Calculation of estimated glomerular filtration rate (eGFR):
/* compute eGFR for sample with known serum creatinine values */

The **CKD-EPI** equation is the recommended calculation for a general population:

\[
\text{eGFR} = 141 \times \min \left( \frac{\text{Scr}}{\kappa}, 1 \right)^\alpha \times \max \left( \frac{\text{Scr}}{\kappa}, 1 \right)^{-1.209} \times 0.993^{\text{Age}} \times 1.018 \ [\text{if female}] \times 1.159 \ [\text{if black}]
\]

where:
- $\text{Scr}$ is serum creatinine in mg/dL,
- $\kappa$ is 0.7 for females and 0.9 for males,
- $\alpha$ is -0.329 for females and -0.411 for males,
- min indicates the minimum of $\text{Scr} / \kappa$ or 1, and
- max indicates the maximum of $\text{Scr} / \kappa$ or 1.

The **MDRD** (Modification of Diet in Renal Disease) equation is an alternative calculation and performs well in a population of individuals with chronic kidney disease:

\[
\text{eGFR} = 175 \times \text{Scr}^{-1.154} \times \text{age}^{-0.203} \times 0.742 \ [\text{if female}] \times 1.212 \ [\text{if black}]
\]

where eGFR is expressed as mL/min per 1.73 m$^2$ of body surface, and $\text{Scr}$ is serum creatinine measured in mg/dL.