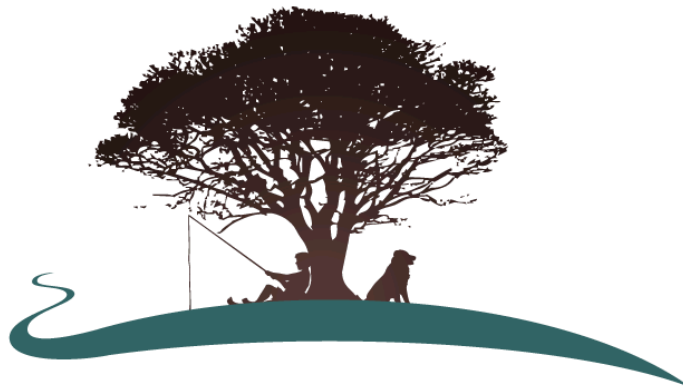


# 7 REASONS YOUR DOG NEEDS HEARTWORM PREVENTION

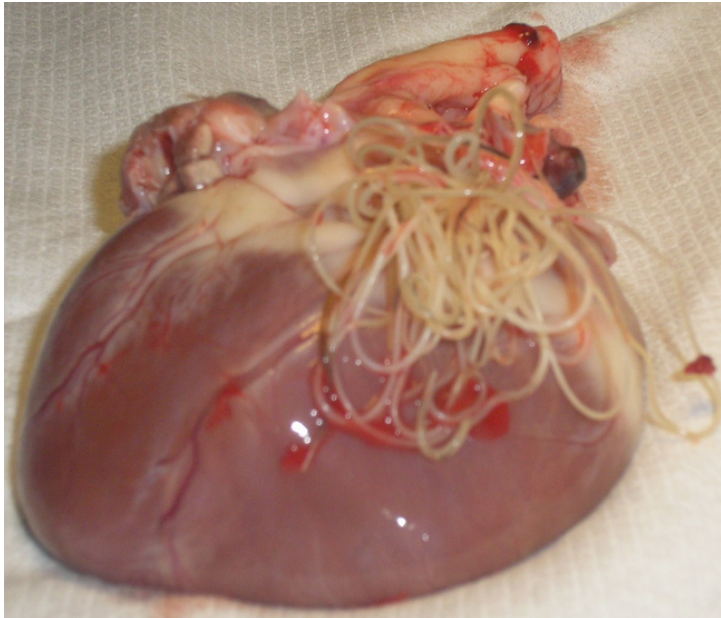
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## Reason #1



**What you DON'T want your dog's heart to look like.**

## What is Heartworm Disease?

We are always talking about heartworm, but what exactly is it? Heartworm disease is a serious and potentially fatal disease in pets in the United States and many other parts of the world. It is caused by foot-long worms (heartworms) that actually live in the heart, lungs and associated blood vessels of affected pets. This causes severe lung disease, heart failure and damage to other organs in the body. Heartworm disease affects dogs, cats and ferrets, but heartworms also live in other mammal species, including wolves, coyotes, foxes, sea lions and—in rare instances—humans. Because wild species such as foxes and coyotes live in close proximity to many pet owners, they are considered important carriers of the disease.

The dog is a natural host for heartworms, which means heartworms that live inside the dog mature into adults, mate and produce offspring. Right inside your dog's heart! If untreated, their numbers can increase, and dogs have been known to harbor several hundred worms in their bodies. As you can imagine, this doesn't leave a lot of room for the heart to do its normal functions. Heartworm disease causes lasting damage to the heart, lungs and arteries, and can affect your dog's health and quality of life long after the parasites are gone. That is, if you find out he has them before they do him in. For this reason, prevention is by far the best option, and treatment—when needed—should be administered as early in the course of the disease as possible.

## Reason #2:



We've got these around here.

## How Can My Dog Get Heartworms?

Heartworms can only be transmitted from animal to animal by mosquitoes. Heartworms are a potential threat in every state as well as in many other countries around the world. All dogs, regardless of age, gender, or living environment, are susceptible to heartworm infection. Because heartworms are spread by mosquitoes, any pet with exposure to mosquitoes should be tested. This includes indoor pets that only go outside occasionally.

