



# The New Zealand Formulary for Children

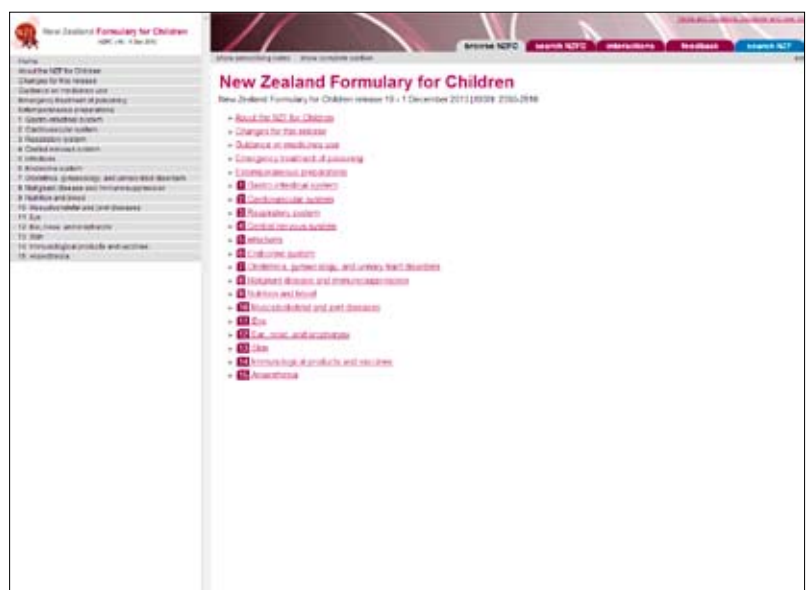
## The New Zealand Formulary for children is now available

In November 2013, the New Zealand Formulary launched the NZFC – a New Zealand adaptation of the British National Formulary for Children.

The NZFC is available from: [www.nzfchildren.org.nz](http://www.nzfchildren.org.nz) or click the pink tab on the NZF home page.

## The NZFC

- Easily navigated, with searchable medicines information specifically for children
- Indications and doses reflect current New Zealand practice, with expert advice from New Zealand Paediatricians
- Adapted from the British National Formulary for Children, incorporating PHARMAC and Medsafe information
- Additional information from reputable sources on drug interactions, drugs in pregnancy, breastfeeding
- Updated monthly and freely available to all healthcare professionals within New Zealand
- Feedback welcomed via feedback tab



## Prescribing notes for children

- Each section begins with prescribing notes followed by relevant drug monographs and preparations. Drugs are classified in a section according to their pharmacology and therapeutic use. Information can be found using the search NZFC tab.
- Prescribing notes are divided into 15 chapters, each of which is related to a particular system of the body or to an aspect of medical care

**5.1.5 Macrolides**

These medicines have an antibiotic spectrum that is similar but not identical to that of penicillins. They are less an alternative in penicillin-allergic patients. They are active against many gram-positive bacteria, but are not active or are less active against the macrolides.

Indications for the macrolides include campylobacter infections, respiratory infections (including pneumonia, whooping cough, Legionella, chlamydia, and Mycoplasma infections) and skin infections.

**Erythromycin** has an antibiogram spectrum that is similar but not identical to that of penicillin. It is thus an alternative in penicillin-allergic patients. It has poor activity against Haemophilus influenzae.

**Erythromycin** is a macrolide with slightly less activity than erythromycin against Gram-positive bacteria but enhanced activity against some Gram-negative organisms, including H. influenzae. Plasma concentrations are very low but tissue concentrations are much higher. It has a long tissue half-life and once daily dosage is recommended. Azithromycin is also used in the treatment of pertussis.

**Clarithromycin** is an erythromycin derivative with slightly greater activity than the parent compound. Tissue concentrations are higher than with erythromycin. It is given twice daily.

**Azithromycin** is a macrolide with slightly less activity than erythromycin against Gram-positive bacteria but enhanced activity against some Gram-negative organisms, including H. influenzae. Plasma concentrations are very low but tissue concentrations are much higher. It has a long tissue half-life and once daily dosage is recommended. Azithromycin is also used in the treatment of pertussis.

**Cautions**  
Macrolides should be used with caution in children with a predisposition to QT interval prolongation (including electrolyte disturbances) and concurrent use of drugs that prolong the QT interval.

**Adverse effects**  
Nausea, vomiting, abdominal discomfort, and diarrhoea are the most common adverse effects of the macrolides, but they are mild and less frequent with azithromycin and clarithromycin than with erythromycin. Hypokalaemia (including idiopathic hypokalaemia) and tachycardia are frequent. Other adverse effects reported rarely in any form include conjunctivitis, arthritis, associated colitis, QT interval prolongation, arrhythmias, generally reversible hearing loss (sometimes with tinnitus) after large doses, Stevens-Johnson syndrome, and drug-induced neutropenia. Nervousness (often may cause loss of consciousness) has been reported.

