

COMMON INTESTINAL WORMS IN DOGS AND CATS

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The following is a quick reference guide for pet caregivers about intestinal worms found in dogs and cats. At the end, I have provided my thoughts on treatment options.

Roundworms – Intestinal Parasite

How it is contracted

Most dogs and cats can be exposed to and many are afflicted with roundworms at some point. Cats often contract *Toxocara cati* while dogs generally acquire *Toxocara canis*. *Toxascaris leonina* can affect both species. This is called toxocariasis.

The majority of the time, puppies and kittens contract these parasites in larval stage via the placenta or mother's milk. Even if the mother has not presented with roundworms since a young age, the encysted larvae lay dormant in body tissues until pregnancy activates them.

The less common way dogs and cats contract roundworms is from ingesting a **paratenic host** such as earthworms, cockroaches or rodents [The term paratenic describes a host that is not necessary for the development of a particular parasite, but serves to maintain the life cycle of that parasite.] Another method is from sniffing, licking or eating infected feces.

Humans can get roundworms and develop toxocariasis from contacting and accidentally ingesting infected feces. It can be a very minimal amount. For instance, you touch feces or come into contact with it and then do not wash your hands thoroughly. Children are the most vulnerable population.

What to look for

If the worms mature, pet caregivers will see pale, possibly lengthy and spaghetti-shaped worms in the feces or vomit. Before this telltale symptom appears, both kittens and puppies can experience symptoms such as pot-bellied appearance, abdominal discomfort, inappetence, vomiting and diarrhea, or poor growth.

Roundworms generally do not mature in healthy adult dogs or cats but eggs and immature larvae can still be present in stools.

Treatment

Since roundworms are so common, we usually give a gentle wormer like pyrantel pamoate at 4 weeks and again at 6-7 weeks of age as a routine prophylactic for puppies. For kittens, liquid piperazine is often used.

Tapeworms – Intestinal Parasite

How it is contracted

The common cat and dog tapeworms are *Dipylidium caninum* and *Taenia saginata* or other *Taenia* species. Dogs or cats ingest infected carcasses that carry tapeworm eggs, cysts or larvae. Mice and other small mammals carry *Taenia* spp tapeworm eggs, whereas fleas and lice act as the intermediate hosts and are carriers. However, a companion pet does not get tapeworms from a flea bite, but rather from eating a flea or biting at a flea bite. These intermediate hosts are necessary for an infestation to occur in pets.

What to look for

Tapeworm heads attach to the intestinal wall. The tapeworm body grows like a chain and must lose the

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outer segments or links. These white rice-looking segments can be found in pet stools or around the anus wiggling around in the fur. When they dry, their color turns golden. Remember, the rest of the worm is still attached to the intestinal wall. Very mature worms can be up to eight inches in length. Sometimes, the entire worm can detach without treatment, but this is rare. A heavy and untreated infestation can cause an intestinal blockage and anemia.

Diagnosis

If you see these links in a pet's feces, properly bag and take the feces to your veterinarian for diagnosis.

Treatment

Veterinarians can prescribe tablets or give an injection of the parasiticide that dissolves the tapeworms in the intestines. So, you will not find whole tapeworms being excreted. Some natural remedies that are said to be successful include feeding buttermilk to the pet for 5-7 days. However, proper treatment with a tapeworm product is preferred.

Humans

Humans cannot contract these tapeworms from pet feces because the eggs need an intermediate host like a flea or louse. If a human ingests an infected flea, then tapeworms could develop.

Hookworms – Intestinal Parasite

How it is contracted

Ancylostoma caninum is the hookworm that usually infects dogs, while *Ancylostoma tubaeforme* typically infects cats. Other species of hookworms such as *Uncinaria stenocephala* infect both cats and dogs. These parasites can be transmitted back and forth between dogs and cats by exposure to infected feces.

Hookworms literally hook onto the intestinal wall and suck blood, causing varying degrees of anemia even in infested adult animals. When female hookworms reproduce, they pass hundreds of eggs through feces. These eggs can live a long time and do not need an intermediate host like tapeworms. When companion pets eat, walk through or roll around in infected feces, hookworms have a direct line to the intestinal wall via ingestion or can burrow into the skin making their way to the intestines.

Additionally, puppies and kittens can get hookworms through mother's milk, and it is common for them to die from this infestation as they develop severe anemia.

For puppies, these are not the only methods of hookworm contraction. Like roundworms, hookworms can become reactivated during pregnancy and pass to the litter via the placenta if a mother had them in the past.

What to look for

Unfortunately, the eggs that are passed in feces are microscopic and are not visible to the naked eye. In this instance, we need to pay attention to other symptoms such as anemia (pale gums and weakness are signs), weight loss, and bloody diarrhea.

Diagnosis

Veterinarians need a stool sample to complete a fecal flotation analysis for the hookworm eggs.

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Hookworm eggs are not present for at least 2-3 weeks until after infection. Fecal analysis is less reliable for recently born puppies as compared to adults.