The mosquito plays an essential role in the heartworm life cycle. Adult female heartworms living in an infected dog, fox, coyote, or wolf produce microscopic baby worms called "microfilaria" that circulate in the vessels with the blood. When a mosquito bites an infected dog and takes a blood meal, it picks up these baby worms, which develop and mature into the "infective stage" larvae over a period of 10 to 14 days inside the mosquito. Then, when the infected mosquito bites another dog, cat, or susceptible wild animal, the infective larvae are deposited onto the surface of the animal's skin and then enter into the new animal's body through the mosquito's bite wound. Once inside this new host, it takes approximately 6 months for the larvae to mature into adult heartworms. Once mature, heartworms can live for 5 to 7 years in dogs and up to 2 or 3 years in cats. Because of the long life span of these worms, each mosquito season can lead to higher numbers of worms in an infected pet.

## Reason #3:



You don't want your dog to look like this (heart failure due to heartworms).

## What are the Signs of Heartworm Infection?

Early in the disease, many dogs show few symptoms or no symptoms at all. At first, the larval stages of the worm are only in the tissues of the body, not the blood vessels. Until the worms have become adults and migrate into the lungs and get inside the bloodstream, you may not notice anything. The longer the infection persists, the more likely symptoms will develop. Very active dogs, dogs infected with many heartworms, or those with other health problems often show pronounced clinical signs.

Signs of heartworm disease may include a mild persistent cough, not wanting to exercise, tiring easily after moderate activity, decreased appetite, or weight loss. As heartworm disease gets worse, dogs may develop heart failure and the appearance of a swollen belly due to fluid building up in the abdomen. Dogs with large numbers of heartworms can develop sudden blockages of blood flow within the heart leading to a life-threatening form of cardiovascular collapse. This is called caval syndrome, and is marked by a sudden onset of labored breathing, pale gums, and dark bloody or coffee-colored urine. Without prompt surgical removal of the heartworm blockage, few dogs survive.

## What Else Does Heartworm Prevention Treat?

Depending on the brand of heartworm prevention you use, internal parasites may also be killed. These include roundworms, hookworms and tapeworms. This is an important reason why your dog should be on heartworm prevention year-round. This is also a good reason to take a look at the type of prevention you are using and be sure you have one that includes a good, broad-spectrum dewormer. If it doesn't, think about changing brands or adding in a complementary deworming medication.

### Reason #4:



**No thanks on the spaghetti poop.**

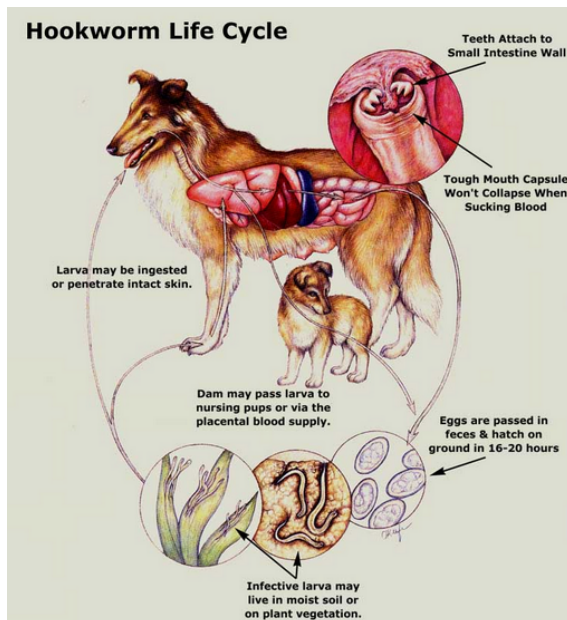
### Roundworms:

Dogs can become infected with roundworms by eating worm eggs from a contaminated environment, eating other animal hosts that have consumed worm eggs and now have worms in their tissues, and with some worms, drinking larvae in the milk of an infected mother. Puppies can also be infected *before* they are even born, through the placenta from their mother! These worms are very good at getting inside your dog. The worm eggs can live in

the soil even, and survive for a couple years!

