



### Gentamicin Dosing Guidelines

This guide uses a constant dose of gentamicin of 7mg/kg of ideal body weight.

A serum level of gentamicin is measured 6-14 hours after the **START** of the first dose to determine the dosage interval

#### EXCLUSIONS

Do **NOT** use this dosing regime for: pregnant women, children <16 years, surgical prophylaxis, ANY patient who has ascites, a limb amputation, cystic fibrosis, endocarditis, major burns, renal transplant, renal impairment - Creatinine clearance <40ml/min, suspected/confirmed AKI

**EXCEPT IF RECOMMENDED BY A CONSULTANT MICROBIOLOGIST**

#### Dose calculation

Obtain information on:

- Sex
- Height
- Weight (kg)
- Serum creatinine (micromol/L) to check renal function (see over page for calculation).
- If creatinine clearance < 40mL/min seek advice from pharmacy.
- From the tables below use the patients height to give an estimate of ideal body weight and then select the corresponding dose of gentamicin.
- If the actual body weight (ABW) is less than the ideal body weight (IBW) (ie underweight) select the dose corresponding to actual body weight.

♂ ADULT MALES (>16 yrs)			
Height	IBW (kg)	Gentamicin dose (mg)	ABW (use if less than IBW) (kg)
6' 3" (1.9m) +	84.5	560	78 to 82
6' 2" (1.88m)	82.2		
6' 1" (1.85m)	79.9		
6' (1.82m)	77.6	520	72 to 77
5' 11" (1.8m)	75.3		
5' 10" (1.78m)	73		
5' 9" (1.75m)	70.7	480	66 to 71
5' 8" (1.72m)	68.4		
5' 7" (1.7m)	66.1		
5' 6" (1.67m)	63.8	440	60 to 65
5' 5" (1.65m)	61.5		
5' 4" (1.62m)	59.2		
5' 3" (1.6m)	56.9	400	55 to 59
5' 2" (1.57m)	54.6		
5' 1" (1.55m)	52.3		
5' (1.52m) or under	50	360	49 to 54

♀ ADULT FEMALES (> 16 yrs)			
Height	IBW (kg)	Gentamicin dose (mg)	ABW (use if less than IBW) (kg)
6' 3" (1.9m) +	79.5	560	78 to 82
6' 2" (1.88m)	77.2	520	72 to 77
6' 1" (1.85m)	74.9		
6' (1.82m)	72.6		
5' 11" (1.8m)	70.3	480	66 to 71
5' 10" (1.78m)	68		
5' 9" (1.75m)	65.7		
5' 8" (1.72m)	63.4	440	60 to 65
5' 7" (1.7m)	61.1		
5' 6" (1.67m)	58.8		
5' 5" (1.65m)	56.5	400	55 to 59
5' 4" (1.62m)	54.2		
5' 3" (1.6m)	51.9		
5' 2" (1.57m)	49.6	360	49 to 54
5' 1" (1.55m)	47.3		
5' (1.52m) or under	45		

#### Prescribing initial dose using JAC

- Select the Treatment Protocol called **GENTAMICIN IV - Initial Dose Items**
- **Caution!** Two of these items require amendment before the protocol is added
- Click on the protocol line called **GENTAMICIN 80mg in 2ml injection**  
Enter the **dose**. Click the '**Modify Order Line**' button.
- Click on the protocol line called **GENTAMICIN serum level required 6-14hrs after IV start**.  
Change the '**Start Medication on**' to **6 hours** after the time of the initial Gentamicin STAT dose.  
Click the '**Modify Order Line**' button.

For more information follow [this link](http://intranet/care-groups/diagnostic-pharmacy-care-group/JAC.aspx) for the Electronic Prescribing User Guides

#### Prescribing initial dose on drug card

- Prescribe in STAT section.
- Prescribe gentamicin level due 6 - 14 hours after gentamicin started.

#### Monitoring

Gentamicin level samples should be taken between 6 and 14 hours **AFTER START of infusion**.

All ordering of gentamicin levels should be done on ICE. Please ensure the date and time of last dose administered and the date and time when sample was taken are completed in mandatory fields within ICE.

