

At the Heart of Heartworm

Heartworm can be fatal, but it's also one of the most preventable canine diseases.

By Caroline Coile, Ph.D.

Dog owners tend to take worms for granted. But there's one type of worm nobody can become complacent about: the heartworm. Heartworm cases are found in all 50 states, but are most prevalent within 150 miles of the Gulf and Atlantic coasts as far north as New Jersey, and along the Mississippi River region. In these areas, almost half of dogs not on heartworm prevention are infected.

The American Heartworm Society estimates that about 27 million dogs are not protected from heartworms. Dogs become infected through the bite of a mosquito that has bitten another infected animal. When the mosquito bites an infected dog, it ingests microfilariae — young pre-larval heartworms — that are circulating in the dog's blood. The microfilariae mature into larvae within the mosquito in 10 to 14 days. When the mosquito feeds on another dog, the larvae are injected into the new dog, where they travel to the heart, lungs, and associated blood vessels, then mature into adults that may live for five to seven years.

Dogs can have as many as 250 heartworms, each up to a foot long. They initially cause inflammation of the surrounding arteries, and later, enlargement of the heart and congestive heart failure.

Fortunately, prevention is simple with either daily or monthly drugs. Most owners use a monthly preventive because it is easier to remember. Puppies can start preventive medicine as early as 8 weeks of age. Adult dogs should be confirmed free of heartworms before beginning prevention.

Your veterinarian can check for heartworms by looking at a blood sample for microfilariae, which indicate the presence of adult heartworms. However, because not all infestations produce detectable microfilariae, a more sensitive antigen test (sometimes called an occult heartworm test) can detect the presence of adult female heartworms that are at least 8 months old. X-rays and ultrasounds can help quantify the extent of infection.

Treatment of heartworms used to be somewhat risky, but it's far safer now with the advent of a newer drug with lower toxicity and fewer complications. The major complication is the possibility of pulmonary thromboembolism, or a blood clot, from the presence of dead heartworms in the lungs' blood vessels. Anti-inflammatory drugs and strict rest help reduce the risk in dogs with a heavy infestation. In especially heavy infestations, many of the heartworms may be surgically removed before starting drug treatment.

Since the discovery of heartworms 100 years ago, researchers have worked on better ways to prevent and treat them. Current research focuses mainly on better treatments, since, as American Heartworm Society President Tom Nelson, DVM, points out, "it is difficult to improve on 99.99 percent effective heartworm preventives."

Heartworm is now perhaps the most preventable, potentially fatal, disease of dogs. Yet even dogs on preventive medication can get heartworms, which is why dogs on preventives should be checked every other year or following any lapse in dosing. "As with every drug, there are occasional failures," says Nelson, "but the vast majority of the failures we see are a result of owner compliance. Surveys show that less than 75 percent of the prescribed doses are given. This is why the American Heartworm Society supports year-round administration of heartworm preventives. When giving products year round, a missed dose is less likely to lead to an infection."

Caroline Coile, Ph.D., is an award-winning author of 26 books and hundreds of articles about dogs.