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## **Toxocara canis, Toxocara leonina**

*Roundworms, Ascariasis*

### **Affected Animals:**

Dogs and cats can develop adult worm infections within the digestive tract. The larval stage of the roundworm can cause serious damage in the human, but they cannot develop into the adult form in species other than the dog or cat. Dogs are affected by both the *Toxocara canis* and the *Toxocara leonina* species, but cats only become infected from the *Toxocara leonina*.

### **Overview:**

Almost all puppies are born already infected with roundworms, which are the most common intestinal parasite of the dog. *Toxocara canis*, a species of roundworms, is capable of migrating across the infected mother dog's placenta and into the unborn puppies. Neonates also can ingest the infective form of the roundworm when nursing infected milk from their mother.

Other possible modes of roundworm infection include either ingestion of infective eggs from the environment or from prey that harbor the parasite. Large numbers of eggs can be spread into the environment by an infected dog. These eggs are a human health hazard if accidentally ingested and can cause vision impairment or other serious diseases.

Roundworm adults are fairly long, white, and tubular in shape and have been said to resemble half-lengths of spaghetti noodles. These worms swim inside the small intestine and feed on the animal's digested food. Because roundworms can grow to be eight to 12 centimeters long, an infection of multiple adults is capable of causing inflammation and distention of the bowel loops. This can lead to colic, interference with normal contractions of the intestines, and the inability to absorb the nutrients that the dog's body needs. A severe roundworm infestation actually can result in a blockage of the intestines and possible death.

Roundworms can lead to a host of medical problems in dogs, including stunted growth among puppies that are infected early in their development. Puppies are more likely than adult dogs to develop serious symptoms. Fortunately, there are safe and effective treatments and measures of prevention that will keep canines healthy and limit the spread of infection to others.

### **Clinical Signs:**

Diarrhea, a poor hair coat, colicky pain, decreased appetite, and a pot-bellied appearance to the abdomen may be seen. Some animals can develop liver problems, pneumonia, or stunted growth. If roundworms get to the stomach, the animal may vomit up some of the

worms.

**Symptoms:**

Diarrhea, a poor hair coat, abdominal discomfort evidenced by moaning or groaning, decreased appetite, and a pot-bellied appearance to the abdomen may be seen. Some animals can develop liver problems, pneumonia, or stunted growth. If roundworms get to the stomach, the animal may vomit up some of the worms.

**Description:**

Both dogs and puppies can be infested with a common intestinal parasite called the roundworm, but the infection tends to have a more severe effect on puppies. The roundworms, or ascarids, of the dog are *Toxocara canis* and *Toxocara leonina*. *Toxocara canis* is the most common species that affects canines; almost all puppies are born already infected by their mother. Other possible modes of roundworm infection include either ingestion of infective eggs from the environment or prey that harbor the parasite.

These long, white, tubular adult worms can reach lengths of eight to 12 centimeters long. The roundworms live in the small intestine, moving against and feeding upon the flow of food being digested by the animal. When multiple worms are present, they are capable of causing inflammation and distention of the bowel. As a result, canines with roundworms can experience colic and will not absorb needed nutrients from the food they eat.

Diarrhea is a common symptom of an infection, but more serious problems can occur. Canines with roundworms often have a potbellied appearance and an unhealthy coat.

Roundworms pass large numbers of microscopic, round eggs in the feces of the infected dogs. If these eggs are spread in an environment conducive to infestation, they will mature and become ready to infect the next animal. Humans, most commonly children, can become afflicted by the *Toxocara canis* larval stage by accidentally ingesting soil or feces containing roundworm eggs. In people, the larvae can migrate through the eyes and other important organs, leading to vision impairment or other serious illnesses.

**Diagnosis:**

Diagnosis is established by obtaining a fresh fecal sample and identifying the characteristic eggs under the microscope. This procedure is called a fecal floatation examination.

**Prognosis:**

Animals that get proper medical treatment have a good prognosis. Although uncommon, roundworms can cause fatal disease in young puppies if they obstruct the bowel or cause damage when migrating through organs like the lungs or liver.

**Transmission or Cause:**

Transmission of roundworms to puppies can occur through various methods. Most commonly, however, infection occurs from an infected mother passing the roundworms to the unborn puppies through the placenta. Young animals can also get roundworms from the milk while nursing. Additional causes are the ingestion of infective eggs in the environment or prey that harbor the parasite.

**Treatment:**

Treatment entails deworming the pregnant dog multiple times starting in the third trimester (day 42 of pregnancy) through the second week of lactation. Puppies also will need to be treated with a dewormer that is safe for young animals. Safe and effective deworming medications such as fenbendazole or pyrantel pamoate will eliminate a large percentage

of the roundworm eggs.

Puppies should be treated for worms soon after birth and every two weeks thereafter until the animal is 12 weeks of age. Treatment schedules vary based on the environment and the degree of worm infestation. The examining veterinarian can recommend the most safe and effective drug, dose, and schedule for an individual mother and puppies. Use caution if purchasing over-the-counter dewormers since many do not eliminate all of the types of roundworms that can infect a dog.

**Prevention:**

The mother dog should be dewormed during her pregnancy and period of lactation; the use of a treatment such as fenbendazole eliminates 99 percent of the roundworm larvae that infect puppies. Puppies, too, must receive treatment on a regular schedule shortly after birth.

Additional preventive measures include keeping the animal's environment clean of feces. Dogs should be monitored to ensure that they do not consume feces or hunt and ingest prey.

To prevent the potential for human health hazard, pet owners should dispose of dog feces deposited in yards, parks, and playgrounds. Strict hygiene is critical in preventing humans from being infected. Wearing gloves when gardening or working in areas that can be contaminated with eggs, covering sandboxes when not in use, and washing hands thoroughly prior to preparing and eating food are all important measures in maintaining hygiene and preventing disease. In addition, parents should ensure that children do not play in potentially infected areas.