ERYthromycin ethylsuccinate (Oral)  
Newborn use only

### Alert
Risk of infantile hypertrophic pyloric stenosis is significantly higher in neonates treated with erythromycin.16

### Indication
1. Pertussis – post-exposure prophylaxis and treatment (azithromycin is recommended).
2. Chlamydial conjunctivitis and pneumonia
3. Treatment of other susceptible bacterial infections in penicillin-allergic infants
4. Prokinetic agent for gastrointestinal dysmotility (routine use not recommended)

### Action
Inhibits protein synthesis by attaching to the 50S subunit of the bacterial ribosome in susceptible organisms.
Motilin receptor agonist.

### Drug Type
Macrolide antibiotic.

### Trade Name
E-Mycin Syrup, EES Granules

### Presentation
200 mg/5 mL suspension (granules for reconstitution), 100 mL
400 mg/5 mL suspension (granules for reconstitution), 100 mL

### Dosage / Interval
**Pertussis – post-exposure prophylaxis and treatment** (azithromycin is recommended. Use erythromycin only if azithromycin is not available).

- 10 mg/kg/dose PO 6-hourly for 5 to 14 days; 14 days preferred to avoid risk of relapse.

**Chlamydia infection (conjunctivitis, pneumonia)**

- 12.5 mg/kg/dose PO 6-hourly for 14 days.2

**Non-chlamydial, susceptible bacterial infection in penicillin-allergic infants**

- Weight <1 kg:
  - Postnatal age ≤14 days: 10 mg/kg/dose 12-hourly
  - Postnatal age >14 days: 10 mg/kg/dose 8-hourly

- Weight ≥1 kg:
  - Postnatal age ≤7 days: 10 mg/kg/dose 12-hourly
  - Postnatal age >7 days: 10 mg/kg/dose 8-hourly

**Prokinetic dose for gastrointestinal dysmotility** (inconsistent evidence for its efficacy and safety and routine use not recommended)

- **Low-dose regimens**: 2.5 mg/kg/dose 6-hourly up to 10 days.10 or 5 mg/kg/dose 8-hourly (7–14 days)11
- **High dose regimens**: Doses up to 10–12.5 mg/kg/dose 6-hourly for 7–14 days have been used.12-14
- **Post-op intestinal atresia**: 3 mg/kg/dose 6-hourly19

### Route
Oral

### Preparation/Dilution
Add 77 mL of sterile water to granules in small volumes and shake vigorously until no lumps are visible. Suspension expires 10 days after reconstitution. Write expiry date on bottle.

### Administration
Oral, preferably with feeds.15
For prokinetic effect, often administered 30 minutes prior to feed.

### Monitoring
Liver function.

### Contraindications
Hypersensitivity to erythromycin or any component of the product.
Concomitant therapy with pimozide, cisapride, ergotamine or dihydroergotamine, terfenadine, astemizole, lovastatin or simvastatin.

### Precautions
Use with caution in hepatic impairment.
QT interval prolongation.
Uncorrected hypokalaemia, hypomagnesemia.
Class 1A and Class 3 antiarrhythmic agents.

### Drug Interactions
QT interval prolonging drugs: Cisapride, fluconazole, octreotide, cotrimoxazole, verapamil, Class 1A and Class 3 antiarrhythmic agents.
Drugs that may increase toxicity of erythromycin: Ketoconazole.
Drugs that may reduce erythromycin plasma concentration: Carbamazepine, theophylline.
Erythromycin may increase plasma concentrations of following drugs: Carbamazepine, digoxin, theophylline, warfarin, midazolam.

**Adverse Reactions**

Infantile hypertrophic pyloric stenosis (IHPS): Risk of developing IHPS following erythromycin exposure is 0.4 % (95% CI 0.3–0.5%) in those receiving erythromycin at any time and 2.6 % (95% CI 1.5–4.2%) in those receiving erythromycin in the first 14 days.\(^{16}\)

**COMMON:** Nausea, vomiting and abdominal pain. The incidence of GI reactions may vary with the erythromycin salt preparation and/or dosing regimen. Diarrhoea may occur due to increased gastrointestinal motility caused by erythromycin.

**LESS FREQUENT OR RARE:** Pancreatitis, pyloric stenosis, ileus, pseudomembranous colitis, sensorineural hearing loss, cholestasis, acute hepatitis, hepatic failure, agranulocytosis, thrombocytopenia, haemolytic anaemia, hypothermia, hypovolaemic shock and hypotension, leukocytoclastic vasculitis, acute respiratory distress following an allergic reaction, Schönlein-Henoch syndrome, candidal esophagitis, gingival hyperplasia, contact dermatitis, fixed drug eruptions, toxic pustuloderma, toxic epidermal necrolysis, interstitial nephritis, glomerulonephritis.

**Compatibility**

Not applicable

**Incompatibility**

Not applicable

**Stability**

After reconstituting granules, refrigerate and use within 10 days.

**Storage**

Store granules below 25°C. Reconstituted suspension should be refrigerated at 2–8°C and used within 10 days; do not freeze.

**Special Comments**

Readily absorbed.

Hepatic metabolism by cytochrome P450 enzymes.

**Evidence summary**

Refer to full version.

**References**

Refer to full version.

---

**Authors Contribution**

<table>
<thead>
<tr>
<th>Original author/s</th>
<th>Chris Wake, Srinivas Bolisetty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision author/s</td>
<td>Tony Lai, Brendan McMullan</td>
</tr>
<tr>
<td>Expert review</td>
<td>David Osborn</td>
</tr>
<tr>
<td>Evidence Review</td>
<td>Eszter Jozsa, Robyn Richards</td>
</tr>
<tr>
<td>Nursing Review</td>
<td>Jing Xiao, Carmen Burman, Cindy Chen</td>
</tr>
<tr>
<td>Pharmacy Review</td>
<td>Nilkant Phad, Himanshu Popat, Michael Hewson, Jessica Ryan, Joanne Patel, Roland Broadbent</td>
</tr>
<tr>
<td>NMF Group contributors</td>
<td>Ian Whyte</td>
</tr>
<tr>
<td>Final content and editing review of the original</td>
<td>Cindy Chen, Ian Callander</td>
</tr>
<tr>
<td>Electronic version</td>
<td>Srinivas Bolisetty</td>
</tr>
<tr>
<td>Facilitator</td>
<td>Srinivas Bolisetty</td>
</tr>
</tbody>
</table>