

Gentamicin Dosing Algorithm

Step 1: Select Patient Appropriately

For *empiric* therapy (pathogen not known), use Amikacin instead of Gentamicin in patients with:

- A history of gentamicin resistant gram negative pathogens (review previous microbiology test results).
- Sepsis requiring ICU review/admission, or septic shock.
- Sepsis when using concomitant ciprofloxacin in patients with IgE-mediated/anaphylaxis/severe penicillin allergy (due to risk of co-resistance)

Cautions : Age ≥ 65 , renal impairment (CrCl < 80 ml/min), obesity (use obese dosing weight), concomitant nephrotoxins, volume depletion, auditory and vestibular disorders.

Contraindications: Myasthenia gravis

Step 2: Prescribe Dose

Max Gentamicin Daily Dose = 480mg

Obese Dosing Weight should be used in CrCl and dose calculations if BMI > 30 kg/m² or Actual Body Weight is 20% more than Ideal Body Weight.

In oliguria (urine output < 500 mL/day), dose as per CrCl < 10 mL/min.

[\(Please see formulae for BMI and weight calculations \)](#)

(Please see [MdCalc Creatinine Clearance Calculator](#))

Creatinine Clearance	Dose
> 50 ml/min	5 mg/kg q24h (max 480mg)
10-50 ml/min	3 mg/kg q24h
< 10 ml/min	1.5 mg/kg stat and redose when level < 1 mcg/ml.
Dialysis	Seek specialist advice

Step 3. Order Trough Level

- Order trough level 16-24 hours after first dose
- Ensure request form and serum sample are labelled with date and time of the last dose AND date and time level was taken
- Monitor renal function

Step 4. Check and Interpret Trough Level

Trough level	Action
< 1mcg/ml	Review need for further dose. Administer same dose again if ongoing aminoglycoside treatment indicated and renal function is stable.
≥1mcg/ml (<i>high</i>)	Check the dose and time the sample was taken. Was it taken at the correct time? If the trough level >1micrograms/mL but < 2micrograms/mL and treatment is still indicated, then consider holding the next dose until level <1micrograms/mL and then reduce dose by 1mg/kg. Discuss with pharmacy if required. If the trough is >2micrograms/mL and treatment is still indicated, discuss with pharmacy.