



## CANINE ROUNDWORM INFECTION

Roundworms (nematodes or Ascarids) are intestinal parasites that live freely in the intestine, feeding off of partially digested intestinal contents. Their name is derived from the tubular or “round”.

*Toxocara canis* and *Toxascaris leonina* are two important species of roundworms in dogs. *Toxocara canis* causes more significant disease and **also may be transmitted to humans**.

### ***How did my dog get roundworms?***

Microscopic eggs are passed from infected dogs in the feces. These eggs are ingested by sniffing or licking infected feces. They are also spread by other animals such as rodents and birds. In these animals, the roundworms are merely transported. They do not mature into adults, but if this intermediate or transfer host is eaten by a dog, completion of the life cycle will occur and the dog can become infected.

In the dog, the roundworm undergoes a complicated life cycle before mature roundworms are found in the intestines. This involves several stages and also migration through various tissues. Roundworm larvae (immature worms) can encyst in the host’s tissues. This is important in the female dog because these encysted larvae will start to develop and ultimately cross the placenta into an unborn puppy. Thus puppies can be born with roundworms and can pass fertile eggs from adult worms in their stools by the time they are approximately **eleven days old**.

Other roundworm larvae enter the mother’s mammary glands and are transmitted by the milk.

### ***Are roundworms a threat to my dog?***

Roundworms are most threatening to puppies. The most common effect of roundworms is growth reduction. Since roundworms feed off of partially digested food, they rob the growing puppy of vital nutrients. These puppies often have a characteristic “pot-belly” that is due to the growing roundworms rather than a growing abdomen.

The life cycle of *Toxocara canis* is more complicated than that of other nematode worms found in dogs. Roundworm larvae swallowed by adult dogs usually encyst in the dog’s tissues. Few roundworms will mature in the intestines. Consequently few eggs are passed in the stool leading to difficulty in definitive diagnosis and treatment.

### ***How are roundworms diagnosed?***

In puppies we consider clinical signs such as stunted growth, potbelly, and recurrent diarrhea as a good indication of roundworm infection. Definitive diagnosis is made by microscopic examination of the dog’s feces.

### ***Is it true that children can get roundworm infections?***

If the infected eggs of *Toxocara canis* are swallowed by people, the larvae can invade the tissues and become encysted in various organs. Humans act like any other intermediate or transfer host. If a large number of infected eggs are ingested, clinical disease may become

apparent. This is particularly important if children are infected with roundworms.

As many as 10,000 cases of roundworm infection in humans have been reported in one year in the United States. Children, in particular, are at risk for health problems should they become infected. A variety of organs may be affected as the larvae migrate through the body.

Very rarely, liver problems may result from heartworm larval migration (visceral larval migrans). Even less commonly, the larvae can migrate to the eye and cause blindness (ocular larval migrans).

### ***What is the treatment?***

Treatment is simple and effective. There are many safe and effective preparations available to kill roundworms in the intestine.

In addition, most heartworm preventives are also effective against intestinal roundworms and help prevent future infections.

Unfortunately, the majority of preparations available today kill only the adult worms and do not affect migrating or encysting larvae. It is therefore important that repeated treatments are administered. We will advise you on the best treatment and prevention plan for your pet.

### ***What about roundworm eggs shed in the environment?***

Initially the eggs are not infective. After a period, which may vary from weeks to months, the eggs develop into infective larvae (L2). Under ideal conditions, this takes approximately four weeks. These infective larvae can remain viable in the environment for a considerable time and are particularly resistant to changes in temperature and humidity.

The best environmental treatment is prevention. Remove your dog's feces as soon as possible to prevent the spread and transmission of roundworms.

### ***What is the most effective strategy I can use to control infection in my dogs, protect my family and reduce contamination of the environment?***

1. Deworm pregnant dogs in late pregnancy, after the 42<sup>nd</sup> day. This will help reduce potential contamination of the environment for newborn puppies.
2. Puppies should be dewormed at about two weeks of age and repeated regularly. We will design a deworming and vaccination schedule for your pets.
3. Adult dogs are susceptible to re-infection with roundworms throughout their lives. Routine deworming and prevention is important. Year-round monthly heartworm preventives that also protect against the common intestinal parasites for all dogs should be given consistently.
4. Rodent control is important since rodents can serve as a source of infection.
5. Dogs should be restrained from defecating in children's play areas, and there should be prompt disposal of all dog feces, especially in gardens, playgrounds and public parks.
6. Practice strict hygiene particularly with children. Do not allow them to play in potentially contaminated environments.