



# Giardia in Dogs and Cats: More Common Than You Think

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*Giardia* is an important cause of outbreaks of waterborne infection due to contamination of raw municipal water, back-country streams, and lakes with human effluent or infected animal feces.<sup>1</sup> The overall prevalence of *Giardia* in dogs in North America has been reported at about 8%, with much higher levels in puppies (36% to 50%) and in animals in shelters and kennels (up to 100%).<sup>2</sup> The prevalence in cats tends to be lower, at about 4%.<sup>2</sup> As with dogs, infection in cats is more common in animals younger than 3 years of age. Most infections are subclinical or show only transient softening of the stool early in the infection, although diarrhea may be acute and short-lived, chronic, or intermittent in dogs and cats.

## Diagnosis

The diagnosis of *Giardia* infection traditionally has depended on microscopic identification of trophozoites or cysts in feces of affected animals. However, microscopic diagnosis of *Giardia* infection can be difficult because cysts are delicate and may be shed intermittently. Many artifacts (e.g., grass pollen, yeast) mimic to varying degrees the morphology of *Giardia* cysts, and care must be exercised in differentiating these from *Giardia*. A commercially available direct immunofluorescence assay can be used to facilitate the diagnosis of *Giardia*; however, this test requires a fluorescent microscope for detection of the cysts. There are also human ELISA kits available that can detect *Giardia* antigen in fecal specimens; however, the performance characteristics of many of these kits have not been well studied in dogs and cats, and these assays are relatively expensive.

Recently, a novel SNAP® *Giardia* Test Kit (IDEXX Laboratories, Inc., Westbrook, ME) for detection of *Giardia* antigen in canine and feline feces was released. This test is a rapid in-house enzyme immunoassay that can be conducted on fresh feces, previously frozen feces, or feces stored at 2°C to 7°C for up to 7 days. This test represents the first commercially available ELISA designed specifically for dogs and cats and has the added advantages of simplicity, rapid completion (8 minutes), and low cost.

## Treatment

Treatment for *Giardia* should include bathing the infected animal and decontamination of the animal's environment with a quaternary ammonium-based disinfectant. Giardicidal drugs used in dogs and cats include the following:

- Metronidazole, 50 mg/kg PO q24h for 5 days, is only about 67% effective in dogs,<sup>3</sup> can cause neurotoxicosis, is expensive, and is suspected of being teratogenic.
- Albendazole, 25 mg/kg PO q12h for 2 days, is effective in dogs; however, the drug can cause pancytopenia secondary to bone marrow suppression.<sup>4</sup>
- Fenbendazole is generally safe and effective in dogs and cats when administered at a dose of 50 mg/kg PO q24h for 3 days.<sup>5</sup>
- Quanacrine, 6.6 mg/kg PO q12h for 5 days, is effective in dogs; however, the drug can cause anorexia, lethargy, and fever.<sup>3</sup>

## Prevention

Recently, a commercial *Giardia* vaccine (GiardiaVax™, Fort Dodge Animal Health, Overland Park, KS) containing chemically inactivated trophozoites has been prepared and licensed for use in dogs and cats in the United States. Efficacy studies conducted in puppies and kittens revealed that fewer vaccinated animals developed diarrhea after oral challenge, and diarrhea in vaccinated animals was of short duration compared with controls. Vaccination also reduced the duration of cyst shedding and the number of cysts shed in the feces when compared with control animals.<sup>6</sup> The use of *Giardia* vaccination as immunotherapy in naturally infected dogs and experimentally infected cats has had mixed results, although additional studies are warranted to determine the efficacy of vaccination combined with giardicidal drugs.

## References

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