

# DOXYCYCLINE

Belongs to the tetracycline class of antibiotics, binds to 30S subunit of the bacterial ribosome and prevents binding by tRNA, thus blocks protein synthesis.

## ANTIMICROBIAL SPECTRUM

- **Gram-positive:** some strains of *Streptococcus pneumoniae*, most strains of methicillin-susceptible and methicillin-resistant staphylococci.
- **Gram-negative:** *Haemophilus influenzae*, *Neisseria meningitidis*, *Helicobacter pylori*.
- **Intracellular bacteria:** *Brucella* spp., *Rickettsia* spp., *Coxiella burnetti*, *Chlamydophila* spp. and *Mycoplasma* spp.
- **Spirochetes:** *Borrelia burgdorferi*, *Treponema pallidum*, *Leptospira* spp.
- **Parasites:** *Plasmodium* spp.
- **Poor activity against most Gram-negative rods, anaerobes, enterococci.**

**ROUTE**  
**PO / IV**

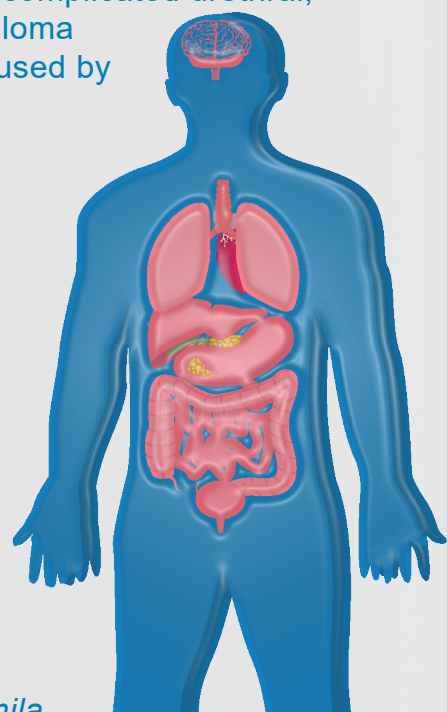


## EXCRETION

- Faeces (30%); urine (23% to 40%).
- Renal function impairment: Renal excretion 5%.

## MAIN INDICATIONS

- **Respiratory tract infections:** Community-acquired pneumonia as part of combination therapy.
- **Sexually transmitted infections:** Lymphogranuloma venereum, uncomplicated urethral, endocervical or rectal infections caused by *Chlamydia trachomatis*; granuloma inguinale (donovanosis) caused by *Klebsiella granulomatis*; chancroid caused by *Haemophilus ducreyi*; *Ureaplasma urealyticum* urethritis; syphilis when penicillin is contraindicated.
- **Trachoma or inclusion conjunctivitis** caused by *Chlamydia trachomatis*.
- **Lyme disease**
- **Pelvic inflammatory disease**
- **Legionnaires' disease**
- **Anthrax**, including inhalational anthrax (postexposure).
- **Rickettsial infections:** Rocky Mountain spotted fever, typhus fever and the typhus group, Q fever etc.
- **Zoonotic infections:** Treatment of psittacosis caused by *Chlamydophila psittaci*; plague due to *Yersinia pestis*; tularemia caused by *Francisella tularensis*; brucellosis; bartonellosis caused by *Bartonella bacilliformis*.
- **Prophylaxis for malaria** due to *Plasmodium falciparum* in short-term travellers (<4 months).



## ADULT DOSE

200 mg per day PO in one or two doses for most indications.

### Food interaction

- Doxycycline serum levels may be slightly decreased if taken with high-fat meals or milk.
- Administration with iron or calcium may decrease doxycycline absorption.
- Take with food if gastric irritation occurs.

**Dosing in patients with renal failure**

No dose adjustment in mild, moderate, or severe renal impairment.

## SIDE EFFECTS



! **Esophagitis and oesophageal ulceration:** sudden onset of chest pain, dysphagia, odynophagia and / or retrosternal pain requires assessment. It may occur any time during treatment especially in presence of pre-existing gastro-oesophageal reflux.

! **Photosensitivity:** skin photosensitivity reactions ranging from mild sunburn-like reactions to photodermatitis, usually develops shortly after sun exposure and is dose-related.

**Prevention:** sun avoidance, sun protective clothing and broad-spectrum sunscreen (UVA and UVB).

! **Drug Rash** with Eosinophilia and Systemic Symptoms (DRESS syndrome).

### OTHER ADVERSE EFFECTS

**Gastrointestinal, cutaneous:**  
Erythema multiforme, erythematous rash, exfoliative dermatitis, maculopapular rash.

**Hepatic:** Hepatotoxicity (rare: <1%; cholestatic or mixed hepatitis; may be accompanied by DRESS).

## DOXYCYCLINE IN CHILDREN

- The use of drugs of the tetracycline class during tooth development (second half of pregnancy, infancy and childhood to the age of 8 years) may cause permanent discoloration of the teeth (yellow-grey-brown).
- Doxycycline is the only tetracycline that can be used in children younger than 8 years if indicated, permitted by the American Academy of Pediatrics for a course < 21 days.

**PREGNANCY**  
FDA Category  
**D**

## Legal Disclaimer

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References can be found at [www.APUA.org](http://www.APUA.org)

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