

Cats Get Worms, Too: Intestinal Parasites in Cats

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In my experience, when people think about intestinal parasites in cats, they tend to think about protozoal diseases, specifically coccidiosis, or tapeworms. Now granted, tapeworms are intestinal parasites, but there are two other important parasites in cats that tend to be overlooked.

While in dogs, people commonly encounter the “unholy trinity” of roundworm, hookworm and whipworm, people forget about these three parasites in cats. Arguably, whipworm is rare in cats, and it is understandable as to why people forget about this parasite. Hookworm and roundworm are another story completely. We will focus on these two parasites. Excellent information about these 2 parasites can be found at the following website: <http://www.capcvet.org/>.

Roundworm

Roundworm is the common name for the feline ascarid, *Toxocara cati*. It is common in cats, and affects all ages of cats, as compared to *T. canis*, which primarily affects puppies. There is no documented evidence of age-related immunity. Treatment is relatively straightforward. As with other parasites, by understanding the life cycle, we can understand how to treat and prevent transmission of the parasite. As with all parasites, it is easiest to start our discussion with the adult worm. Adult *T. cati* can be easily seen, as they are 3 inches in length, and has prominent arrowhead-shaped cervical alae. It is important to be able to identify the adults, since clients will often bring the worm that they found in either their cat’s vomit or feces. The adults, which are separate sexes, will mate in the intestine. The female will then produce literally thousands of eggs per day, which are shed into the environment in the feces. These eggs are shed unembryonated, and are not immediately infective. Depending on temperature, eggs will be infective 2 to 4 weeks after being excreted into the environment. At this point, they contain the infective third-stage larvae (L3).

The eggs are EXTREMELY resistant to disinfectants and environmental changes. What makes their presence even more insidious is that the eggs have a sticky outer coating, which makes them very difficult to remove from surfaces, including concrete. Eggs can survive for years, although extreme heat and prolonged exposure to sunlight will kill the larvae. Because of the resilience of eggs in the environment, humans, particularly children can ingest these eggs. Once ingested by a suitable host, whether it is a definitive felid host or accidental human host, these eggs will hatch and the larvae will be released into the intestine.

Upon entering the intestine, the larvae will penetrate the intestine, and travel via the blood to the liver, after which the larvae will travel to the lungs. Once in the lungs, the larvae will literally burst out of the alveoli. The larvae then ascends the trachea in what is known as “tracheal migration.” After ascending the trachea, the larvae are swallowed, and travel to the intestine where they will mature to adults.

In paratenic hosts, including humans, the larvae will reenter the alveolar blood vessels and travel to the muscles or organs, where they will arrest. This is known as somatic migration, and is the migration path that occurs in humans, and results in the condition known as larva migrans.

Larva migrans is typically associated with the eye (ocular larva migrans), or viscera (visceral larva migrans). As mentioned above this disease occurs primarily in children, as a result of their propensity to eat dirt, which can potentially contain infectious eggs. The easiest way to prevent this horrible disease is to deworm cats regularly before the worms mature. If the worms are not adults then they cannot produce eggs.

One cannot pick up cat feces regularly, if the cat lives partially or completely outdoors. So to prevent contamination, attempt to keep cats out of gardens and sandboxes, even though this can be a difficult endeavor. For many years, it was taught that *T. cati* underwent transmammary transmission. However, recent data suggests

that this may not be the case. What we do know is that cats can become infected by ingesting infective eggs, or alternatively paratenic hosts. As a reminder, paratenic hosts are transport hosts, which is defined as a host in which larvae migrate, but no development occurs. Since adult cats hunt, they can become infected from ingesting *T. cati* larvae that are encysted in rodent paratenic hosts. With that being said, another way to prevent *T. cati* infection is to prevent cats from hunting. Prevention of transmission of *T. cati* to other cats and humans can be accomplished by periodic deworming of cats, or maintaining the cats on monthly heartworm preventive.

Hookworm

Cats can become infected with two hookworms of significance, *Ancylostoma tubaeforme*, and *A. braziliense*, which can also infect dogs. As with roundworms, adults live in the intestines where they mate and produce eggs. They are roughly the diameter of a penny, and literally are shaped like a “hook.” Like roundworms, they produce a large number of eggs. The eggs are shed into the environment where they will develop and hatch in a period of 2 or so days. At this point the larvae are L1s, and will molt to the infectious L3s during the next week (or in other words, up to 8 days after being shed). The L3s can then infect the host either through ingestion or skin penetration.

Ancylostoma tubaeforme

Ancylostoma tubaeforme is uncommon as compared to *A. caninum* in dogs, and seems to be more common in young animals. Infection is by ingestion or skin penetration. No transplacental or transmammary infection occurs. It is also suspected that paratenic hosts play an important epidemiologic role in infection. *Ancylostoma tubaeforme* is considered less pathogenic than *A. caninum*. Cats infected with a low worm burden may be asymptomatic, however, heavy infections can result in clinical disease, especially in kittens.

Ancylostoma braziliense

Ancylostoma braziliense infects cats and dogs and is much less common than other hookworms. It is found in more tropical climates. Infection is primarily by skin penetration, whereas ingestion from the environment is much less common. *Ancylostoma braziliense* is not highly pathogenic. The reason it is important is it is considered to be the primary cause of cutaneous larva migrans in humans. With that being said, the other hookworms can also cause cutaneous larva migrans.

Prevention

With dogs, you can prevent transmission by picking up feces after defecation. This is obviously much more difficult with cats. Keeping cats indoors would prevent contamination of the environment, but this is not feasible for many pet owners. Depending on which recommendations you read, you can deworm kittens starting at 2 or 3 weeks. As with dogs, deworming cats every two weeks until 10 to 12 weeks of age is recommended. Finally, depending on the life style of the pet and owner, monthly administration of a heartworm preventive is recommended.