

ESTIMATION OF GLOMERULAR FILTRATION RATE

Glomerular filtration rate (GFR) can be estimated using the Cockcroft and Gault equation¹:

$$\text{GFR} = \text{Creatinine Clearance (CCr)} * 1.73 / \text{Body Surface Area (BSA)}$$

(expressed in ml/min/1.73m²)

where:

$$\text{CCr} = \text{male: } 1.23 * \text{weight} * (140 - \text{age}) / \text{creatinine}$$

$$\text{female: } 1.04 * \text{weight} * (140 - \text{age}) / \text{creatinine}$$

$$\text{BSA}^2 = 0.007184 * \text{height}^{0.725} * \text{weight}^{0.425}$$

Units: height in centimetres, weight in kilograms, age in years, creatinine in $\mu\text{mol/L}$

Note: most laboratories in New Zealand report creatinine in mmol/L – to convert multiply by 1000

References

1. Cockcroft DW and Gault MH. *Prediction of creatinine clearance from serum creatinine*. Nephron, 1976. 16: 31-41.
2. DuBois D and DuBois EF. *A formula to estimate the approximate surface area if height and weight are known*. Arch Intern Med, 1916. 17: 863-871.