

eGFR can be calculated from several different formulas based either on the concentration of P-Creatinine, or the concentration of P-Cystatin C or both. You will find the most common used formulas below.

To be able to calculate the eGFR, you need to know age, gender, and weight of the person.

Units:

- P-Crea : µmol/L
- P-CysC : mg/L
- Age : Years
- eGFR : mL/min/1.73m²

The international recommended formulas for calculation of eGFR based on Creatinine:

“2021 CKD-EPI_{Crea}” formulas for persons >18 years:

Female:

For P-Creatinine ≤ 62 µmol/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea}} = 142 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.241} \times 0.9938^{\text{age}} \times 1.012$$

For P-Creatinine > 62 µmol/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea}} = 142 \times \left(\frac{\text{P-Crea}}{62} \right)^{-1.2} \times 0.9938^{\text{age}} \times 1.012$$

Male:

For P-Creatinine ≤ 80 µmol/L

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea}} = 142 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.302} \times 0.9938^{\text{age}}$$

For P-Creatinine > 80 µmol/L

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea}} = 142 \times \left(\frac{\text{P-Crea}}{80} \right)^{-1.2} \times 0.9938^{\text{age}}$$

The international recommended formulas for calculation of eGFR based on Creatinine:

“2009 CKD-EPI_{Crea}” formulas for persons >18 years:

Female:

For P-Creatinine ≤ 62 µmol/L:

$$\text{eGFR (2009 CKD-EPI)}_{\text{Crea}} = 144 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.329} \times 0.993^{\text{age}}$$

For P-Creatinine > 62 µmol/L:

$$\text{eGFR (2009 CKD-EPT)}_{\text{Crea}} = 144 \times \left(\frac{\text{P-Crea}}{62} \right)^{-1.209} \times 0.993^{\text{age}}$$

Male:

For P-Creatinine ≤ 80 µmol/L

$$\text{eGFR (2009 CKD-EPT)}_{\text{Crea}} = 141 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.411} \times 0.993^{\text{age}}$$

For P-Creatinine > 80 µmol/L

$$\text{eGFR (2009 CKD-EPT)}_{\text{Crea}} = 141 \times \left(\frac{\text{P-Crea}}{80} \right)^{-1.209} \times 0.993^{\text{age}}$$

The international recommended formulas for calculation of eGFR based on Creatinine and Cystatin C:
“2021 CKD-EPI_{Crea-CysC}” formulas for persons >18 years:

Female:

For P-Creatinine ≤ 62 µmol/L and P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.219} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.323} \times 0.9961^{\text{age}} \times 0.963$$

For P-Creatinine ≤ 62 µmol/L and P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.219} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.778} \times 0.9961^{\text{age}} \times 0.963$$

For P-Creatinine > 62 µmol/L and P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.544} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.323} \times 0.9961^{\text{age}} \times 0.963$$

For P-Creatinine > 62 µmol/L and P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.544} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.778} \times 0.9961^{\text{age}} \times 0.963$$

Male:

For P-Creatinine ≤ 80 µmol/L and P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.144} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.323} \times 0.9961^{\text{age}}$$

For P-Creatinine ≤ 80 µmol/L and P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.144} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.778} \times 0.9961^{\text{age}}$$

For P-Creatinine > 80 µmol/L and P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.544} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.323} \times 0.9961^{\text{age}}$$

For P-Creatinine > 80 µmol/L and P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2021 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.544} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.778} \times 0.9961^{\text{age}}$$

**The international recommended formulas for calculation of eGFR based on Creatinine and Cystatin C:
“2012 CKD-EPI_{Crea-CysC}” formulas for persons >18 years:**

Female:

For P-Creatinine ≤ 62 µmol/L and P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{Crea-CysC}} = 130 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.248} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.375} \times 0.995^{\text{age}}$$

For P-Creatinine ≤ 62 µmol/L and P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{Crea-CysC}} = 130 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.248} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.711} \times 0.995^{\text{age}}$$

For P-Creatinine > 62 µmol/L and P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{Crea-CysC}} = 130 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.601} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.375} \times 0.995^{\text{age}}$$

For P-Creatinine > 62 µmol/L and P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{Crea-CysC}} = 130 \times \left(\frac{\text{P-Crea}}{62} \right)^{-0.601} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.711} \times 0.995^{\text{age}}$$

Male:

For P-Creatinine ≤ 80 µmol/L and P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.207} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.375} \times 0.995^{\text{age}}$$

For P-Creatinine ≤ 80 µmol/L and P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.207} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.711} \times 0.995^{\text{age}}$$

For P-Creatinine > 80 µmol/L and P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.601} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.375} \times 0.995^{\text{age}}$$

For P-Creatinine > 80 µmol/L and P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{Crea-CysC}} = 135 \times \left(\frac{\text{P-Crea}}{80} \right)^{-0.601} \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.711} \times 0.995^{\text{age}}$$

The international recommended formulas for calculation of eGFR based on Cystatin C:
“2012 CKD-EPI_{CysC}” formulas for persons >18 years:

Female:

For P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{CysC}} = 133 \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.499} \times 0.996^{\text{age}} \times 0.932$$

For P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{CysC}} = 133 \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-1.328} \times 0.996^{\text{age}} \times 0.932$$

Male:

For P-Cystatin C ≤ 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{CysC}} = 133 \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-0.499} \times 0.996^{\text{age}}$$

For P-Cystatin C > 0.8 mg/L:

$$\text{eGFR (2012 CKD-EPI)}_{\text{CysC}} = 133 \times \left(\frac{\text{P-CysC}}{0.8} \right)^{-1.328} \times 0.996^{\text{age}}$$

History

January 2023 Responsible person changed

May 2023 Formulas for 2021 equations added
