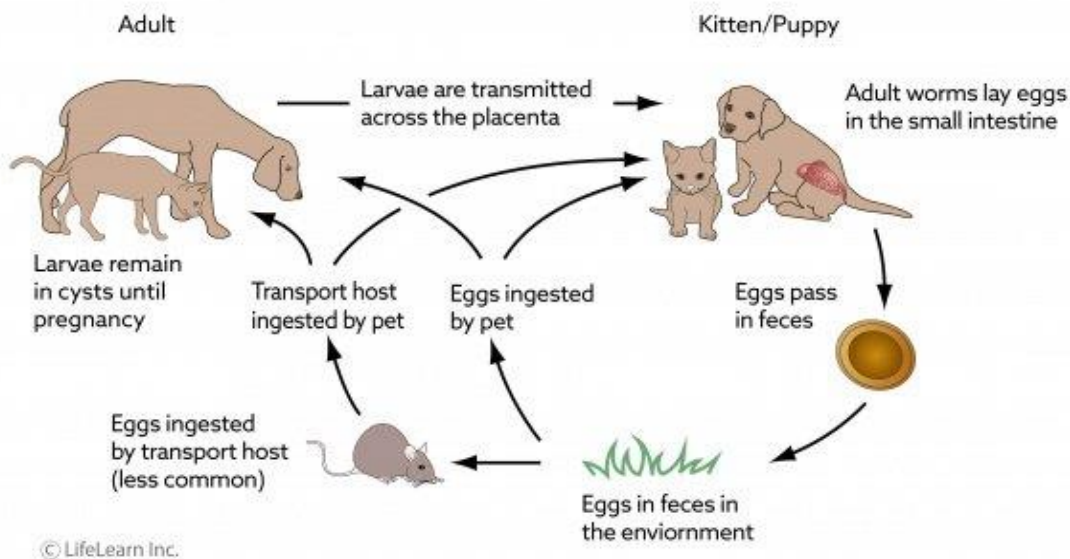


## Bridgeport Veterinary Hospital

# Roundworms

Roundworms (also known as 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. Roundworms are the most common gastrointestinal worm found in the dog.



**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, cockroaches, and birds. In these animals, the roundworms are merely transported, and do not mature into adults; if a dog eats this **paratenic host** (an accidental transport host), the roundworm is able to continue its lifecycle.

"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 become enclosed in a **cyst** in the tissue of 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. 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 passed to the puppies through the milk. Dogs are most commonly affected by roundworms as puppies.

## Are roundworms a threat to my dog?

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

"The most common consequence of roundworms is growth reduction."

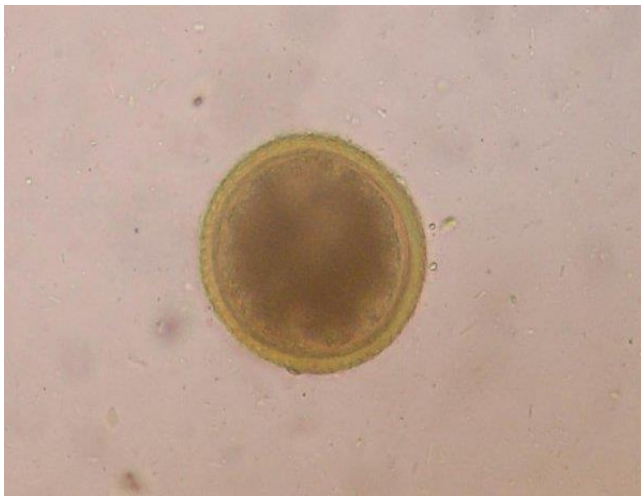
The life cycle of *Toxocara canis* is more complicated than that of other nematode worms found in dogs. Roundworms can complete their life cycle in immature dogs, but as the pup's immune system matures (usually by 6 months of age), the larval stages of the roundworm will become **arrested** and will encyst (become enclosed in a cyst) in the pup's muscles. They can remain encysted in the dog's tissues for months or years. Roundworm larvae swallowed by adult dogs usually encyst in the dog's tissues with

very few roundworms maturing into adults in the bowel of the dog. As a result, very few eggs are passed in the stool leading to difficulty in diagnosis and treatment.

In an intact female dog, encysted *Toxocara canis* larvae can resume development after estrus (heat), and she can shed eggs in the stool at that time. With dogs that have been spayed, 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 dogs of any age.

## How are roundworms diagnosed?



In puppies, clinical signs of a roundworm infection include stunted growth, potbelly, and recurrent diarrhea. A definitive diagnosis is made by microscopic examination of the dog's feces. To diagnose roundworm infection, a small amount of the dog's stool is mixed in a special solution that causes the eggs to float to the top of the solution. The sample is covered with a glass slide on which the floating eggs will collect, and the slide is examined under a microscope. This is called a fecal floatation.

"In puppies, clinical signs such as stunted growth, potbelly, and recurrent diarrhea are a good indication of roundworm infection."

You may also occasionally find adult roundworms in your dog's feces or vomit.

## 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.

"Because of the risk of roundworm infection in humans, the Centers for Disease Control (CDC) recommends that all dogs be dewormed monthly."

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, the Centers for Disease Control (CDC) recommends that all dogs be dewormed monthly.

## 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 monthly heartworm preventives contain medications that are effective against intestinal roundworms and help prevent future infections. Some of these preparations kill 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 are able to survive 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 preventive product that is effective against roundworms will stop the shedding of eggs into the environment.

"Practice strict hygiene particularly with children."

- 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. Do not allow them to play in potentially contaminated environments and ensure proper and frequent hand washing.