

## Doxycycline

### - Drug Information

#### **Brand Names:**

Vibramycin®, Doxychel®, Doxy Caps®, Bio-Tab®, Monodox®, Doryx®, Doxirobe™

#### **Pharmacology:**

Semi synthetic tetracycline bacteriostatic antibiotic.

#### **Indications:**

For the treatment of infection caused by susceptible organisms.

For susceptibility of specific bacteria to this antibiotic, see specialized reference material.

Has longer half life and higher CNS concentrations than other tetracyclines

Also the treatment of choice in birds with psittacosis

Doxirobe™ Gel is applied subgingivally to periodontal pockets after teeth are scaled and polished for the treatment and control of periodontal disease in dogs.

#### **Contraindications:**

##### **- General**

Contraindicated in patients with known sensitivity to this type of drug.

Use only when benefit outweighs the risk during last half of pregnancy this can retard fetal skeletal development and discolor deciduous teeth even though this risk is less with doxycycline than with other tetracyclines.

Avoid in young animals.

Use with caution and at reduced dose in animals with severe liver disease.

##### **- Small Animal**

###### **- Dog**

Doxirobe Oral Gel - Clients should be advised to suspend brushing treated teeth for approximately 2 weeks following treatment.

###### **- Cat**

Dry pilling this medication in cats can cause esophageal erosion and stricture. Follow pill with enough water to insure capsules passage to the stomach.

##### **- Large Animal**

###### **- Horse**

IV route is considered contraindicated in horses.

#### **Interactions:**

##### **- General Interactions**

No identified General Interactions at time of publishing.

##### **- Category Interactions**

###### **- Antacid**

Oral antacids that contain aluminum, calcium, magnesium, zinc or bismuth cations may be chelated and cause decreased absorption of doxycycline. Separate dose by 1-2 hours.

###### **- Anticoagulant**

Patients on anticoagulant therapy may need to have their dose adjusted.

###### **- Bactericidal**

May interfere with bactericidal antibiotics although this is controversial.

###### **- Barbiturates**

Barbiturates may decrease half life of doxycycline.

###### **- Cathartic**

Saline cathartics that contain aluminum, calcium, magnesium, zinc or bismuth cations may be chelated and cause decreased absorption of doxycycline. Separate dose by 1-2 hours.

###### **- GI protectant**

GI products that contain aluminum, calcium, magnesium, zinc or bismuth cations may be chelated and cause decreased absorption of doxycycline. Separate dose by 1-2 hours.

##### **- Drug Interactions**

- Aminophylline

Theophylline may increase risk for GI side effects.

- Digoxin

May increase the availability of digoxin and lead to toxicity-This may last for several months after tetracyclines have been discontinued.

- Insulin

May possibly reduce the insulin requirements of diabetics.

- Iron dextran

Oral iron may decrease absorption and should also be separated by a few hours from doxycycline.

- Kaolin/Pectin

Kaolin and pectin may decrease absorption and should also be separated by a few hours from doxycycline.

- Methoxyflurane

May increase the risk of nephrotoxicity from methoxyflurane.

- Sodium bicarbonate

Sodium bicarbonate may decrease absorption and should also be separated by a few hours from doxycycline.

- Sucralfate

Sucralfate may decrease efficacy.

- Theophylline

Theophylline may increase risk for GI side effects.

### **Adverse Effects:**

- **General**

Nausea and vomiting are most common. This can be minimized if given with food.

If given long term may cause overgrowth of nonsusceptible organisms.

Humans have reported photosensitivity, and rarely hepatotoxicity and blood dyscrasia.

Has been implicated in esophageal stricture formation in particularly in cats. Follow pill with at least 6 mL water.

- **Large Animal**

- Horse

IV use in horses have been associated with arrhythmias, collapse and death.

### **Dosages:**

- **General**

Do not give IM or SQ to any species.

Give with food if GI upset occurs.

- **Small Animal**

- Dog

General use for infection: 3 - 5 mg/kg by mouth every 12 hours for 7 - 14 days

For soft tissue, urinary tract: 4.4 - 11 mg/kg by mouth or IV every 12 hours for 7 - 14 days

For acute *E. canis* infection: 5 mg/kg by mouth every 12 hours or 10 mg/kg by mouth every 24 hours for 14 - 16 days

For chronic *E. canis* infection: 10 mg/kg by mouth every 24 hours for 30 - 42 days

For canine granulocytic anaplasmosis (*Anaplasma phagocytophilum*): 5 mg/kg by mouth every 12 hours for 14 days; most dogs show clinical improvement in 24 - 48 hours.

For Lyme disease: 10 mg/kg by mouth every 24 hours for 21 - 28 days

For ehrlichiosis (*E. canis*) in dogs with a positive test result and clinical signs consistent with the infection: 10 mg/kg by mouth (rarely IV) every 12 - 24 hours for 28 days.

