



HEARTWORM DISEASE & TREATMENT

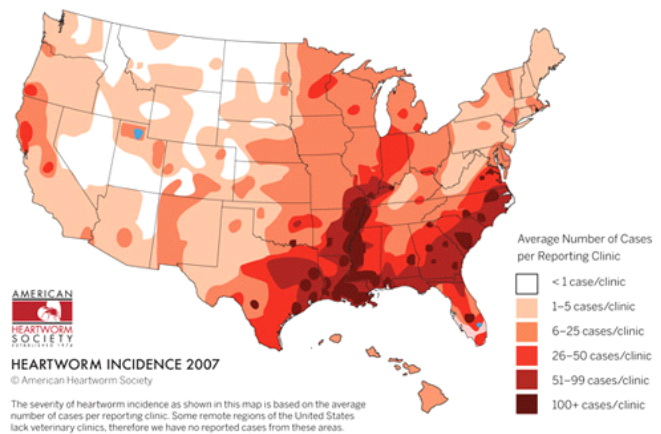
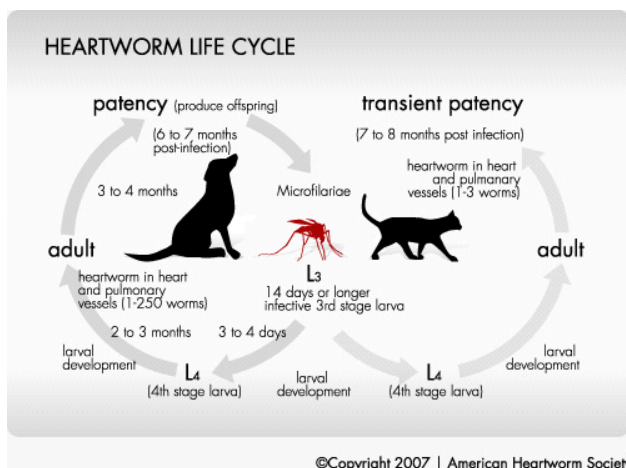
Heartworm disease is a serious, even potentially deadly condition caused by parasitic worms living in the arteries of the lungs and in the right side of the heart of dogs (and several other mammals including cats) that is spread only by mosquitoes. Fortunately, heartworm disease can easily be prevented by medications available through veterinarians.

What Are the Signs of Heartworm Disease?

For both dogs and cats, clinical signs of heartworm disease may not be seen in the early stages. As the number of heartworms in an animal tends to accumulate over a period of months or years and after repeated mosquito bites, the signs of heartworm disease become more obvious.

Dogs that have been only recently infected may not exhibit any signs of the disease at all, while heavily infected dogs may eventually show clinical signs, including a mild, persistent cough; reluctance to move or exercise; fatigue after only moderate exercise; reduced appetite and weight loss. As the disease becomes more progressed, there can be significant changes in the liver, which can lead to leakage of fluid into the abdominal (belly) cavity.

In dogs, adult heartworms *can live 5 to 7 years* in the heart and lungs !



How Do You Detect Heartworm Disease?

Heartworm infection is detected with a blood test, although the presence of heartworms cannot be detected until about seven months after infection has occurred.

Occasionally, heartworm infection can be detected through ultrasound and/or x-ray images of the heart and lungs, although these tests are usually used in animals already known to be infected.

Prevention

Heartworm prevention is safe, easy and inexpensive. While treatment for heartworm disease in dogs is possible, it can be a complicated and expensive process, taking weeks for infected animals to recover. There is no effective treatment for heartworm disease in cats, so it is imperative that disease prevention measures be taken for cats.

There are a variety of options for preventing heartworm infection in both dogs and cats, including (1) once-a-month chewable tablets, (2) once-a-month topical liquids, and (3) a six-month injectable product (only for dogs). All of these methods are extremely effective, and when given on a timely schedule, heartworm infection can be completely prevented. These medications interrupt heartworm development before adult worms reach the lungs and cause disease.

At Carolina Value Vet, we do not use the ProHeart *injectable* heartworm prevention because of the risk of a reaction. Many dogs have had reactions to the injection, and that can create significant problems for dogs since the product lasts for 6 months once it's injected under the skin.

Treatment

The majority of dogs infected with heartworms can be successfully treated. The goal of treatment is to kill all adult worms with an adulticide as well as kill all microfilaria ("baby heartworms" that live in the bloodstream) with a microfilaricide. Heartworm infected dogs that show no signs or only mild signs have a very high success rate with treatment. Patients with evidence of more severe heartworm disease can be successfully treated, but the possibility of complications is greater.

