

## Heartworm Havoc

Written by Janet Goodman, BT Contributor  
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### After 40 years of prevention treatment, the disease persists



Heartworm disease affects 30-plus species of mammals, both wild animals (foxes, wolves, coyotes, and marine mammals) and domesticated ones, such as dogs and cats, and in rare cases humans.

In dogs, infections of these ten-inch-long parasites can cause heart failure, lung disease, and damage to other internal organs.

Heartworm larvae are transmitted solely through the bites of infected mosquitoes; more than 70 mosquito species have been found to spread the disease. As reported in the University of Florida IFAS Extension report on *Pests in and Around the Southern Home*, “16 species of mosquitos have been identified as natural hosts of dog heartworm in the U.S. east of the Mississippi. Eleven of them are found in abundance in Florida.”

Some animals carry adult female heartworms that produce microfilaria, or microscopic baby worms, that live in the animals’ bloodstream. Mosquitoes that bite these infected animals can pass on to still other animals the larvae that develop within them in 10-14 days.

It takes five to seven months for the larvae to become adult heartworms, which can thrive for five to seven years in dogs, and two to three years in cats. The adult heartworms mate and produce offspring inside dogs, increasing in number anywhere from 30 to 250. In dogs, the

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severity of the disease is related to the number of adult worms in their bodies.

Cats are not preferred hosts and may have only one to six adult worms, making the disease difficult to diagnose in felines.

Heartworm disease has been found in all 50 states. According to the American Heartworm Society (AHS), which has surveyed thousands of veterinarians every three years since 2001, heartworm disease in pets is on the rise. The AHS found that in 2016, the average number of dogs diagnosed per vet clinic rose by 21.7 percent from the previous survey, taken in 2013, while distribution of the disease remained virtually the same.

Florida made it on the AHS survey's list of top ten states in heartworm incidence; in fact all top ten states were in the South. Hot spots where 100-plus cases per clinic were reported were located along the Mississippi River and coastlines along the Gulf of Mexico and the Atlantic Ocean.

Of the survey respondents, 23.3 percent reported seeing more heartworm cases, while 19.8 percent saw fewer. Most of those reporting a decline attributed it to pet owner use of heartworm preventatives year round without skipping doses.

It's important to note that sponsors of AHS are drug companies that produce and market various heartworm preventions: Merial (Heartgard); Virbac (Revolution, Iverhart, and Sentinel); Merck (Tri-Heart Plus); Eli Lilly (Trifexis and Interceptor), and Zoetis (Revolution), among others.

Preventions come in daily, monthly, and chewable pills, topical liquids, and injectable forms. Some drugs combine heartworm prevention with flea and tick prevention.

Yet with all these products available, incidence of heartworm disease has increased. The 2016 AHS survey showed that only 58 percent of dogs and 30 percent of cats were receiving year-round heartworm prevention. The survey concluded that on average, dogs received preventions less than five months a year, and cats only three months a year.

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AHS suggests that the cost of preventions may make some pet owners reluctant to purchase them (approximately \$100 annually for dogs weighing 20 to 30 pounds). They note that the notion that indoor dogs and cats are at low risk for the disease is a myth. Some owners may also fear that the medications will produce harmful side effects. But climate conditions, such as above-average temperatures and rainfall, increase the breeding opportunities for mosquitoes, perfect for heartworm development.

The heartworm “wonder drug,” Ivermectin, was discovered at Tokyo’s Kitasato Institute in the late 1970s and was first used as a veterinary drug. By 1981, Ivermectin was sold as a commercial product. It’s effective at preventing adult heartworm development by eliminating immature larvae inside of infected animals, as well protecting against other parasites like roundworms, hookworms, lungworms, mites, lice, and horn flies. Onchocerciasis (river blindness, prevalent in Africa and Latin America) was successfully treated with Ivermectin in 1988. It is also an effective treatment for lice, scabies, and lymphatic filariasis in humans.

Heartworm preventions can only safely be administered to animals that have tested *negative* for heartworms; they require a vet prescription. Adult infections are treatable in dogs, although the arsenic-based treatment is harsh and can cost up to \$1000 or more for vet care over three to four months.

Prevention is key for cats, since there’s no known treatment for adult heartworm infections in felines.

Miami-Dade Animal Services doesn’t give walk-in heartworm tests but does test all adoptee dogs over six months old. The Humane Society of Greater Miami offers walk-in heartworm tests for only \$20.

*Janet Goodman is a Miami Shores-based dog trainer, animal-talent wrangler, and principal of Good Dog Bad Dog, Inc. Contact her at [info@gooddogbaddogmiami.com](mailto:info@gooddogbaddogmiami.com).*

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Feedback: [letters@biscaynetimes.com](mailto:letters@biscaynetimes.com)