stages with 2021 CKD-EPI refit
**Figure legend**

Changes due to switching from the MDRD equation with a race coefficient to the 2021 CKD-EPI creatinine equation refit without the race variable as a function of age (x-axis, 18-92 years) and the MDRD eGFR values (y-axis, 1-105 ml/min/1.73m2).

A - Contour plots of absolute differences in eGFR (2021 CKD-EPI refit minus MDRD). Contours are drawn for every 1ml/min/1.73m2 difference. Areas where 2021 CKD-EPI refit eGFR is lower than MDRD are shaded in red, where it is higher in green.

B - Contour plots of the relative differences in eGFR (100*(2021 CKD-EPI refit minus MDRD) divided by MDRD). Contours are drawn for every 1% difference. Areas where 2021 CKD-EPI refit eGFR is lower than MDRD are shaded in red, where it is higher in green.

C - Region plots showing discordant CKD-stages. Areas where the CKD-stage according to 2021 CKD-EPI refit is higher than according to MDRD (i.e., eGFR is worse) are shaded in red, areas where CKD-stage is lower (i.e., eGFR is better) are shaded in green. In the white areas, CKD-stages are the same with both equations.