



THE WINN FELINE FOUNDATION

For the Health and Well-Being of All Cats

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Intestinal Parasites of Cats

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Roundworms

The most common intestinal parasite of the cat is the roundworm, *Toxocara cati*. Roundworms are acquired when cats eat an infected host, such as mice, birds, or insects. Kittens may acquire roundworms during nursing from an infected queen. An infected queen may harbor the larvae of the parasite in her body tissues for years. These larvae can undergo reactivation during pregnancy and lactation and infect the nursing kittens. Typically, kittens are more likely to be clinically affected than adult cats and may have diarrhea, vomiting (sometimes with worms in the vomitus), swollen abdomen, and failure to grow. Since *T. cati* also migrates throughout the liver and lungs of the cat, kittens can also cough due to pneumonia.

These white worms live in the small intestine of the cat and grow up to six inches in length. The eggs produced by the female worms are shed in the cat's feces and can persist in contaminated soil for years. Roundworm infections are diagnosed by finding the adult worms in vomitus, or by finding the eggs on a fecal examination. Treatment is simple and involves a deworming program using multiple doses of one of many available drugs. All kittens being adopted into a new home should receive deworming for roundworms.

Roundworms have considerable public health significance. In humans, they can cause a disease called larva migrans. This disease occurs when larvae of one of various parasites migrate into the deep tissues of the human body. In most cases, the larvae are from the dog roundworm, *Toxocara canis*, but cases associated with *T. cati* have been documented. Children can become infected by accidental ingestion of eggs from contaminated environments. If a heavy infestation occurs, severe disease in the eye, lung or liver requiring treatment can occur.

Tapeworms

Tapeworms are parasites of the small intestine that typically cause few signs of illness in an infected cat. The most common tapeworm in the cat is *Dipylidium caninum*. Adult tapeworms are ribbon-like worms and can grow up to a few feet in length. They are composed of hundreds or thousands of individual segments and can live for 2 to 3 years. A heavily infected cat can contain dozens of tapeworms and can suffer malnutrition and inflammation of the intestinal wall. Unlike other intestinal worms, tapeworms rarely shed eggs in the cat's feces, but rather shed motile units called proglottid segments. The proglottid segments, about the size of a grain of rice, are passed with the feces and are often found clinging to fur under the cat's tail or dried up in the cat's sleeping areas. These segments crawl around, releasing tapeworm eggs into the environment.

The eggs of *D. caninum* are ingested by flea larvae, which eventually develop into adult fleas infected with tapeworm larvae. Cats become infected when they ingest these adult fleas during grooming. Two to three weeks later, the infected cat starts to shed proglottid segments and the cycle is repeated. Control of tapeworms therefore also involves control of fleas, which act as a reservoir for reinfection.

There are common prescription dewormers that are effective against tapeworms, such as praziquantel and epsiprantel. These medications may be available alone or in combination with

other drugs to make a broad-spectrum dewormer. Only one dose of dewormer is necessary to treat tapeworm infections. Unlike roundworms, tapeworms rarely cause human disease.

Hookworms

The cat is host to three types of hookworms: *Ancylostoma tubaeforme*, *Ancylostoma braziliense*, and *Uncinaria stenocephala*. The most commonly found is *A. tubaeforme*. These small intestinal parasites are usually acquired by ingestion of feces, which contain infective larvae, although they can also be acquired through skin penetration. Cats may also be infected by eating rodents carrying hookworm larvae. This parasite is not known to spread to kittens from an infected queen through the placenta or through milk.

Most larvae develop to adult hookworms in the small intestine and live from six months to one year. However, some larvae become dormant and hide in body tissues. It is possible for them to reactivate at some later date and re-establish adult hookworms in the small intestine. The adult hookworms shed eggs into the feces of the cat and infective larvae later develop to repeat the cycle.

Kittens are most severely affected by this blood-sucking worm and may suffer diarrhea with dark or bloody stools, vomiting, weight loss, weakness and anemia. In some cases, especially in adults, the infection can be asymptomatic. Chronic cases can develop significant anemia. The infection is diagnosed by finding the parasite eggs in feces under a microscope. Treatment of hookworm infection is the same as for roundworms.

Hookworms are transmissible to humans and are one cause of the skin disease called cutaneous larva migrans. The infective larvae can penetrate human skin and cause a red, itchy rash. When large numbers of larvae infect a human, they may migrate to the lungs and cause significant disease.

Coccidiosis

Coccidiosis is caused by the protozoal parasite *Isospora*. It is thought that almost all cats will become infected with *Isospora* in their lifetime. These protozoan parasites primarily inhabit the small intestine of cats and most infections cause no clinical signs of illness. Kittens are most likely to show signs of diarrhea (sometimes with blood or mucus), and in rare cases, may die. Clinical signs are most common at the time of weaning and are often seen in kittens living in crowded conditions. Kittens suffering from other ailments, such as malnutrition, and concurrent bacterial or viral infections, are most likely to become ill.

Isospora infects cats either through the ingestion of infective oocysts from the environment, or when a cat eats a prey animal infected with the parasite. The parasite completes its life cycle in the intestinal tract of the cat and new oocysts are then shed in the cat's feces. These oocysts require several days in the environment before they are infective, although under the right conditions, this can occur in as little as six hours. This fact means that good litter box hygiene and prompt removal of feces can help break the fecal-oral route of transmission in a multi-cat environment.

Diagnosis of *Isospora* infection is through identification of the oocysts on fecal examination under the microscope. Sulfonamide antibiotics are the drugs of choice for small animal infections, although many infections clear spontaneously. However, these drugs can only curtail some stages of parasite reproduction and cannot eliminate the parasite from an infected cat. Other drugs, such as ponazuril, are being used in animal shelter situations.

Giardia

Giardia is the most commonly diagnosed intestinal parasite found in humans, and its distribution is worldwide. While the infection rate in cats is lower, it also often goes undiagnosed. *Giardia* can be found in the small intestine of many types of animal. The question of whether dogs and cats can function as a reservoir for human infections is unclear, but precautions should be taken.

This protozoan parasite is most common in cats under one year of age and in multi-cat environments. Most infected cats have no signs of illness.

The parasite lives primarily in the small intestine of the cat, although it can sometimes be found in the large intestine. It is spread by fecal-oral transmission when infective cysts are passed in the stools and then contaminate the environment, including food and water. These cysts can survive for months in the right conditions. When a cat ingests cysts from its environment, signs of illness can occur in less than two weeks. The most common clinical sign is diarrhea, often containing mucus. The diarrhea can be mild or severe and it may be constant or intermittent. Some cats also suffer from weight loss. Young cats and kittens are most severely affected, and they may be dehydrated, lethargic, and suffer from loss of appetite.

The parasite is diagnosed by examination of fresh fecal smears using various techniques. Some laboratories and veterinary clinics are now offering more accurate fecal ELISA tests for *Giardia*. It is currently recommended that all cats diagnosed with *Giardia* receive treatment, whether they are ill or not. The most common drug used to treat this parasite is metronidazole, but resistance to this drug can cause treatment failures. Other drugs, such as albendazole or fenbendazole, may be more effective. Environmental control is also very important, especially in multi-cat environments, where bleach is the disinfectant of choice.

For more information

Companion Animal Parasite Council – Pets and People

<http://www.petsandparasites.org/>

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