



What is a hookworm?

Hookworms are small worms less than an inch long that can inhabit the intestinal tract of dogs.

Are they dangerous?

They can be to young puppies and debilitated dogs that are not under treatment. A healthy adult Greyhound on an appropriate parasite control program will generally not be affected by a low population of worms.

Will I see the worms in my Greyhound's poop?

No, first, they are very small and thin, secondly, the eggs of the worm are generally what is passed, and they are microscopic.

How are hookworms passed from one dog to another?

Hookworm eggs are passed in the feces, and under warm, moist conditions hatch into larvae **after several days**. These larvae have several ways they can infect dogs:

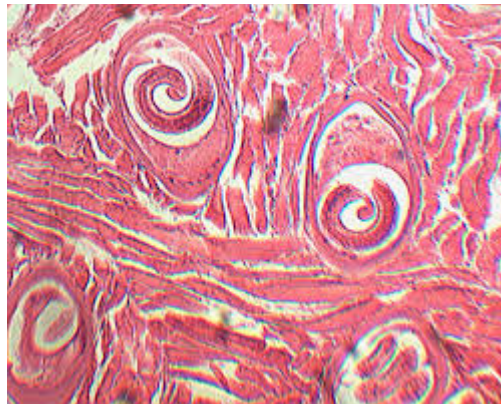
- They can be ingested directly, as when dogs lick the ground or groom themselves when larvae are present on their fur.
- They can migrate through the skin, usually through the belly or paws.
- They can be ingested by another animal such as a rodent, and then ingested by a dog that eats that infected animal.
- Puppies can also be infected by larvae present in the mom's milk.

What happens when the larvae get into my Greyhound?

Once the hookworm larvae get into a dog, they may develop into adults in the intestines or they may migrate through the tissues of the body to the lungs, from where they are coughed up and swallowed, and then finally develop into adults in the intestines. Migrating hookworm larvae commonly enter a dormant state within in body tissues and can become mobile again later.

There are several other questions and answers that will explain why hookworms are such a persistent problem in Greyhounds.

The explanation lies in the phenomenon known as **LARVAL LEAK SYNDROME**



Why do some larvae become dormant, sometimes referred to as encysted, in the tissues of dogs?

It's probably a self-preservation thing. Hookworms find a way to increase their survival by their larvae becoming dormant in the tissues.

Why are Greyhounds more affected by larval leak than other dogs?

No one knows, but we can speculate that there are many thousands of encysted larvae in a Greyhound affected by larval leak syndrome.

So, what about wormers, don't they kill the larvae?

No, wormers called anthelmintics, do not kill the larvae.

Are wormer's effective against the adult hookworms in the intestine?

Yes, wormers are highly effective in ridding the intestines of adult hookworms. The two most common Panacur and Nemex have a very high rate of efficacy.

Are there any other products or substances that kill adult worms or larvae?

Ivermectin can kill adults but has no effect on the larvae.

I've heard that there are some other "things" that can be given to dogs to get rid of their worms.

There are no known substances that kill hookworm adults other than the wormers that are labeled for this use. There are no medications or other products that kill hookworm larvae.

So, if my Greyhound is afflicted with larval leak and has many encysted larvae can I ever get rid of hookworms?

Maybe and maybe not. An important characteristic of the encysted larvae is that while they are not killed by any wormers, they are activated by those wormers, and are stimulated to complete their cycle by making their way to the intestine and developing into adult worms. If, after many worming's and the administration of monthly products containing anthelmintics, the supply of encysted larvae is exhausted by becoming activated and killed as adult worms, a Greyhound can become hookworm free. In this case the larvae may be eliminated from the tissues. Unfortunately, sometimes the population of encysted larvae is never exhausted.

So, what about fecal exams. Are they reliable?

In general, yes, but there are some problems?

- Laboratory error can occur for a variety of reasons. This usually results in a false negative.
- There can be a unisex population in the intestines that will not result in the production of eggs.
- The worm "load" can be very low at times resulting in a very few eggs produced.
- The intestines may have been rid of adult worms, but the intestines have not yet been repopulated by the larvae.

Is there anything that can make a fecal exam more accurate?

Yes, if the fecal sample is sent to a lab that runs ELISA testing, a very sensitive test, all but the last of the problems listed above can be eliminated.

In other words, if the small intestine has not been repopulated by adult worms from the larvae in the tissues, the fecal will be negative and subsequent fecals may be positive.

Can hookworms infect people?

Hookworms are considered a zoonotic disease meaning that they can affect people. But there are several points that need to be made regarding human infection with hookworms.

- Adult worms do not develop in the intestinal tract of humans.
- The larvae can migrate in human tissues, but humans are considered a dead-end host meaning the life cycle can not be completed in a person.
- There are two ways that larvae can get into a person. One is through fecal oral transfer (yuck). The other way is through penetration of bare skin by infective larvae. This can cause a local rash as the “lost” larvae migrate in the tissue where they entered. It is rare and easily treated. It is called cutaneous larval migrans.

So, what is your recommendation for at least controlling hookworms in my Greyhound?

I recommend 4 things:

- Start your Greyhound on Advantage Multi as soon as possible. Advantage multi is an excellent heartworm, flea, and intestinal parasite treatment.
- For a two-month period give your Greyhound a wormer, such as Panacur, as directed by your veterinarian.
- Pick up the poop ASAP. Remember it takes a few days for the eggs to “hatch” into infective larvae. Pay particular attention to moist areas.
- Have regular fecal tests, preferably ELISA run on you Greyhound’s poop.

So, what’s so good about Advantage Multi?

There are several products on the market that are used to prevent heartworm (a mosquito born disease.) Some of these products are also labeled as flea and tick preventatives and some have a labeling for some intestinal parasites including hookworms. The efficacy of Advantage Multi against hookworms comes from my research into the problem where I

discovered information provided by Dr. Craig Datz. Dr. Datz is a professor at the University of Missouri in the Department of Veterinary Medicine and Surgery with expertise in parasitic diseases. He states that Advantage Multi maintains therapeutic blood levels against hookworms throughout the month, rather than for only a few days after administration, as with the other products. The only problem I see with Advantage Multi is that it has no effect on ticks. So, if tick control is necessary, another product will need to be added.



The Bottom Line

1. If you want to foster or adopt a Greyhound think about whether you want to reject the individual just because it may be afflicted with larval leak.
2. The public health concern is there, but in most cases, it is easily avoided by using the above methods.
3. There are many cases where negative hookworm dogs coexist with larval leak dogs for years without becoming infected.
4. Use infectious disease preventative products as directed by your veterinarian.
5. Have regular fecal checks on your Greyhound to know the hookworm status.
6. Pick up the poop as soon as you can before any eggs that may be present have a chance to develop into infective larvae.
7. Try to keep your Greyhound from eliminating in moist areas like watered grass and keep children away from Greyhound poop.

Finally, be wary of what you read on the internet. Please take note of the source that supplied the information. While the internet can a wonderful source of information, much of it is unreliable. Dr. Google is fraught with half-truths, misinformation, and alarmist statements.

Most of all. Enjoy your Greyhound!

Craig A. Nausley DVM