Item S1. Formulas

Formulas

2021 CKD-EPI

In[1]:=
```
fcoefk[gender_] := If[gender == "female", 0.7, 0.9, ""]
fcoefa1[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]^fcoefa1[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, ""]


f2crea1[gfr_, age_, gender_, race_] :=
 f2kappa[gender] (0.993`^-age gfr / (f2genderplus[gender] × f2race[race]))^(1/f2alpha1[gender])
f2crea2[gfr_, age_, gender_, race_] :=
 f2kappa[gender] (0.993`^-age gfr / (f2genderplus[gender] × f2race[race]))^(1/-1.209)


f2creafinal[gfr_, age_, gender_, race_] :=
 If[f2crea1[gfr, age, gender, race] < f2kappa[gender],
  f2crea1[gfr, age, gender, race], f2crea2[gfr, age, gender, race]]
```

Formulas for absolute and relative differences

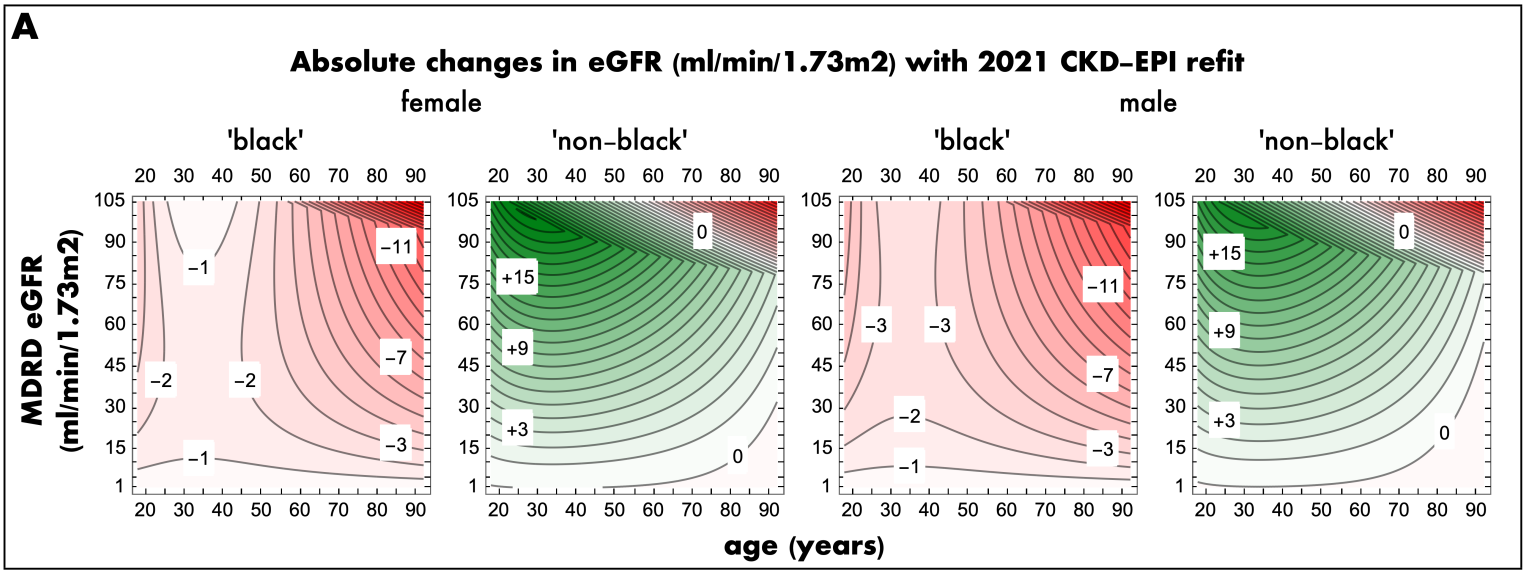
```
f2ad[gfr_, age_, gender_, race_] :=
 fegfrcras[f2creafinal[gfr, age, gender, race], age, gender] - gfr
f2rd[gfr_, age_, gender_, race_] :=
 100 * (fegfrcras[f2creafinal[gfr, age, gender, race], age, gender] - gfr) / gfr
```

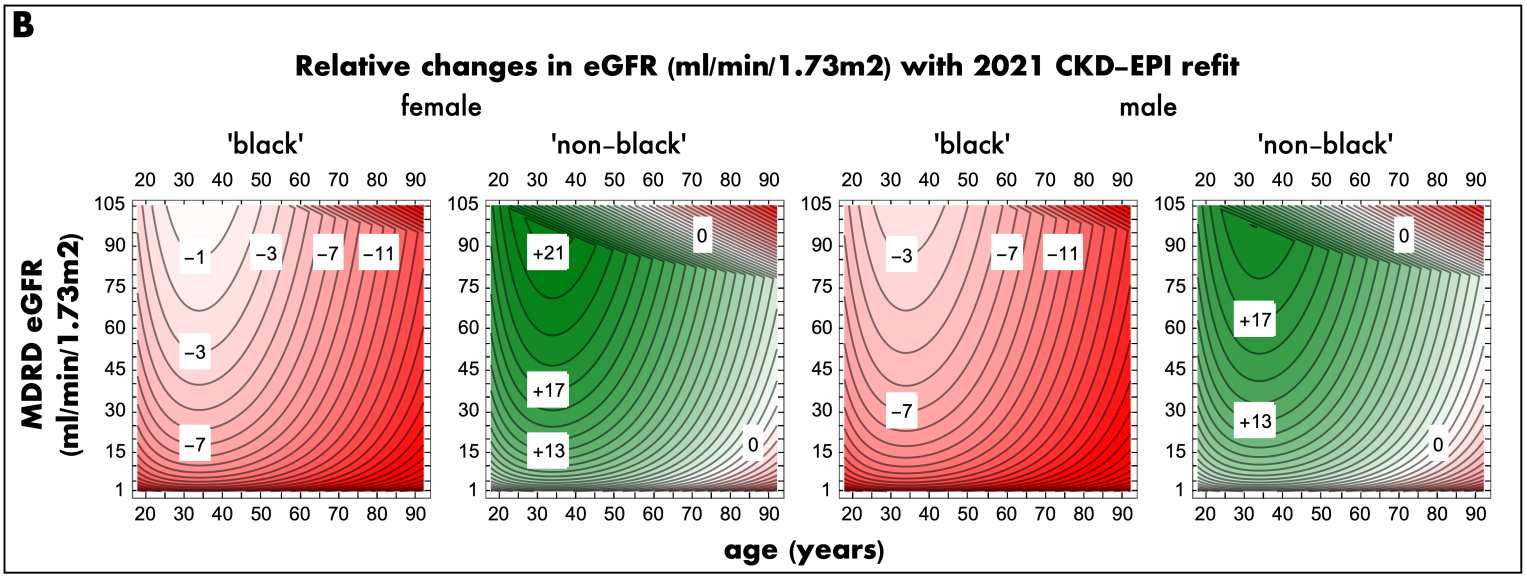
Item S2. MDRD equation compared with the 2021 CKD-EPI refit