Note - It is not usually necessary for gentamicin levels to be reported outside normal working hours, provided levels are available before the next dose is due. Samples which require processing out-of-hours **MUST** be discussed with a microbiologist.

### Maintenance dose

Base the dosing frequency on the nomogram/micro advice.

### Prescribing maintenance doses using JAC

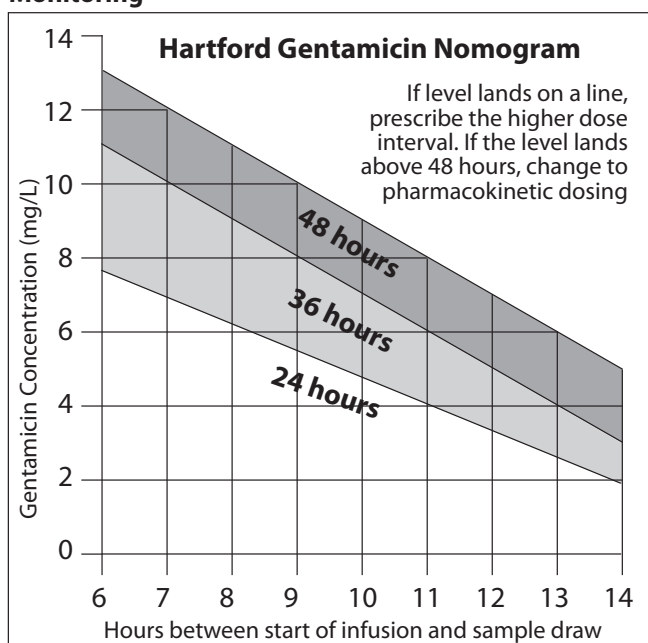
When you prescribe the maintenance doses you **MUST** identify the start time of the previous gentamicin by looking on admin chart. Click on the solid green rectangle when it was last given. This will display the time administered.

- Prescribe 'gentamicin 80mg in 2ml injection'.
- Select 'IV infusion'.
- Enter dose
- Depending on serum level, select 24 hours, 36 hours or 48 hours frequency.
- You **must** then change the start date and time of the maintenance dose to correspond with 24 / 36 / 48 hours after the loading dose was given.
- Do not prescribe maintenance doses as STAT doses.

### Prescribing Maintenance dose on using admin card.

- Prescribe in regular medication section.
- Ensure the start date and time are 24 / 36 / 48 hours after the loading was given depending on the serum level.

### Monitoring



- Document on the ICE the EXACT time and date the infusion was set up and the EXACT time and date the sample was taken.
- If the level is off the 48 hour line then STOP the treatment. If gentamicin is to be continued take random samples, but do not give any more gentamicin until the level falls below 1mg/L (discuss with microbiology if required).
- Check U & E's and creatinine daily to monitor renal function.
- Use a gold top bottle for blood sample.
- For information about how often to repeat levels, please refer to the results comments on the laboratory report on ICE.

Dosage Interval	Repeat levels every
24 hours	3 days
36 hours	3 days
48 hours	2 days

Gentamicin can be given in 50ml sodium chloride 0.9%, if the patient is fluid restricted.

If creatinine starts to rise from baseline during treatment, recheck level 6 - 14 hours after the next dose to ensure the dosing interval is still appropriate.

### Calculation for Creatinine clearance

From the table above, use the patients height to estimate ideal body weight. Use this weight (or actual weight if less than IBW) for calculating Creatinine clearance.

**Male:**  $\text{Creat Cl} = 1.23 \times (140 - \text{age}) \times \frac{\text{wt (kg)}}{\text{serum creatinine (micromol/l)}}$

**Female:**  $\text{Creat Cl} = 1.04 \times (140 - \text{age}) \times \frac{\text{wt (kg)}}{\text{serum creatinine (micromol/l)}}$

The full guide for prescribing gentamicin on JAC is available via the link:  
<http://intranet/care-groups/diagnostic-pharmacy-care-group/JAC.aspx>