

## Heartworm Disease in Dogs – Treatment

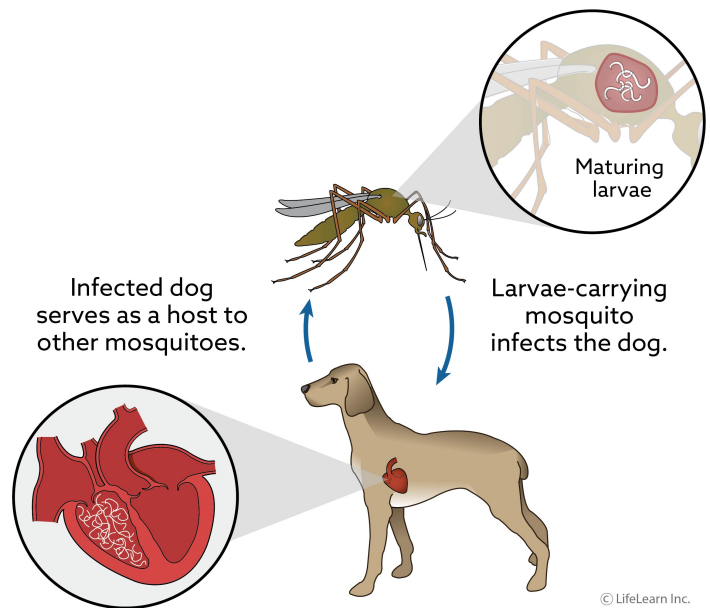
This handout provides information on the treatment of heartworm disease in dogs. For more specific information on the causes, and transmission of heartworm disease in dogs, as well as testing procedures, see the handouts “Heartworm Disease in Dogs” and “Testing for Heartworm Disease in Dogs”.

### What causes heartworm disease?

**Heartworm disease** or dirofilariasis is a serious and potentially fatal disease. It is caused by a blood-borne parasite known as *Dirofilaria immitis*.

Adult heartworms are found in the heart, pulmonary artery, and adjacent large blood vessels of infected dogs. Rarely, worms may be found in other parts of the circulatory system. Female worms are 6 – 14" long (15 – 36cm) and 1/8" wide (3 mm). Males are about half the size of females. One dog may have as many as 300 worms present when diagnosed.

**"Adult heartworms are found in the heart, pulmonary artery and adjacent large blood vessels of infected dogs."**



Adult heartworms may live up to five years. During this time, females produce millions of offspring called **microfilaria**. These microfilariae live mainly in the small vessels of the bloodstream.

### How is heartworm disease spread?

Since transmission requires the mosquito as an intermediate host, the disease is not spread directly from dog to dog. Spread of the disease therefore coincides with mosquito season, which can last year-round in many parts of the United States. The number of dogs infected and the length of the mosquito season are directly correlated with the incidence of heartworm disease in any given area.

### My dog has been diagnosed with heartworm disease. What is the treatment?

There is some risk involved in treating dogs with heartworms, although fatalities are rare.

## "A new drug is available that does not have as many side effects, allowing successful treatment of more than 95% of dogs with heartworms."

In the past, the drug used to treat heartworms contained high levels of arsenic and toxic side effects frequently occurred. A new drug is available that does not have as many side effects, allowing successful treatment of more than 95% of dogs with heartworms.

Many dogs have advanced heartworm disease at the time they are diagnosed. This means that the heartworms have been present long enough to cause substantial damage to the heart, lungs, blood vessels, kidneys, and liver. Rarely, cases may be so advanced that it is safer to treat organ damage and keep the dog comfortable than it is to risk negative effects associated with killing the heartworms. Dogs in this condition are not likely to live more than a few weeks or months. Your veterinarian will advise you on the best treatment approach for dogs diagnosed with advanced heartworm disease.

**Treatment to kill adult heartworms.** An injectable drug, melarsomine (brand name Immiticide®), is given to kill adult heartworms. Melarsomine kills the adult heartworms in the heart and adjacent vessels. This drug is administered in a series of injections. Your veterinarian will determine the specific injection schedule according to your dog's condition. Most dogs receive an initial injection, followed by a 30-day period of rest, and then two more injections that are given 24 hours apart.

Many dogs will also be treated with an antibiotic (doxycycline), to combat potential infection with bacteria (*Wolbachia*) that inhabit the heartworm.

## "Complete rest is essential after treatment."

**Complete rest is essential after treatment.** The adult worms die in a few days and start to decompose. As they break up, they are carried to the lungs, where they lodge in the small blood vessels and are eventually reabsorbed by the body. This resorption can take several weeks to months, and most post-treatment complications are caused by these fragments of dead heartworms. This can be a dangerous period so it is **absolutely essential** that the dog be kept as quiet as possible and is not allowed to exercise for one month following the final injection of heartworm treatment. The first week after the injections is critical because this is when the worms are dying. A cough is noticeable for seven to eight weeks after treatment in many heavily infected dogs. If the cough is severe, notify your veterinarian for treatment options.

Prompt treatment is essential if the dog has a significant reaction in the weeks following the initial treatment, although such reactions are rare. Notify your veterinarian if your dog shows loss of appetite, shortness of breath, severe coughing, coughing up blood, fever, or depression. Treatment with anti-inflammatories, antibiotics, cage rest, supportive care, and intravenous fluids is usually effective in these cases.

**Treatment to kill microfilaria.** In addition to the drug that is used to kill adult heartworms, your dog will receive a drug to kill microfilariae (heartworm larvae). Your dog may need to stay in the hospital for observation on the day this medication is administered, and this may be performed either before or after the injections for adult heartworms. Following treatment, your dog will be started on a heartworm preventative.

## "Newer heartworm treatment protocols use a variety of drugs to kill the microfilariae."

Newer heartworm treatment protocols use a variety of drugs to kill the microfilariae. Your veterinarian will select the correct drug and administration time based on your dog's condition.

## Are any other treatments necessary?

Dogs with severe heartworm disease may require antibiotics, pain relief medications, special diets, diuretics to remove fluid accumulation in the lungs, and/or drugs to improve heart function prior to treatment for the heartworms. Even after the heartworms have been killed, some dogs may require lifetime treatment for heart failure. This includes the use of diuretics, heart medications such as ACE-inhibitors, beta-blockers or cardiac glycosides, and special low-salt diets.

## What is the response to treatment and the prognosis post-treatment?

Dog owners are usually surprised at the improvement in their dog following treatment for heartworms, especially if the dog had been demonstrating clinical signs of heartworm disease. **Many dogs display renewed vigor and vitality, improved appetite, and weight gain.**

## How can I prevent my dog from getting heartworms?

You can prevent your dog from getting heartworms by using a heartworm preventive. When a dog has been successfully treated for heartworms, it is essential to begin a heartworm prevention program to prevent future recurrence. With the safe and affordable heartworm preventives available today, no pet should ever have to endure this dreaded disease. Consult with your veterinarian to determine which heartworm preventive program is best for your dog.

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