

## **CANINE HOOKWORM INFECTION**

### ***What are hookworms?***

Hookworms are parasites which get their name from the hook-like mouth parts they use to attach to the intestinal wall. They are only about 1/8" (3 mm) long and so small in diameter that you have to be looking very carefully to see them. Despite their small size, they suck large amounts of blood from the tiny vessels in the intestinal wall. A large number of hookworms can cause anemia. This problem is most common in puppies, but it will occasionally occur in adult dogs. In general, dogs tend to harbor very few hookworms compared to the number carried by infected dogs.

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

Dogs may become infected with hookworms by four routes: orally, through the skin, through the mother's placenta before birth, and through the mother's milk.

A dog may become infected when it swallows hookworm larvae (immature worm). The larvae may also penetrate the skin and migrate to the intestine to mature and complete its life cycle. If a pregnant dog has hookworms, the pregnancy may reactivate larvae. These larvae will enter the female's circulation and pass to the puppy through the placental blood flow. Finally, puppies may become infected through the mother's milk. This is considered to be an important route of infection for puppies.

### ***What kinds of problems do hookworms cause for my dog?***

The most significant problems appear related to intestinal distress and anemia. Blood loss results from the parasites sucking blood from intestinal capillaries. The presence of pale gums, diarrhea, or weakness might suggest the need to specifically determine the dog's red blood cell count. Some dogs experience significant weight loss, bloody diarrhea, or failure to grow properly with hookworm infection.

Skin irritation and itching can be one of the common signs of a heavily infested environment. The larvae burrow into the skin and cause the dog a great deal of itching and discomfort.

### ***How is hookworm infection diagnosed?***

Hookworms are diagnosed with a microscopic examination of a small stool sample. Since there are so many eggs produced on a daily basis, they are rather easily detected. One adult female hookworm is reported to produce as many as 20,000 eggs a day!

In puppies, large numbers of worms usually must be present before eggs are shed into the stool. For this reason, fecal examination may be less reliable in very young puppies than in adult dogs.

### ***How are the hookworms treated?***

There are several very effective drugs that will kill hookworms. These are given by injection or orally and have few, if any, side-effects. However, these drugs only kill the adult hookworms. Therefore, it is necessary to treat again in about 2-4 weeks to kill any newly formed adult worms that were larvae at the time of the first treatment.

A blood transfusion may be necessary in some dogs because of the rather severe anemia which can be produced.

Since the dog's environment can be laden with hookworm eggs and larvae, it may be necessary to treat it with a chemical to kill them. There are some available that are safe to use on grass.

### ***Are canine hookworms infectious to people?***

Adult hookworms do not infect humans; however, the larvae can burrow into human skin. This causes itching, commonly called ground itch, but the worms do not mature into adults. Direct contact of human skin to moist, hookworm infested soil is required. Fortunately, this does not occur very often if normal hygiene practices are observed.

In rare instances, the canine hookworm will penetrate into deeper tissues and partially mature in the human intestine. A few reports of hookworm enterocolitis (small and large intestinal inflammation) have occurred in the recent past.

### ***What can be done to control hookworm infection in dogs and to prevent human infection?***

1. All pups should be treated at 2-3 weeks of age.
2. Prompt deworming should be given when parasites are detected; periodic deworming may be appropriate for pets at high risk for reinfection.
3. Prompt disposal of dog feces should occur, especially in yards, playgrounds, and public parks.
4. Strict hygiene is important, especially for children. Do not allow children to play in potentially contaminated environments.
5. Nursing females should be treated concurrently with their pups; nursing may reactivate infection in the female.
6. Most heartworm prevention products contain a drug that will prevent hookworm infections. However, these products will not kill the adult hookworms, so dogs must be treated for adult hookworms first.