For dogs, we offer **2 different treatment options:**

- 1) Conservative, slow-kill treatment
- 2) Aggressive, rapid kill treatment

The Conservative, Slow Kill Treatment

The conservative, slow kill treatment of heartworm disease has the significant advantage of being far less expensive than the aggressive form of treatment. The downside is that it may take several months to a couple of years (or more) before the adult heartworms are eliminated ... depending on the heartworm burden. And while the heartworms are still in the heart and lungs, they can still cause harmful changes to the circulatory system. Certainly, the earlier in the course of the disease that a dog is diagnosed, the fewer heartworms will be present, and in all likelihood the shorter time it will take to clear the dog of the heartworm infection.

The 'slow kill' treatment simply involves using a monthly heartworm prevention with the active ingredient Ivermectin (we use **either Tri-Heart Plus or IverhartMax**) along with an antibiotic Doxycycline, which reduces the numbers of a bacteria *Wolbachia* that contributes to the lung complications and kidney inflammation associated with heartworm disease. You must NOT use Trifexis or Sentinel with a Heartworm positive dog since there is a significant risk of causing a severe adverse reaction in your pet.

The Aggressive Treatment

The aggressive form of heartworm treatment has the advantage of being able to eliminate the adult heartworms from the heart and lungs in a very short period of time, thereby preventing the continued changes in the dog's heart and lungs and circulatory system.

However, the aggressive treatment can be expensive (costing hundreds of dollars ~ expect a range of \$750 to \$1200); the treatment itself may potentially cause several complications; and the dogs must be severely confined and have very restricted activity for a minimum of 2 months during the treatment.

As mentioned previously, there are 2 steps in the treatment of Heartworm disease in dogs:

- 1) Eliminate the **adult heartworms** that live in the heart and lungs
- 2) Eliminate the **immature heartworms (microfilaria)** that circulate in the bloodstream

To kill the adult heartworms that live in your dog's heart and lungs, we use a very powerful drug called Immiticide. While relatively safe and extremely effective, Immiticide can have very strong side effects. For the safety of your pet, it is advised to treat with 3 doses (give a single dose ... wait one month ... then give 2 doses in 2 days). It is possible to treat dogs with only 2 doses over 2 days, but dogs with a severe burden of heartworm disease must only be treated with the 3 dose treatment.

A crucial part of the Immiticide treatment is 'home care' for your dog following treatment. It is **critical that your dog must not exercise at all for several weeks following Immiticide treatments!** Why ??? Because as the worms are dying from the medication, extreme activity can cause a pulmonary embolism (a life-threatening blood clot in the lungs). We realize that limiting your dog's activity may be difficult, but it is **absolutely essential to the success of our treatment** with Immiticide !

While each clinic may have its own variation to these treatment protocols, the following is a **guideline** of what you can expect. **When getting an estimate for the cost of the heartworm treatment, be sure to find out exactly what is ... and what is not ... included.** We do not offer the aggressive treatment.

3-Dose Treatment

- Less risk / Safer for your Dog
- More expense

Step 1

- Complete Blood Count & Blood Chemistry Panel
- X-Ray of the chest
- Begin with Doxycycline treatment (pills)
- Possible Cortisone to reduce inflammation

Step 2

- 1 night Hospitalization
- 1 treatment with Immiticide
- Initiate treatment with heartworm prevention
- No activity for 4 weeks !!!

Step 3 (4 weeks after Step 1)

- 2 nights Hospitalization
- 2 treatments with Immiticide (24 hours apart)
- No activity for 4 more weeks !!!

Step 4 (4 weeks after Step 2)

- Re-examination
- May resume normal activity

Step 5 (3 months after step 3)

- Occult Heartworm test (blood sample)

2-Dose Treatment

- More potential health risks to your Dog
- Less expense

Step 1

- Complete Blood Ct & Blood Chemistry Panel
- X-ray of the Chest
- Begin with Doxycycline treatment (pills)
- Possible Cortisone to reduce inflammation

Step 2

- 2 nights Hospitalization
- 2 treatments with Immiticide (24 hrs apart)
- Initiate treatment with heartworm prevention
- No activity for 4 weeks !!!

Step 3 (4 weeks after Step 1)

- Re-examination
- Continue with heartworm prevention
- May resume normal activity

Step 4 (4 weeks after Step 2)

- Occult Heartworm test (blood sample)

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