After these nasty guys get inside your dog, they will either stay and grow to adulthood in the small intestines, or the larvae can migrate through the liver and lungs. In the lungs, they will get inside the airways, and your dog will cough them up, swallow them again, and then they set up house and live happily in the intestines. When dogs pass these in the stool, it looks like a bunch of spaghetti. Italian, anyone?

## Reason #5:



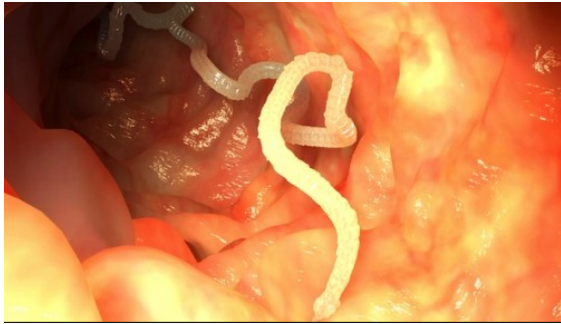
**Your brand-new puppy could even have these.**

## Hookworms:

Dogs become infected with hookworms by eating the third-stage larvae from a contaminated environment, larval penetration of the skin, or ingestion of other animal hosts with infective larvae in their tissues. Dogs may also become infected by eating cockroaches that contain infective larvae. Did you get that second way, larval penetration of the skin?!? The fact that your dog can get hookworms by stepping on the larvae is pretty scary! Just walking outside or in the park, your dog may be exposed. Puppies can also get this worm by drinking milk from a mother who has hookworms.

Once the eggs are inside your dog, entering either by mouth or through the skin, they are on the move. Many will migrate through the body, like the roundworms, to eventually end up in the intestines. Some of the others that entered through the mouth will go directly down to the small intestine, where they attach to the wall and start sucking blood. These worms will grow into adults, mate, lay eggs, and eventually die, all in your dog's gut. Pretty gross!

## Reason #6:



**You don't want to see these come out the other end.**

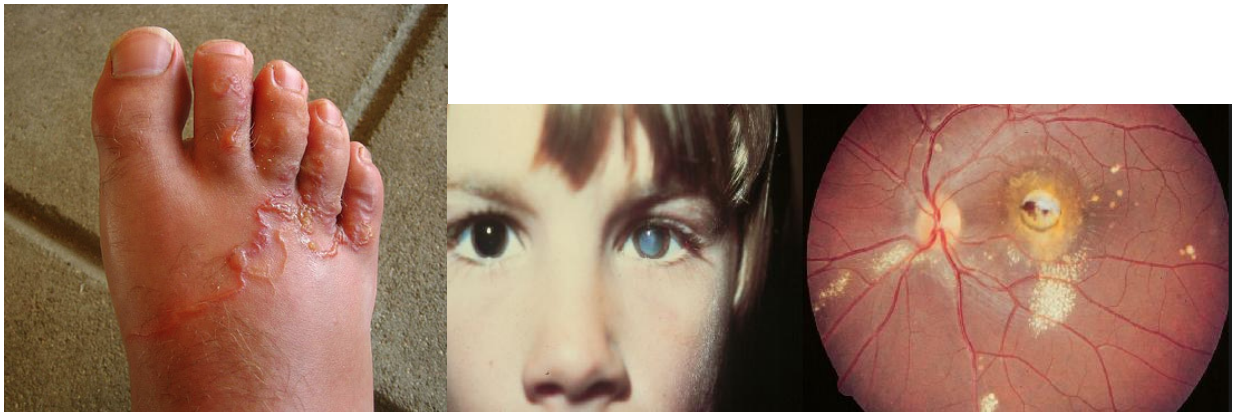
## Tapeworms:

With tapeworms, sometimes you actually see the evidence in infected dogs. Proglottids are little tapeworm segments that fall off the end of the tapeworm, and are passed out with feces or are found around the rear end of infected dogs. These proglottids are about the size and shape of a grain of rice, and are full of eggs. Dogs can get tapeworms by ingesting fleas, lice, rabbits, rodents, or innards of sheep, cattle, goats, deer or elk. In short, there are lots of ways they are exposed to these parasites.

