

Giardia in Dogs

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What is Giardia?

Giardiasis is an intestinal infection of man and animals caused by a protozoan parasite *Giardia intestinalis* (also known as *Giardia lamblia*).

"...it is not a "worm", bacteria or virus."

Giardia is a simple one-celled parasitic species; it is not a "worm", bacteria or virus. The parasite occurs worldwide and is a common cause of "Traveler's Diarrhea" in people. Outdoor enthusiasts who inadvertently consume contaminated water may develop "beaver fever", which is another name for giardiasis in people. Other examples of protozoan parasites that can cause enteric (intestinal) disease are Coccidia, Cryptosporidia and Toxoplasma.

Giardiasis can be an important cause of illness, especially diarrhea, in animals and man. However, the majority of dogs infected with *Giardia* do not have diarrhea, vomiting or any other signs of illness.

The *Giardia* organism has two forms. A fragile, feeding form exists in the gut of infected animals, while a hardy cystic form is shed in feces and can survive several months in the environment, particularly in water and damp environments.

How do dogs get giardiasis?

A dog becomes infected with *Giardia* when it swallows the cyst stage of the parasite. In susceptible dogs, once the cyst passes into the dog's intestines; it goes through transformation to the *trophozoite* or feeding form and attaches to the intestinal wall to feed. If sufficient numbers are present, clinical signs of damage to the intestinal wall will develop. Trophozoites reproduce by dividing, and some transform into the cystic form. Eventually, the dog passes cysts in its stool.

"Giardiasis can be transmitted by eating or sniffing the cysts from contaminated ground, or by drinking contaminated water."

These cysts are immediately able to infect another animal. Giardiasis can be transmitted by eating or sniffing the cysts from contaminated ground, or by drinking contaminated water.

When *Giardia* cysts are found in the stool of a healthy adult dog without diarrhea, they are generally considered a transient, insignificant finding. However, in puppies and debilitated adult dogs, they may cause severe, watery diarrhea that may be fatal if left untreated.



Giardia: 3000 x actual size
(after Kofoid and Christiansen)

The likelihood of developing disease increases when large numbers of cysts are present in the environment from fecal contamination. Giardiasis is a common occurrence in environments that are densely populated, such as kennels, pet stores, or animal shelters.

What are the clinical signs of Giardiasis?

These microscopic parasites attach themselves to the intestinal wall and the damage causes an acute (sudden-onset) foul-smelling diarrhea. The stool may range from soft to watery, often has a greenish tinge to it, and occasionally contains blood. Infected dogs tend to have excess mucus in the feces. Vomiting may occur in some cases. The signs may persist for several weeks and gradual weight loss may become apparent.

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The diarrhea may be intermittent. Most dogs do not have a fever but may be less active. The disease is not usually life threatening unless the dogs' immune system is immature or immunocompromised.

How is giardiasis diagnosed?

"...require a special zinc sulfate flotation solution for detection."

A routine fecal flotation test may fail to detect these tiny cysts, which are shed inconsistently in the feces, and which often require a special zinc sulfate flotation solution for detection. Occasionally, the parasites may be seen on a direct smear of the feces. If your veterinarian suspects giardiasis, a sample of stool may be analyzed for the presence of *Giardia* specific antigens (cell proteins). Many cases are presumptively diagnosed on the basis of medical history and clinical signs suggestive of giardiasis.

How is giardiasis treated?

The most common drug used to kill *Giardia* is metronidazole, an antibiotic. It is normally given for five to seven days to treat giardiasis. Another antiparasitic drug, fenbendazole, is suggested as a potentially useful treatment, especially when used in conjunction with metronidazole. This combination is usually administered to cats with refractory diarrhea (diarrhea that hasn't responded to treatment). Supportive treatment with other drugs may be needed as supplemental therapy if dehydration or severe diarrhea is present. Some dogs may require follow-up tests and treatments based on their condition and severity of infection.

What is the prognosis for Giardiasis?

The prognosis is good in most cases. Debilitated or geriatric animals and those with incompetent immune systems are at increased risk for complications, including death.

Can my dog give a Giardia infection to me or my family?

Giardia can cause diarrhea in humans and can potentially be passed from dogs to humans. In the past, it was assumed that cats and dogs, along with wildlife, were an important source of infection for humans.

"...contaminated municipal water supplies are responsible for many outbreaks. "

However, human-to-human transmission is also important and contaminated municipal water supplies are responsible for many outbreaks.

If your dog is diagnosed with giardiasis, environmental disinfection and good personal hygiene are important to prevent accidental spread to humans. In particular, people with immunodeficiency, such as AIDS or cancer, or who are undergoing chemotherapy, should use extreme care, especially when handling feces or after administering medications.

For environmental disinfection, you can use chlorine bleach at 1:32 or 1:16 dilutions, or 1-2 cups in a gallon of water (60-120 mls/L). However, be sure that the affected surfaces can be safely treated with bleach. Lysol® and quaternary ammonium compounds (Parvosol®, etc.) are also reported to be effective in killing the cysts. *Giardia* cysts are susceptible to drying so try to keep your environment as dry as possible. For best results, thoroughly clean the pet's living and sleeping areas and then allow the areas to dry out for several days before reintroducing pets.

Can Giardia be prevented?

A vaccine is available. *Giardia* vaccines are considered to be a non-core vaccine, and should only be used if your dog is at a high risk of contracting the disease, and after thorough discussion with your veterinarian.