

Canine Giardiasis (*Giardia*)

Information for Dog Owners



Key Facts

Canine giardiasis is a highly contagious protozoal infection that occurs globally.

Infectious *Giardia* cysts can be shed by sick and healthy dogs and can survive in the environment for months.

Infection without signs of disease is common. Clinically ill dogs most commonly have diarrhea; in puppies this is often pale in color and foul-smelling.

Treatment consists of medication for dogs with diarrhea, along with environmental disinfection to remove infectious *Giardia* cysts.

Some types of *Giardia* can be transmitted between dogs and people (zoonoses). In developed regions, the risk of transmission between dogs and people is considered low.

What is it?

Canine giardiasis is due to infection with *Giardia duodenalis*. This organism is a highly infectious and environmentally resistant protozoa that occurs throughout the world. *Giardia* has numerous assemblages ('types') identified as A through H, of which types C and D most commonly infect dogs.

Veterinarians most often diagnose giardiasis after owners notice a sudden onset of diarrhea in their young dog. Infected dogs frequently have a history of being purchased or adopted from places with dense dog populations or a history of being around other dogs or places where other dogs visit (e.g. dog parks).



Microscopic view of *Giardia*, the cause of giardiasis in people and animals (Public Domain: Centers for Disease Control and Prevention)

Who gets it?

Dogs, cats, and humans, along with multiple other mammals and birds, can be infected with *Giardia*. With few exceptions, specific *Giardia* assemblages tend to infect specific species, e.g. *Giardia* types C and D predominately infect dogs, types A1 and F infect cats, types A2 and B infect humans.

Can people get sick with it?

Yes, an estimated 2% of adults and up to 8% of children in developed countries are infected with *Giardia* (see Resources). These infections are most frequently the result of direct or indirect contact with other people. It is very uncommon for people to be infected through contact with infected dogs or with the dog assemblage (type), as this assemblage generally only infects dogs. In some circumstances, dogs can become infected with the human *Giardia* assemblage; this is most common in regions where there are limited human fecal waste management practices.

How is it spread?

(Transmission & Infection Risk)

Giardia cysts (hard shells containing *Giardia*) are shed in the feces and can survive in the environment for months. Most commonly, dogs become infected by ingesting feces containing *Giardia* cysts, but transmission can occur through

contact with contaminated items (e.g. soil, cages, toys), grooming of feces-soiled fur, or drinking contaminated water. Cysts are very hardy and can remain infectious in the environment, serving as a continued source of infection.

Young dogs, specifically puppies under six months of age, are at greatest risk for clinical disease. The highest risk of infection is in young dogs housed in densely populated environments.



What should I look for? (Signs of Disease)

Most dogs infected with *Giardia* have no clinical signs. They appear as healthy dogs with normal appearing feces but may be shedding cysts and able to infect other dogs.

Dogs with signs of disease are typically young (i.e. less than 6 months of age) with an acute onset of diarrhea. Feces are often soft, pale, foul-smelling and contain fat or mucus. Chronic diarrhea can occur and in severe cases result in weight loss.

Immunity does not occur after infection. Dogs can be re-infected from their environment.

How is it diagnosed?

Your veterinarian will diagnose giardiasis based on history (e.g. recent dog-to-dog contact), clinical signs (diarrhea) and examination findings. In order to confirm infection, your veterinarian will obtain fresh feces from your dog and perform a fecal test (e.g. microscopic investigation using a direct smear, saline wet mount, or fecal floatation by centrifugation). Other fecal tests that may be performed include *Giardia* ELISA, fecal immunofluorescence assay (IFA) and PCR. As *Giardia* cysts can be shed intermittently, your veterinarian may advise that multiple samples be assessed (e.g. three fecal samples over 5-7 days). They may also recommend performing two different types of tests in combination to help with

diagnosis, e.g. fecal direct smear with ELISA test.

Fecal examination (microscopic investigation) can also help identify other parasites that may be responsible for (or worsen) your dog's diarrhea.

It is important to be aware that a positive *Giardia* test does not prove that the dog's illness (e.g. diarrhea) is caused by *Giardia*, or by *Giardia* alone; however, a positive test result in a dog with diarrhea warrants therapy.



What is the treatment? Will my dog recover?

Treatment consists of a specific veterinary prescribed deworming medication, particularly if other parasites are observed or suspected. An antibiotic may be prescribed in dogs that have not responded to treatment with deworming or if re-infection occurs. Treatment is initiated in order to stop diarrhea, and it is important to be aware that elimination of infection (i.e. cure) can be difficult.