**Interactions**  
+ azithromycin  
+ clarithromycin  
+ erythromycin  
+ rifabutin

## Monographs & more

- Drug monographs are summaries of the important practical information about individual drugs
- More information can be revealed by clicking or hovering the cursor over some sections of the text, e.g. interactions, pregnancy and breast feeding
- Clicking on the + sign at the bottom of the drug monograph shows products available, funding information, links to medicines data sheets and consumer medicines information

**azithromycin**

**Cautions** children with a predisposition to QT interval prolongation (including electrolyte disturbances, concurrent use of drugs that prolong the QT interval), neonates under 2 weeks (risk of hypotriglyceridaemia), avoid in acute porphyria (caution 3.6.2).

**Interactions** See also azithromycin; DNF summary azithromycin.

**Hepatic impairment** caution in severe liver disease, consider dose reduction.

**Renal impairment** use with caution if estimated glomerular filtration rate less than 30 mL/minute/1.73 m<sup>2</sup> important (see [Pharmacology in this product](#)) in children.

**Pregnancy** **3** manufacturers advise use only if adequate alternatives not available.

**Breast feeding** **3** caution; may cause diarrhoea in infant's stools.

**Adverse effects** nausea, vomiting, abdominal discomfort, diarrhoea, anorexia, dyspepsia, flatulence, dysphagia, headache, drowsiness, conjunctivitis, otitis media, sinusitis in older and severe skin eruptions (especially including toxic epidermal necrolysis, rash, hives) or very itchy complexion, conjunctivitis, arthritis associated colitis, QT interval prolongation, arrhythmias, sprague, myositis, agranulocytosis, anemias, aplastic anaemia, thrombocytopenia, haemolytic anaemia, interstitial nephritis, acute renal failure, hearing loss (sometimes with tinnitus, usually reversible), Stevens-Johnson syndrome, toxic epidermal necrolysis, photosensitivity, tooth and tongue discoloration.

**Approved status** approved for use in children (age range not specified by manufacturer).

**Indications and dose**

**Chronic Pseudomonas aeruginosa infection in cystic fibrosis**

**Child 6-18 years**  
 Body-weight 20-40 kg 250 mg 2 times a week  
 Body-weight over 40 kg 500 mg 2 times a week

**Uncomplicated genital chlamydial infections and non-gonococcal urethritis**

**Child**  
 Body-weight under 40 kg 200 mg as a single dose  
 Body-weight over 40 kg 1 g as a single dose

**Treatment of pertussis; other susceptible infections**

**Child**  
 Body-weight under 40 kg 10 mg/kg on day 1, then 5 mg/kg on days 2-5  
 Body-weight over 40 kg 500 mg on day 1, then 250 mg on days 2-5

**azithromycin**  
 oral liquid: possible for  
 200 mg/5 mL (full safety prescription)  
 tablet  
 250 mg (full safety prescription)  
 500 mg (full safety prescription)

## Interactions

- Interactions in the NZF and NZFC are provided by Stockley's interaction alerts which are derived from the full Stockley's drug interactions database. This gives health care professionals a quick way to check for potential interactions and management advice in a clinical setting.

**Interactions**

Drug 1 (system)	Drug 2 (system)	Interaction	Action	Evidence
erythromycin (systemic)	clarithromycin (systemic)	Clarithromycin appears to have the concentrations of erythromycin which is expected to reduce its antibiotic effects.	Consider an alternative antibiotic if possible. Note that clarithromycin should be avoided in patients with a history of colitis.	Severe Formal only
erythromycin (systemic)	clarithromycin (systemic)	Erythromycin raises clarithromycin levels to as much as fivefold, which has resulted in toxicity in severe cases.	Avoid concurrent use unless clarithromycin levels can be monitored. Symptoms commonly begin within 10 to 72 hours of starting erythromycin. In most cases toxicity resolves after 3 to 5 days of stopping the erythromycin.	Severe Clinical only
paracetamol (systemic)	clarithromycin (systemic)	The metabolism of paracetamol is increased in patients being erythromycin or clarithromycin, such as clarithromycin.	Consider an interaction as a possible cause of any reduction in paracetamol efficacy.	Moderate Formal only
paracetamol (systemic)	erythromycin (systemic)	Erythromycin accelerates gastric emptying and might increase paracetamol absorption, but any effect is small and unlikely to be clinically relevant.	No action needed. Any interaction is likely to be beneficial, particularly in patients with impaired gastric emptying.	Subling Formal only
erythromycin (systemic)	clarithromycin (systemic)	The manufacturers of clarithromycin state that erythromycin may inhibit the metabolism of clarithromycin by CYP3A4, including the rise of clarithromycin plasma levels, but all evidence is conflicting and inconclusive.	The clinical relevance of this prediction is unclear as the main cause for clarithromycin metabolism is CYP3A4, and there is no known, clear, the possibility of an interaction in renal should any increase in clarithromycin plasma levels, given its relatively low toxicity.	Mild/Moderate Formal only

Get started today at: [www.nzfchildren.org.nz](http://www.nzfchildren.org.nz)