



NCCN Chemotherapy Order Templates (NCCN Templates®) Appendix A

Appendix A: Chemotherapy Calculations

Absolute Neutrophil Count (ANC)¹

$$\text{ANC (cells/mm}^3\text{)} = [(\text{segs (\%)} + \text{bands (\%)}) \div 100] \times \text{white blood cell count (cells/mm}^3\text{)}$$

Adjusted Ideal Body Weight (AIBW)²⁻⁵

$$\text{AIBW (kg)} = \text{Ideal Body Weight (IBW [kg])} + 0.4 \times (\text{Actual weight [kg]} - \text{IBW})$$

$$\text{Female IBW (kg)} = 45.5 \text{ kg} + 2.3 \text{ kg for each inch over 5 feet}$$

$$\text{Male IBW (kg)} = 50 \text{ kg} + 2.3 \text{ kg for each inch over 5 feet}$$

Body Surface Area (BSA)

Author	BSA formula
Mosteller ⁶	$\text{BSA (m}^2\text{)} = \sqrt{\frac{\text{height (cm)} \times \text{weight (kg)}}{3600}} \quad \text{OR} \quad \text{BSA (m}^2\text{)} = \sqrt{\frac{\text{height (in)} \times \text{weight (lbs)}}{3131}}$
DuBois and DuBois ⁷	$\text{BSA (m}^2\text{)} = \text{Weight (kg)}^{0.425} \times \text{Height (cm)}^{0.725} \times 0.007184$

Child-Pugh Score^{8,9}

Refer to the table on page HCC-C in the [NCCN Clinical Practice Guidelines in Oncology \(NCCN Guidelines®\) for Hepatobiliary Cancers](#)

Cockcroft-Gault Equation¹⁰

$$\text{CrCl (male; mL/min)} = \frac{(140 - \text{age}) \times (\text{weight in kg})}{72 \times \text{serum creatinine (mg/dL)}}$$

$$\text{CrCl (female; mL/min)} = 0.85 \times \text{CrCl (male)}$$

Corrected Calcium^{11,12}

$$\text{Corrected Calcium (mg/dL)} = \text{Serum Calcium} + 0.8 \times (\text{Normal Albumin} - \text{Patient Albumin})$$



REFERENCES

1. Al-Gwaiz LA, Babay HH. The diagnostic value of absolute neutrophil count, band count and morphologic changes of neutrophils in predicting bacterial infections. *Med Princ Pract*. 2007;16(5):344–7.
2. Devine BJ. Gentamicin therapy. *Drug Intell Clin Pharm*. 1974;8:650.
3. Hanley MJ, Abernethy DR, Greenblatt DJ. Effects of obesity on the pharmacokinetics of drugs in humans. *Clin Pharmacokinet*. 2010;49:71.
4. Erstad BL. Dosing of medications in morbidly obese patients in the intensive care unit setting. *Intensive Care Med*. 2004;30:18.
5. Shank BR, Zimmerman DE. Demystifying Drug Dosing in Obese Patients. American Society of Health-System Pharmacists, Bethesda, MD 2016.
6. Mosteller RD. Simplified calculation of body-surface area. *N Engl J Med*. 1987;317(17):1098.
7. DuBois D, DuBois EF. A Formula to Estimate the Approximate Surface Area if Height and Weight Be Known. *Arch Int Med*. 1916;17:863-71.
8. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Hepatobiliary Cancers. Available at: https://www.nccn.org/professionals/physician_gls/pdf/hepatobiliary.pdf
9. Pugh R, Murray-Lyon I, Dawson J, et al: Transection of the oesophagus for bleeding oesophageal varices. *Br J of Surg*. 1973;60:646-649.
10. Cockcroft DW, Gault MH. Prediction of creatinine clearance from serum creatinine. *Nephron*. 1976;16(1):31-41.
11. Figge J, Jabor A, Kazda A, Fencel V. Anion gap and hypoalbuminemia. *Crit Care Med*. 1998;26:1807.
12. Jassam N, Gopaul S, McShane P, et al. Calcium adjustment equations in neonates and children. *Ann Clin Biochem*. 2012;49:352.