Title	**EXTENDED INTERVAL GENTAMICIN REGIMEN** **For children over 1 month**
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EXTENDED INTERVAL GENTAMICIN REGIMEN

For children over 1 month

This regimen should be used for gentamicin treatment unless the child has renal impairment, endocarditis, cystic fibrosis, burns, in pregnancy or meningitis (see conventional interval gentamicin regimen for these patients).

Actions and uses:
An aminoglycoside antibiotic with a broad spectrum of activity against some Gram-positive bacteria and Gram-negative bacteria (*Escherichia coli,Haemophilus influenzae*, *Pseudomonas aeruginosa)*. Generally first line aminoglycoside, except in Cystic Fibrosis.

Contraindications: Myasthenia gravis, hypersensitivity to gentamicin or any of the excipients

Dose:

AGE	DOSE	FREQUENCY	COMMENTS
Infants and children 1 month-18 years	7mg/kg (Max. 450mg) Based on ideal body weight*	24 hourly	**Do not use this dose in severe renal impairment, endocarditis, pregnancy, cystic fibrosis, meningitis or burns patients**. **Initial starting dose.** Adjust dose or interval according to Therapeutic Drug Monitoring (TDM) information below.

* For obese children use ideal body weight (IBW). Extrapolate IBW from the height centiles on the growth chart (available on ward 15).

- Renal impairment: AVOID extended interval dosing if creatinine clearance <20ml/min/1.73m^2. Use conventional dosing and seek pharmacy advice.
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Reconstitution Guidelines:
Available as an already reconstituted solution in two strengths – 20mg/2ml (10mg/ml) or 80mg/2ml (40mg/ml) per vial.

Compatibilities:
Glucose 5%, sodium chloride 0.9%.

Incompatabilities:
Avoid mixing with any drug or solution unless confirmed with pharmacy.

Administration:
IV infusion over 30 minutes further diluted in sodium chloride 0.9% or glucose 5% to appropriate volume.

Examples:

- For an 8kg infant a 56mg dose would be 1.4ml of **40mg/ml** solution diluted to 10ml and administered over 30 minutes
- For an obese 7 year old boy weight 32kg (98th centile), height 119cm (25th centile), correct dose to expected centile for height (25th centile) for a dosing body weight of 21kg. The 7mg/kg dose of 147mg would be rounded to 148mg, 3.7ml of 40mg/ml solution diluted to 10 or 20 ml and administered over 30 minutes.

Cautions:

- Side effects of ototoxicity and nephrotoxicity which may be compounded by other agents e.g. amphotericin, ciclosporin, cisplatin, furosemide and vancomycin -monitor closely.
- Enhances the effects of non-depolarising muscle relaxants.
- Ensure adequate flushing if patient is also prescribed a penicillin or cephalosporin.
- Use with care in conditions characterised by muscle weakness.

Therapeutic Drug Monitoring:

- Monitor blood levels after 1st dose at 18-24 hours after the start of the infusion.
- In seriously ill children, neutropenic sepsis patients and patients on Haemofiltration additionally measure the peak 1 hour after the end of the infusion for the first dose.
- Await levels before giving second dose
- If levels satisfactory, repeat sampling after each dose for courses up to 3 days. For longer courses, further samples should be taken every 2 days (or sooner if clinically indicated).
- If levels unsatisfactory seek advice from Pharmacy or Consultant Microbiologist. on dose or interval adjustment and resample after the next dose.
- Therapeutic range:
  Trough 18-24 hour < 1mg/L
  Peak 1 hour >16 mg/L (only if required)