For leptospirosis: 5 - 10 mg/kg by mouth every 12 hours for 2 weeks. Management of underlying renal disease is a must. Regardless 10 - 30% of patients die.

For Toxoplasma gondii: 5 - 10 mg/kg by mouth every 12 hours for 4 weeks

For Rocky Mountain Spotted-Fever (Rickettsia rickettsii): 5 mg/kg by mouth every 12 hours

For idiopathic lymphoplasmacytic (chronic) rhinitis: Long term administration of antibiotics having immunomodulatory effects combined with nonsteroidal anti-inflammatory agents can be helpful in some dogs. Doxycycline 3 - 5 mg/kg by mouth every 12 hours or azithromycin 5 mg/kg by mouth every 24 hours in combination with piroxicam 0.3 mg/kg by mouth every 24 hours

9. For uncomplicated infectious tracheobronchitis (B. bronchiseptica): 5–10 mg/kg by mouth once daily for a minimum of 2 weeks; treatment for up to 3 months should be considered, particularly when managing simultaneous infections in multiple dogs in the same environment.

10. In combination with ivermectin as an adulticide for D. immitis: In this study doxycycline was administered at 10 mg/kg by mouth once daily for 30 days along with ivermectin/pyrantel pamoate with the ivermectin dose at 6–14 micrograms/kg by mouth once every 15 days for 6 months. 100% (total of 11 dogs) were negative for circulating microfilaria by day 90. 74% of dogs were negative for circulating antigens at day 300 (4-months post ivermectin).

11. For salmon poisoning (Neorickettsia helmintheca): 10 mg/kg IV twice a day for at least 7 days  
For its antiarthritic effect:

1. 3–4 mg/kg by mouth once daily for 7–10 days.

Doxirobe™ Oral Gel is applied subgingivally to the periodontal pocket(s) of affected teeth after scaled and polished. See package for more details.

- Cat

Do not dry pill cats with oral doxycycline; follow with at least 6 mL of water or use a compounded slurry to administer

For systemic infections, bacteremia: 5 - 11 mg/kg by mouth or IV every 12 hours

For feline haemobartonellosis: 5.5 mg/kg by mouth twice daily

For feline ehrlichiosis: 5 mg/kg twice daily

For Toxoplasma gondii: 5 - 10 mg/kg by mouth every 12 hours for 4 weeks

For Haemobartonellosis: 5 - 10 mg/kg by mouth once daily for 7 days.

For Bartonellosis: 50 mg (total dose) by mouth every 12 hours for 14 - 28 days.

- Birds (small)

For Psittacosis (Chlamydiosis): 75 - 100 mg/kg IM every 5 - 7 days for the first 4 weeks then every 5 days for the duration of a 45 day treatment or 40 - 50 mg/kg by mouth once daily for cockatiels, Senegal parrots Blue fronted and Orange winged Amazons, 25 mg/kg by mouth once daily for African Grey parrots, Goffin's cockatoos, Blue and gold macaws and Green winged macaws.

Empirically: 25 - 50 mg/kg by mouth once a day is the recommended starting dosage for unstudied avian species. In psittacines: 17.6 - 26.4 mg/kg by mouth twice daily using the oral syrup or suspension. For initial therapy in severe cases: 22 - 44 mg/kg IV once or twice; do not give IM. Long term therapy (45 days) can be given as 200 mg (from capsules) per pound of food.

Using the oral liquid/suspension: 50 mg/kg by mouth every 24 hours, or divided every 12 hours (use less for macaws).

Using the hyclate salt on corn, beans, rice and oatmeal: 1 gram per kg of feed.

Using the injectable product (Vibaravenos®-may not be available commercially in the USA): 100

mg/kg IM once weekly (75 mg/kg IM once weekly in macaws and lovebirds)

Ratites: 2 - 3.5 mg/kg by mouth twice daily

- Rodent

Mice, Rats and gerbils: For mycoplasmal pneumonia: 5 mg/kg by mouth twice daily with enrofloxacin (10 mg/kg by mouth twice daily)

- Reptiles

For susceptible infections: 10 mg/kg by mouth once daily for 10 - 45 days

Useful for bacterial respiratory infections in tortoises having suspected Mycoplasma infections.

- Guinea Pig

2.5 - 5 mg/kg by mouth every 12 hours

- Hamster

2.5 - 5 mg/kg by mouth every 12 hours

- **Large Animal**

- Horse

Warning: Doxycycline intravenously in horses has been associated with fatalities. Until further work is done demonstrating the safety of this drug, it cannot be recommended for parenteral use in this species.

For Lyme disease: 10 mg/kg by mouth once to twice daily for up to 30 days

**Special Notes:**

None