

# Understanding & Preventing HEARTWORM Disease

**H**earthworm disease, also known as dirofilariasis, is a serious and potentially fatal illness caused by a blood-borne parasite called *Dirofilaria immitis*. The disease can cause severe lung problems, heart failure, and other organ damage in dogs, cats, and ferrets.

It is unknown exactly how many pets in the United States are infected with heartworm disease each year, but the American Heartworm Society (AHS) estimates that more than 1 million dogs were heartworm-positive in 2016. Although the incidence is highest in southeastern states, no region is immune—heartworm infection is a nationwide problem.

## HOW INFECTION OCCURS

The heartworm life cycle begins when a mosquito feeds on an infected dog, fox, coyote, or wolf and ingests microscopic worms—called microfilariae—that are circulating in the infected animal’s bloodstream. The microfilariae develop within the mosquito for 10 to 14 days, after which they are considered infective larvae.

When an infected mosquito bites a dog, the larvae are deposited into the new host, enter the bloodstream, and travel to the right pulmonary artery. There they mature, mate, and begin producing new microfilariae within about 6 months. Left untreated, heartworms can multiply dramatically over time. Mature heartworms range from 6 to 14 inches in length and can live as long as 7 years in dogs.

Heartworm infection is slightly different in cats, which are atypical hosts. Most worms in a cat’s body do not survive to the adult stage. This does not mean cats are immune to the dangers of infection, however. Although adult infections are much less common in cats, they are especially dangerous. Just 1 or 2 worms can prove fatal and there is no approved treatment. Heartworms can live up to 3 years in cats.

## WHAT YOU MIGHT SEE

Heartworm disease can mimic a number of other illnesses, which makes it particularly hard to detect without testing. In most cases, cats and dogs will not show any signs of heartworm infection until several

months after becoming infected. Even then, the signs of infection may be subtle or absent.

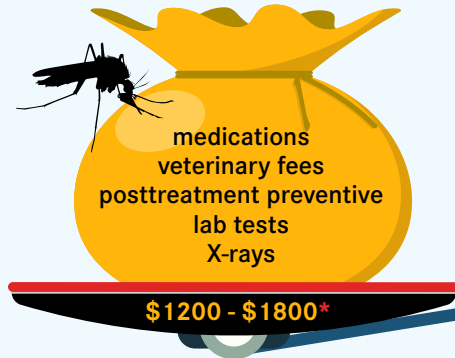
Common signs of heartworm disease in dogs include decreased appetite, difficulty breathing, fainting, fatigue after moderate activity, lethargy, mild or persistent coughing, and weight loss. Dogs infected with a large number of heartworms can also experience sudden blockage of blood flow within the heart. This can lead to an advanced, life-threatening form of the disease that requires immediate surgery.

Infection with immature heartworms in cats may cause coughing, lethargy, loss of appetite, nausea, vomiting, or wheezing. As heartworms mature, signs may be exacerbated and include blindness, confusion, palpitations, and seizures. Sudden death may occur in some cats due to a reaction within the lungs to the young heartworms or obstructed blood flow to the lungs.

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## Heartworm Treatment



When you weigh the costs of heartworm treatment versus prevention, it's clear that prevention makes the most "cents."

## Heartworm Prevention



\* Average cost for a 40-lb dog

### Testing

The AHS strongly recommends that companion animals be tested for heartworm once or twice annually, depending on where they live, even if the pet is on a preventive. Heartworm preventives are highly effective but do not guarantee 100% protection. Missing just 1 dose of a monthly preventive—or administering it a few days late—can leave a pet unprotected. Even if the medication is given as prescribed, a pet may spit out a pill or rub off a topical medication, thus decreasing its effectiveness.

Initial testing for heartworm infection requires just a simple blood test that can be processed in a few minutes. If the result is positive, your veterinarian will run follow-up tests to confirm the diagnosis, such as chest X-ray or ultrasound imaging of the heart and lungs to identify the presence of worms, abnormalities, or damage.

### TREATING HEARTWORM

Currently, heartworm treatments are available only for dogs. The good news is that because cats are not ideal hosts, infections often resolve on their own.

If your cat (or ferret) contracts heartworm, your veterinarian will develop a plan that treats the signs associated with the infection but does not kill the worms. This may include oxygen administration for persistent shortness of breath, a combination of medications, or extended hospital stays for observation. Your veterinarian will also likely recommend routine testing and chest X-rays

to monitor the number of detectable worms and any damage to the lungs and heart. The objective is to provide enough supportive treatment that the cat outlives the heartworms.

Treatment for most affected dogs consists of restricted activity; a heartworm preventive medication to kill immature heartworms and prevent new infections from developing; antibiotics; a series of injections of a medication that kills the adult worms; and follow-up exams to determine the dog's response to treatment. In severe cases, emergency surgery may be needed to save the dog's life. Even after treatment, dogs should remain on a prescribed heartworm preventive for life.

**The American Heartworm Society estimates that more than 1 million dogs were heartworm-positive in 2016.**

### PREVENTION

The most important thing to know about heartworm disease is that it is avoidable. Heartworm preventives, which eliminate the worm's immature stages if an infected mosquito bites your pet, are available in pill, topical, or injectable form and can be prescribed by your veterinarian. Many heartworm preventives also thwart infection by other types of parasites, such as hookworms, whipworms, roundworms, fleas, and ticks.

Unfortunately, even though preventives are extremely effective and easily attainable, many pets remain unprotected. The AHS estimates that roughly half of dogs and just 10% of cats are on preventives. It is ideal to administer the preventive year-round, starting when pets are approximately 6 weeks old. Keep in mind that even indoor cats are at risk because mosquitoes do make their way into the home.

If your pet is not already on a preventive, ask your veterinarian to prescribe one as soon as possible. You should also request a blood test to confirm that an infection is not currently present. ■



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