



## MONOGRAPH

### Doxycycline Monograph - Paediatric

Scope (Staff):	Medical, Pharmacy, Nursing
Scope (Area):	All Clinical Areas

#### Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [DISCLAIMER](#)

#### QUICKLINKS

<a href="#">Dosage/Dosage Adjustments</a>	<a href="#">Administration</a>	<a href="#">Compatibility</a>	<a href="#">Monitoring</a>
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#### DRUG CLASS

Tetracycline antibiotic.<sup>(1, 2)</sup>

#### INDICATIONS AND RESTRICTIONS

Intravenous (IV) doxycycline for lymphatic malformation sclerotherapy \*\*Special access scheme product\*\*. [SAS application\(s\)](#) must be completed in accordance to the [TGA regulations](#). Not covered in this monograph.

##### Oral: Unrestricted (green) antibiotic

This is not a restricted agent. Follow standard ChAMP guidelines where appropriate.

##### Indications:

Doxycycline is a broad-spectrum antibiotic used in the treatment of community acquired pneumonia, complicated staphylococcal infections, pelvic inflammatory disease, acne vulgaris and in malaria prophylaxis.<sup>(2, 3)</sup>

**CONTRAINDICATIONS**

- Hypersensitivity to doxycycline, other tetracyclines or any component of the formulation.<sup>(1, 2, 4, 5)</sup>
- Doxycycline is contraindicated for use in patients currently taking oral retinoids (isotretinoin or acitretin) due to the increased risk of intracranial hypertension.<sup>(4, 6)</sup>

**PRECAUTIONS**

- Doxycycline has historically been associated with tooth discolouration, enamel hypoplasia or bone disposition and was not recommended for use in those less than 8 years of age. This has not been demonstrated following short-term use and doxycycline is unlikely to stain teeth in children < 8 years when used short term (< 21 days). It should be used when it is the drug of choice regardless of the patient's age.<sup>(1-4)</sup>
- Patients should be instructed to avoid sun exposure whilst undergoing treatment with doxycycline. Patients should wear protective clothing and use sunscreen during any sun exposure.<sup>(1, 3, 4, 7)</sup> Photosensitivity reactions can occur within hours of commencing therapy following sun exposure.<sup>(1)</sup>
- Doxycycline may cause oesophagitis from partially swallowed tablets or capsules.<sup>(1-5)</sup>

**FORMULATIONS**

Listed below are products available at PCH, other formulations may be available, check with pharmacy if required:

- 50 mg and 100 mg tablet
- 100 mg/5mL vial for injection (not covered in this monograph) – SAS and Formulary One restrictions apply

Imprest location: [Formulary One](#)

**DOSAGE & DOSAGE ADJUSTMENTS**

**Neonates:** [Refer to Neonatal Medication Protocols](#)

- Not routinely used in neonates

**Oral:**

- Where possible, the dose should be rounded to the nearest 25 mg to facilitate administration.<sup>(2)</sup>

**Bacterial infections:**

- Children ≥ 4 weeks: 1 - 2 mg/kg/dose (to a maximum of 100 mg) given twice daily.<sup>(2, 5, 8)</sup>

**Acne vulgaris:**

- Children ≥ 8 years: 50 mg once daily; may be increased to 100 mg once daily if required.<sup>(2, 8)</sup>

**Tooth avulsion:**

- Children  $\geq 8$  years
  - $< 26\text{kg}$ : 50 mg once daily
  - $\geq 26\text{kg}$  to  $< 35\text{kg}$ : 75 mg once daily
  - $\geq 35\text{kg}$ : 100 mg once daily.<sup>(9)</sup>
  - Refer to [Dental trauma ED guideline](#)

**Malaria Prophylaxis:**

- Children  $\geq 8$  years: 2 mg/kg/dose (to a maximum of 100 mg) once daily. Commence 2 days before entering an endemic area and continue for 4 weeks after leaving.<sup>(2, 8)</sup>

**Renal impairment:**

- [eGFR calculator](#)
- There is minimal information regarding the use of doxycycline in renal impairment. The lower dose should be utilised in patients with a eGFR  $< 10$  mL/min.<sup>(1)</sup>
- eGFR  $< 10$  mL/minute: [Use a maximum dose of 1 mg/kg/dose \(to a maximum of 100 mg\) twice daily.](#)<sup>(1)</sup>

**Hepatic impairment:**

- No dosage adjustment is required in mild to moderate hepatic impairment, however in patients with severe hepatic disease, excretion may be delayed and the elimination half-life extended.<sup>(1)</sup>
- Doxycycline should be used with caution in patients currently taking other potentially hepatotoxic agents.<sup>(1)</sup>

**ADMINISTRATION**

- Once daily dosing of doxycycline is best administered in the morning.<sup>(2)</sup>
- All doses should be taken with a glass of water AND after food or milk to reduce the risk of oesophageal irritation and ulceration.<sup>(2-5, 7)</sup>
- Patients should be instructed to remain upright (do not lie down) for half an hour after taking the tablet/capsule to reduce the risk of oesophageal ulceration from partially swallowed tablets/capsules.<sup>(2, 7)</sup>
- Separate doses from multivitamins, iron, zinc and antacids containing aluminium, magnesium and calcium by at least 2 hours.<sup>(1, 2, 4, 6)</sup>

**MONITORING**

- Patients should have their liver function tests, renal function and full blood count monitored during extended treatment.<sup>(1, 4, 5)</sup>

**ADVERSE EFFECTS**

**Common:** photosensitivity, nausea, vomiting, diarrhoea, epigastric burning, dyspnoea, peripheral oedema, tachycardia.<sup>(2, 7)</sup>

**Infrequent:** rash, stomatitis, gastrointestinal discomfort.<sup>(2, 7)</sup>

**Rare:** photo-onycholysis, nail discolouration, oesophageal ulceration (due to partly swallowed tablets or capsules), *Clostridioides difficile*-associated diarrhoea, hepatitis, fatty liver degeneration, intracranial hypertension (may present as headache and/or visual disturbance), toxic epidermal necrolysis, worsening of systemic lupus erythematosus, serum sickness-like reactions, anxiety, arthralgia, flushing, myalgia, tinnitus, vision disorders.<sup>(2, 7)</sup>

## STORAGE

- Store tablets below 25°C<sup>(6)</sup>

## INTERACTIONS

This medication may interact with other medications; consult PCH approved references (e.g. [Clinical Pharmacology](#)), a clinical pharmacist or PCH Medicines Information Service on extension 63546 for more information.

*\*\*Please note: The information contained in this guideline is to assist with the preparation and administration of doxycycline. Any variations to the doses recommended should be clarified with the prescriber prior to administration\*\**

## Related CAHS internal policies, procedures and guidelines

[Antimicrobial Stewardship Policy](#)

[ChAMP Empiric Guidelines and Monographs](#)

[KEMH Neonatal Medication Protocols](#)

## References

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Document Owner:	Head of Department – Infectious Diseases		
Reviewer / Team:	Children’s Antimicrobial Management Program Pharmacist		
Date First Issued:	February 2016	Last Reviewed:	December 2022
Amendment Dates:	November 2019, December 2022	Next Review Date:	December 2025
Approved by:	Medication Safety Committee	Date:	December 2022
Endorsed by:	Drugs and Therapeutics Committee	Date:	December 2022
Standards Applicable:	NSQHS Standards:    NSMHS: N/A Child Safe Standards: N/A		
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