Removing *Giardia* cysts from the dog's fur and environment is critical to speed resolution and help prevent re-infection or spread to other dogs. Bathing dogs with a chlorhexidine-containing shampoo at the beginning and end of the course of treatment removes cysts from the hair coat. The dog's environment should be kept clean (all feces promptly removed) with periodic cleaning and disinfection to remove cysts. Surfaces not amenable to environmental disinfectants (e.g. bedding, upholstery) should be machine washed or steam cleaned.

Prognosis for recovery is excellent in most dogs with appropriate therapy. In dogs where diarrhea does not respond to appropriate *Giardia* therapy, other causes of diarrhea (e.g. parasites, inflammatory bowel disease) should be investigated and further diagnostics considered.

How can I stop this from happening to my dog and other dogs?

Be informed and proactive. Since both healthy and sick dogs can shed *Giardia* in their feces, preventive measures should be taken by all dog owners and those working in canine group settings (e.g. doggie daycare, boarding).

Prevention of infection requires good environmental hygiene, clean drinking, swimming, and play water sources, proper nutrition, and low stress housing without crowding. Regular disposal of fecal matter with environmental cleaning and disinfection is critical to prevent spread and re-infection.

Young dogs are at greatest risk of transmitting *Giardia* and becoming infected and sick. Socialization of puppies with other puppies (or adult dogs who have been properly vaccinated) is important. However, to reduce infection risks socialization or dog group events should occur as part of well-organized programs that incorporate other preventive measures, such as appropriate environmental cleaning and disinfection and immediate removal of dogs with signs of illness.

Outbreak management

Dogs suspected or known to have giardiasis should immediately be separated to prevent risk of infection to other dogs. When a number of dogs in a group or event become infected, it is recommended to immediately contact someone with experience in veterinary infectious disease risk assessment and outbreak management to help control the further spread of infection, particularly with larger dog group events and facilities such as kennels that house groups of dogs together.



Zoonotic (Human Infection) Alert

People become infected with *Giardia* in the same way as dogs, by swallowing *Giardia* cysts. In people, this often occurs through contaminated food or water or inadvertent ingestion through contaminated hands. Although anyone can become infected with *Giardia*, those at greatest risk are travelers to developing countries, people in childcare settings, those with contact with someone with giardiasis, and people who drink contaminated water (e.g. campers that drink untreated water from lakes). In North America, most human cases occur between summer and early fall.

Contact with animals has been linked to an increased risk for giardiasis in people; however, the nature and level of this risk is unclear. As most *Giardia* assemblages only infect specific species, it is very uncommon for people to become infected from dogs.

People can reduce their chance of infection with *Giardia* by not drinking untreated water from potentially contaminated sources (e.g. rivers, poorly treated water in countries where the water supply might be unsafe), washing hands with soap and water before and after high risk activities (e.g. eating, caring for a sick person or animal, using the toilet, having contact with person or animal feces), immediately removing and discarding animal feces, and cleaning and disinfecting surfaces likely to have been contaminated with human or animal feces (e.g. toys, bedding, clothing, household surfaces).

Additional Resources

Bouزيد M, et al (2015), The prevalence of *Giardia* infection in dogs and cats, a systematic review and meta-analysis of prevalence studies from stool samples. *Vet Parasitol* 207(3-4):181-202. Available at: [sciencedirect.com/science/article/pii/S0304401714006451](https://www.sciencedirect.com/science/article/pii/S0304401714006451)

Companion Animal Parasite Council. *Giardia*. Available at: capcvet.org/guidelines/giardia/

Painter, JE., et al. (2015), Giardiasis surveillance – United States, 2011–2012. *Morbidity and Mortality Weekly Report* 64(3):15-25. Available at: [cdc.gov/mmwr/preview/mmwrhtml/ss6403a2.htm](https://www.cdc.gov/mmwr/preview/mmwrhtml/ss6403a2.htm)

Stull, JW, et al. (2016), Disease prevention at canine group settings. Available at: vet.osu.edu/preventive-medicine/vpm-research/disease-prevention-canine-group-settings

The Centers for Disease Control and Prevention. Parasites – *Giardia*. Available at: [cdc.gov/parasites/giardia/](https://www.cdc.gov/parasites/giardia/)

Worms and Germs Blog. Resources - Pets. *Giardia*. Available at: wormsandgermsblog.com/resources-pets/

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