The adult worms live in the small intestine, and rarely cause disease. Sometimes the proglottids will cause irritation around the rear end, and you may see your dog "scoot" his or her bottom on the carpet. Basically like scratching an itch. But then you may find one of those proglottids on the floor... and that changes everything.

With all these internal parasites, roundworms, hookworms and tapeworms, the whole goal of the worm's life is to reproduce. So basically, from adult worms in your dog's intestines, eggs are released and passed into the environment. There they are consumed by some other creature. Some worms need an intermediate host, which is another species between rounds of infection in your dog. Inside this host, the eggs become infective, and when that animal is eaten by a dog, the dog becomes infected by that particular worm. Other worm species do not need this intermediate host, and can just keep re-infecting your dog.

## Reason #7:



## **Now do you see why we worry about these worms?**

Not only is your dog's health at risk, so is the health of your children or grandchildren and yourself. Zoonotic diseases are those which can pass between animals and people. Several of the parasites treated with a simple monthly heartworm prevention pill are zoonotic. Because humans are not the natural host for these parasites, the

larvae wander about through the tissues causing damage, even blindness in the case of ocular larval migrans. Some of these parasites can also end up crawling through the brain and causing increasingly worse neurologic disease. They also have been found in the liver, lungs, and just about everywhere else in the human body. The roundworm *Toxocara* is most common in children, and they are exposed by ingesting eggs from a contaminated environment. Eggs from this worm are commonly found in soil from parks and playgrounds, and the eggs can stay infective for many years. The key to avoiding infections in humans is to control parasites in dogs. So when your vet talks to you about this, they really have *your* health and safety in mind, as well as your dog's. This is why deworming is usually recommended at the first puppy visit, and then monthly with the heartworm prevention. Some tapeworms can cause giant cysts in the abdomen of people, which require surgery, frequent drainage, and sometimes lifelong therapy with worm killing medicine. It has been estimated that 50% of the world population has been infected with roundworm. So this is a very real public health concern.

Testing your dog for heartworm is a simple blood test. Usually this is run right in your vet's office, and takes about 15-20 minutes to get results. Occasionally, blood will have to be sent out to the lab for a special test, and that could take a day or two. Checking for intestinal worms is a bit trickier, and is a fecal test. There are different ways to check for different parasites in the feces, and your vet should use more than one method to get the best results.

As mentioned earlier, there are different brands of heartworm prevention, and they cover different parasites. We recommend one that also has a broad spectrum dewormer in it. This is the easiest way to assure your dog is worm-free, and you and your family are the most protected. If you aren't sure if the brand of prevention you have covers everything, either read the label or talk to your vet. The prevention tabs are given once a month, and are like a flavored treat. Most dogs will eat them readily. It is important to give your dog the heartworm prevention regularly. Missing a dose or even being several weeks late opens a window for the heartworms to sneak into your dog's body. If you have missed a dose of the prevention or are several weeks late giving it, you should have your dog retested before starting back on it. In areas where heartworm is common or if you have traveled to areas like this, you may need to have another test six months later. The prevention is very good at killing the baby worms, but not so good as they start to mature. It takes about 6 months for the heartworms to be mature enough to show up on the blood tests. If your dog tests positive, there is a treatment protocol to help rid him of the worms. It is an intensive treatment and recovery period, but generally quite successful. Preventing disease is definitely easier than treating, and better for your dog's health, too.

That about takes care of it for internal parasites, and external parasites are a topic for another day!

Now that you are armed with the knowledge of 'why' heartworm prevention is so important, go out there and spread the word! If have any questions, talk to your vet! You can also check out these great resources:

<https://www.heartwormsociety.org> American Heartworm Society

<http://www.cpcvet.org> Companion Animal Parasite Council

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