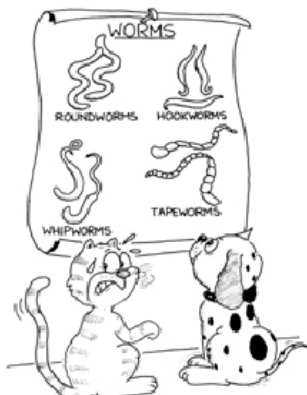


## Roundworm Infection in Dogs

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Roundworms (*nematodes* or *ascarids*) are parasites that live freely in the intestine, feeding off of partially digested intestinal contents. Their name is derived from their tubular or "round" shape.

*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?

Infected dogs shed the microscopic roundworm eggs in their feces. Other dogs may become infected by sniffing or licking infected feces. Roundworm eggs can also be spread by other animals such as rodents, earthworms, roaches and birds. In these animals, the roundworms are merely transported, and do not mature into adults; if a dog eats this "paratenic" host, the roundworm is liberated and completes its maturation.

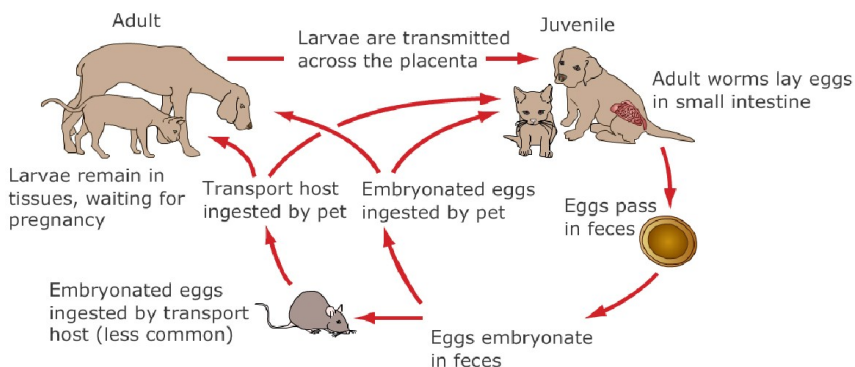
"In the dog, the roundworm undergoes a complicated life cycle."

In the dog, the roundworm undergoes a complicated life cycle before mature roundworms are found in the intestinal tract. This involves several stages and includes migration through various bodily tissues. Roundworm larvae (immature worms) can migrate and encyst throughout the host's body. This is important in the female dog because these encysted larvae will start to develop during pregnancy 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. Roundworm larvae may also enter the mother's mammary glands and be transmitted through the milk.

### Are roundworms a threat to my dog?

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Roundworms are most threatening to puppies. The most common consequence of roundworms is growth reduction. Since roundworms eat partially digested food in the intestinal tract, if there is a large burden of roundworms they will rob the growing puppy of vital nutrients.



The life cycle of *Toxocara canis* is more complicated than that of other nematode worms found in dogs. Roundworms can complete their life cycle in immature dogs, but as the pup's immune system matures (usually by 6 months of age), the larval stages will become "arrested" or encyst in the pup's muscles. Roundworm larvae swallowed by adult dogs usually encyst in the dog's tissues. Few roundworms will mature in the bowel of infected adult dogs. Consequently few eggs are passed in the stool leading to difficulty in definitive diagnosis and treatment.

In intact female dogs, encysted *Toxocara canis* larvae can resume development after estrus, and she can shed eggs in the stool at that time. With dogs that have been spayed or castrated, development of a roundworm infection may indicate that there is an underlying immune system disease that has allowed the encysted larvae to complete their life cycle.

*Toxascaris leonina* can complete their life cycle in any age of dog, or in cats.

## How are roundworms diagnosed?

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In puppies, clinical signs such as stunted growth, potbelly, and recurrent diarrhea are 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 infective 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 *paratenic* or accidental host. If a young child ingests a large number of infected eggs, clinical disease may become apparent.

Very rarely, liver problems may result from roundworm larval migration (visceral larval migrans). Even less commonly, the larvae can migrate into the eye and cause blindness (ocular larval migrans). Because of the risk of roundworm infection in humans, it is recommended by the Centers for Disease Control (CDC) that all dogs be de-wormed monthly. Modern monthly heartworm preventives also prevent roundworm infections and are highly recommend for all dogs and cats.

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## How are roundworms treated?

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

Many heartworm preventives contain medications that are effective against intestinal roundworms help prevent future infections. Some of these preparations only the adult worms and do not affect migrating or encysting larvae. New products have recently been developed that will also affect the larval stages. Your veterinarian 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. Under ideal conditions, this takes approximately four weeks. These infective larvae can remain viable in the environment for long periods of 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?

Deworm pregnant dogs in late pregnancy, after the 42nd day or after six weeks of pregnancy. This will help reduce potential contamination of the environment for newborn puppies.

All puppies should be dewormed routinely, starting at about two weeks of age and repeated regularly. Your veterinarian will design the most appropriate deworming schedule for your pets.

The use of a heartworm preventative product that is effective against roundworms will stop the shedding of eggs into the environment.

Rodent control is important since rodents can serve as a source of infection.

Dogs should be prevented from defecating in children's play areas and there should be prompt disposal of all dog feces, especially in gardens, playgrounds and public parks.

**"Practice strict hygiene particularly with children."**

Practice strict hygiene particularly with children. Do not allow them to play in potentially contaminated environments and ensure proper and frequent hand washing.