MDRD

Formulas

In[•]:=
```
fmdrd[crea_, age_, gender_, race_] := 175 * crea^-1.154 * age^-0.203 *
  If[gender == "female", 0.742, 1] * If[race == "black", 1.212, 1]
fcreamdrd[gfr_, age_, gender_, race_] :=
 87.84299769292417` / (age^0.203` gfr / (If[gender == "female", 0.742, 1] * If[race == "black", 1.212, 1]))
fadmdrd[gfr_, age_, gender_, race_] :=
 fegfrcras[fcreamdrd[gfr, age, gender, race], age, gender] - gfr
frdmdrd[gfr_, age_, gender_, race_] :=
 100 * (fegfrcras[fcreamdrd[gfr, age, gender, race], age, gender] - gfr) / gfr
```


A
Absolute changes in eGFR (ml/min/1.73m2) with 2021 CKD-EPI refit
female
male
'black'
'non-black'
'black'
'non-black'
MDRD eGFR (ml/min/1.73m2)
age (years)


B
Relative changes in eGFR (ml/min/1.73m2) with 2021 CKD-EPI refit
female
male
'black'
'non-black'
'black'
'non-black'
MDRD eGFR (ml/min/1.73m2)
age (years)

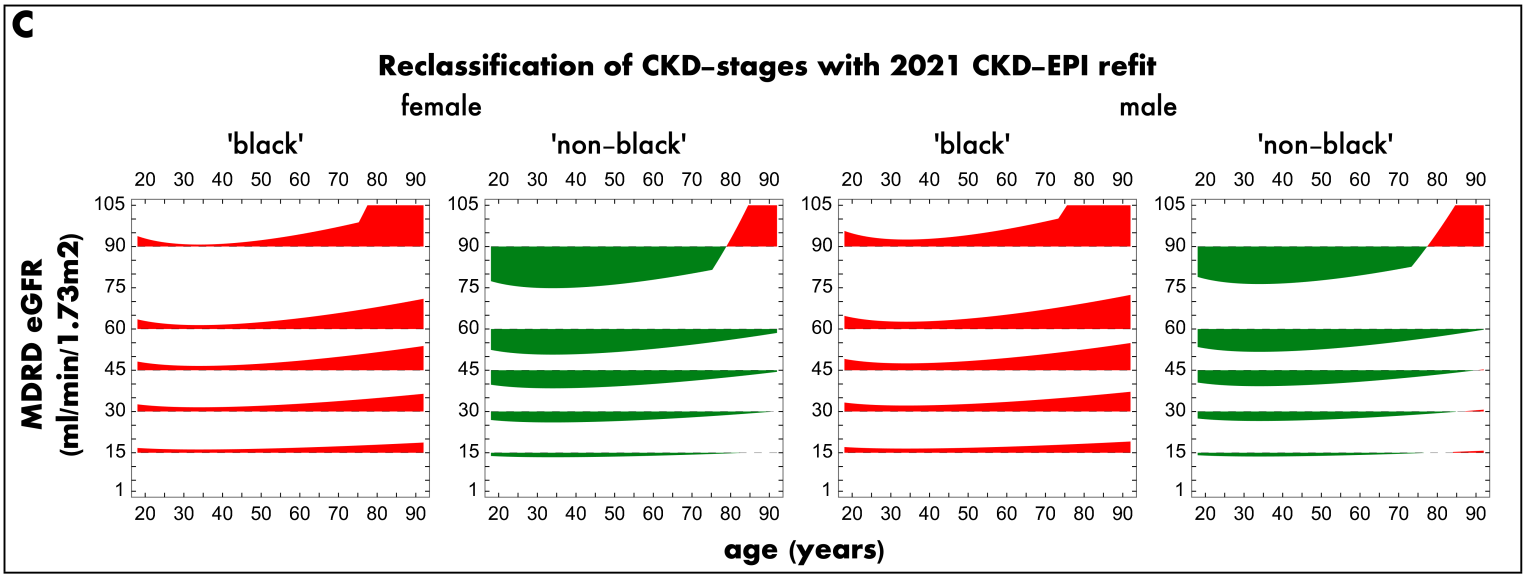

C
Reclassification of CKD-stages with 2021 CKD-EPI refit
female
male
'black'
'non-black'
'black'
'non-black'
MDRD eGFR (ml/min/1.73m2)
age (years)

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.