Treatment

Several courses of antiparasitic medications are needed over a few weeks. However, please remember that giving the medication does not stop re-infestation. You will need to thoroughly clean your lawn, pick up all of the feces (daily) with proper protection, and thoroughly wash laundry and clean surfaces.

Humans

Most commonly, the larvae burrow into moist skin causing surface itching. They do not mature but can travel through the body causing damage to the eyes and internal organs. On rare occasions, humans can have hookworm larvae migrate through the skin and partially develop in the intestines.

Whipworms – Intestinal Parasite

How it is contracted

Whipworms are caused by *Trichuris trichiura* and can infest both dogs and cats. They are more common in dogs than in cats, but humans do *not* contract them. In particular, dogs pass feces that contain whipworm eggs. The eggs are very hardy and can tolerate practically all environmental conditions, which perpetuate their ability to become embryonic or mature. Dogs eat infected soil, water or food that contains the mature eggs. The eggs are persistently viable from several months to years so the probability of reinfection is very high.

What to look for

Once inside the body, the whipworm eggs mature in the small intestine into larvae. The larvae travel to the large intestine, where they become whipworms. Once they develop, they “worm” their way into the mucosal lining and feed on tissues that causes bleeding. The bleeding provokes bloody diarrhea. Other signs are anemia, dehydration and weight loss.

Diagnosis and Treatment

Similar to hookworms, veterinarians need to perform a fecal flotation test. Unfortunately, this can sometimes be inaccurate depending on the stool sample examined, and so collecting serial stool samples for a few days may be needed. If another cause of the bloody diarrhea is not identified veterinarians may prescribe a broad spectrum dewormer. If the symptoms go away, it is safe to assume whipworms or another parasite were the cause. However, we must remember that re-infestation is highly likely and a dewormer will need to be prescribed later on. Prevention is the key: pick up after your pet daily.

A Note about Flukes and Lungworms

Flukes (trematodes; flatworms) can infect a variety of different body parts in dogs and cats. The two most common trematode species are regional in the United States. In the Southeast and Hawaii, cats can often get liver flukes (*Platynosomum fastosum*) usually from hunting reptiles. The parasite invades bile and pancreatic ducts and ultimately causes liver failure. Even with treatment, prognosis is poor.

The Pacific Northwest has a major problem with the fluke, *Nanophyetus salmincola*, which can be found in the small intestine of both dogs and cats. These flukes do not cause disease, but are rather vectors of salmon poisoning (*Neorickettsia helminthoeca*) in dogs. With treatment, salmon poisoning usually can

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be cleared up fairly quickly. It is advisable to dog parents not to feed raw fish or allow them into freshwater if they live in this area.

Lungworms are not technically intestinal worms because they invade various parts of the respiratory tracts of dogs and cats. However, they have to be ingested. What we see most often are *Aelurostrongylus abstrusus* that appear to be exclusive to cats. They are often contracted from hunting birds, reptiles or rodents. Treatment is often with the dewormers.

My Thoughts on Treatment Options

The Centers for Disease Control and Prevention advocates giving dogs and cats deworming medications regularly for *intestinal* worms as a preventative due to the risk to humans. Do I agree with this blanket policy? No. In fact, the majority of researchers, veterinarians, and medical doctors would likely also disagree. The longer and more often that we give these antiparasitic drugs, the more resistant the worms will evolve in order to survive. With the exception of roundworm dewormers for puppies and kittens, I prefer treatment if a positive diagnosis is found for intestinal worms – rather than as a preventative measure. This will ensure the efficacy and longevity of the antiparasitic drugs.

However, there is another caveat.

Antiparasitic (*aka* anthelmintics) medications are a class of drugs called **macrocyclic lactones**. Milbemycin oxime and moxidectin are approved by the Federal Drug Administration as heartworm preventatives and also to prevent certain intestinal worms. But, a 2011 study conducted at Auburn University proved that macrocyclic lactones are losing their efficacy against heartworm due to worm mutations and prolonged use of the drugs. As well, we are seeing regional pockets around the United States where heartworms are still developing in treated dogs. We have to remember that the purpose of heartworm preventatives is not to prevent heartworm infection, but to stop the microflaria and larvae from developing into a full grown worm.

Does this mean I don't advocate the use of heartworm preventatives? No; I do advise their use for healthy dogs – when the temperature is above 57 degrees Fahrenheit (14 degrees Centigrade) for approximately two weeks and mosquitoes are prevalent. A basic rule of thumb is May through November for the majority of the country and basically year round for southern states. The Auburn University study mentioned above stated that while all but one of the drugs were not 100% efficacious, that the mean number of heartworms found in the untreated group was 51.6 whereas the treated groups had approximately 2-3 worms or worm fragments. It is much easier to treat a dog with 2-3 heartworms compared to a heavy burden. In essence, while the scientific community grapples with this growing inefficacy, the currently available drugs are efficacious to a certain degree and should still be used.

Of course, all heartworm preventatives have side effects; and some are better for some dogs and vice versa. I recommend discussing the right preventative with your veterinarian.

Finally, as a holistic veterinarian, I am often asked about natural dewormers for intestinal worms and heartworms. Unfortunately, I have not found that they work very well.

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