

# Extended Interval (Once Daily) Gentamicin Dosing



## 1. Initial Dose

Calculate the creatinine clearance using **lean body weight** (or actual body weight if <LBW), then use the table to determine the first dose.

Calculated CrCl (mL/min)	Initial dose (mg/kg)	Time of second blood sample (h)
>65	5-7	6 - 14
55 - 65	5-6	8 - 16
45 - 54	5	10 - 18
31 - 44	4	12 - 20
20 - 30	3	14 - 22
<20	Consider using another antibiotic	

Lean Body Weight



LBW (male) = 50kg + 0.9kg for each cm>150cm in height  
 LBW (female) = 45.5kg + 0.9kg for each cm>150cm in height

Cockcroft-Gault Equation



CrCl (mL/min) =  $F \times \frac{(140 - \text{age}) \times \text{body weight (kg)}}{\text{serum creatinine (mmol/L)} \times 1000}$

(F = 1.2 for males and 1 for females)

## 2. Monitoring

**Do not take levels if:** It is only a stat dose **OR** the patient has normal renal function AND is only going to receive one or two doses (eg post-operatively as prophylactic therapy).

**Otherwise levels should be done after the first dose**

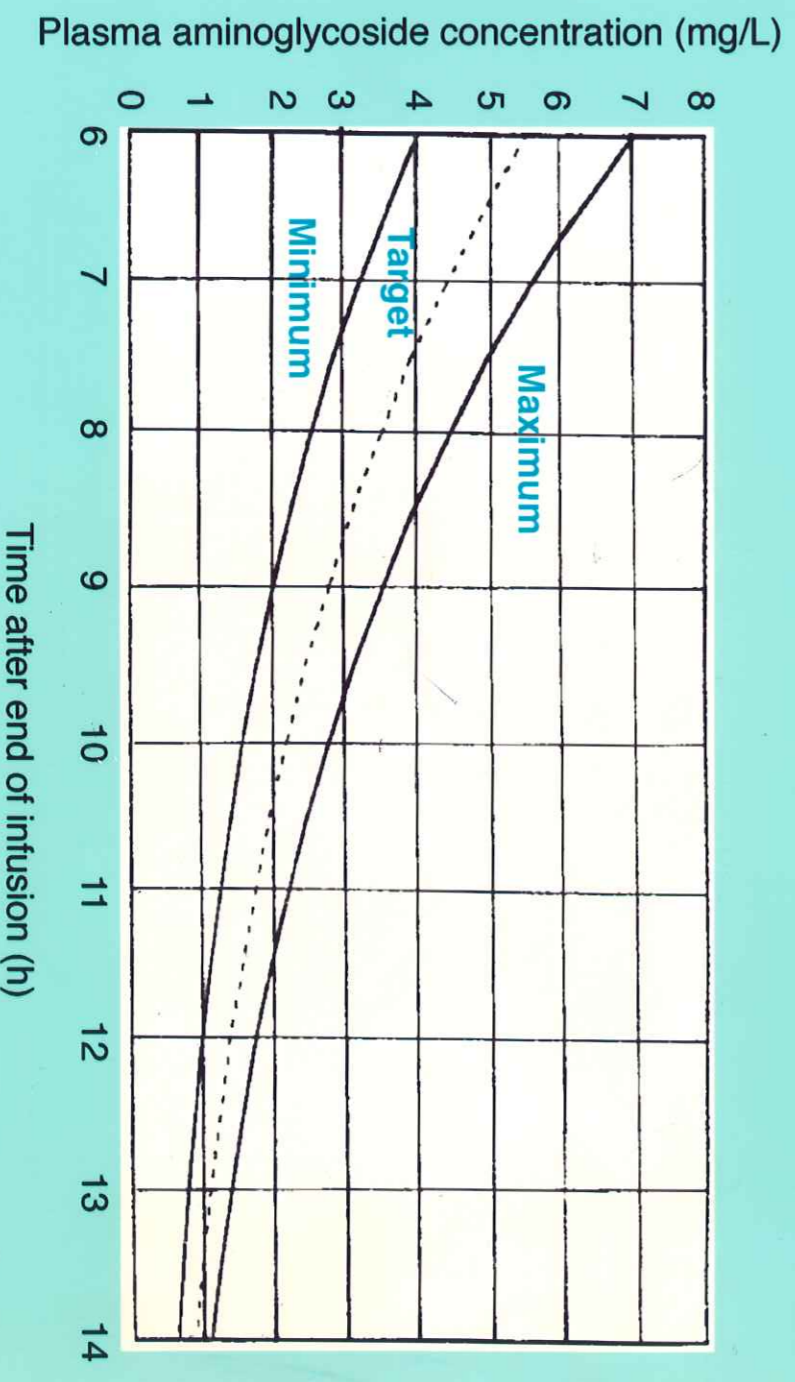
- < 65 years and with normal renal function (65 mL/min)
  - a single blood level 6-14 hours post dose will be sufficient
- > 65 years and/or with renal impairment
  - Two blood levels are recommended to make an accurate estimation of area under the curve. The **first blood sample** needs to be taken **30 mins after the end of the 30 min infusion**, the **second sample** should be taken at the intervals indicated in the table above
  - Subsequent blood levels** should be taken after a change in dose, if clinical condition changes (eg renal function, volume status). Otherwise levels can be done every 72 hours.

## 3. Dose Adjustment

**Impaired renal function:** Requires extended dose intervals and area under the curve monitoring. Dose adjustments can be made with the Abbott Pharmacokinetic System based in pharmacy and can be accessed via your ward pharmacist. This information will be available in time for the next dose.

**Normal renal function:** the dose can be adjusted according to the Gentamicin Nomogram. If the level falls within the lines of the nomogram then no adjustment is necessary. If the level falls outside the lines then adjust the dose proportionally.

New dose (mg) =  $\frac{\text{required level}}{\text{actual level}} \times \text{current dose (mg)}$



**NB:** Interpretation of levels is critically dependent on **accurate** time of dose administration and specimen collection.

For further advice contact: Ward Pharmacist, Drug Information Service ext 5508, Clinical Pharmacology ext 2694 or Clinical Microbiology ext. 2389  
 Approved by: Drugs and Therapeutics Committee, Infectious Diseases, Clinical Microbiology, Clinical Pharmacology and Pharmacy Department.  
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