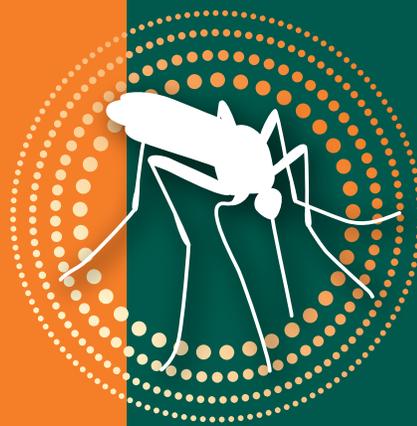


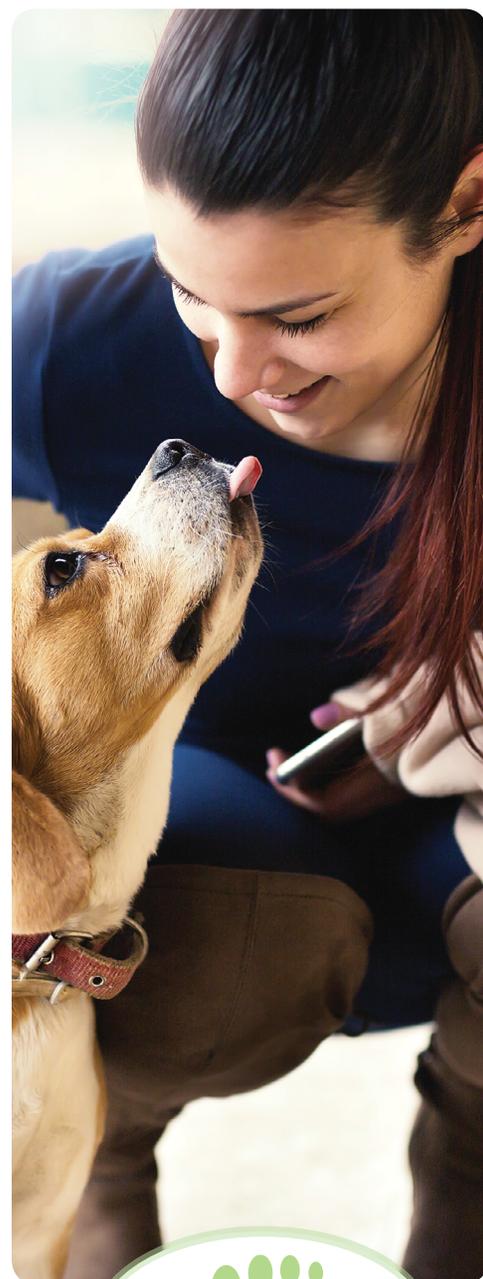
Heartworm Disease



GUIDE

Overview

- **Heartworm disease is transmitted by mosquitoes.** Heartworms are damaging parasites that can kill or seriously debilitate infected pets.
- Pets are at risk for heartworm disease in **all 50 states**.
- It only takes **a single mosquito bite** for pets to become infected with heartworm larvae. When a mosquito bites an infected dog, it can transfer the larval parasite to the next dog or cat it bites.
 - **In dogs**, heartworm larvae mature into adult worms in the heart and nearby blood vessels, often leading to heart and lung failure. It takes approximately 6 months for a dog to test positive for heartworms after being bitten by an infected mosquito. Signs of heartworm disease may include coughing, trouble breathing, and exercise intolerance. Some dogs may show no signs at all.
 - **In cats**, heartworm is more difficult to diagnose, and unlike dogs, there is no effective treatment. While cats are less likely to harbor large numbers of adult worms, immature heartworms can damage the lungs, leading to coughing, asthma-like signs, vomiting and death.
 - **Even indoor cats are at risk:** Studies show that up to 30% of cats diagnosed with heartworm disease were described by their owners as “strictly indoor” cats.



Heartworm threat never goes into hibernation

- Heartworm disease is a **year-round risk** to pets that requires **year-round protection**. There is no mosquito “season.” Although mosquitoes may not feed 365 days of the year, they can survive 12 months a year and are constantly changing and adapting to cold climates.
- Temperatures do not stay constant throughout winter months. Even the slightest temperature change has the potential to escalate the mosquito life cycle and, in turn, the spread of heartworm disease. Impacting the spread of heartworm disease, mosquitoes can fly anywhere from 150 yards to three miles (bigger species in the Midwest can fly as far as seven miles).
- **It only takes one heartworm-infected dog** to substantially increase the number of infected mosquitoes that can transmit heartworm parasites to nearby unprotected dogs and cats.
 - In a study published in the *Journal of Medical Entomology*, 74% of mosquitoes collected inside the kennel of just one heartworm-infected dog were positive for heartworm demonstrating that “a single heartworm-positive dog potentially increases infection pressure on susceptible animals sharing mosquito exposure.”

BOTTOMLINE



Just one heartworm infected dog in your area, **PLUS...**

mosquitoes around your pet, **EQUALS...**

a high risk or heartworm infection

Heartworm disease is on the rise



- Nationally, heartworm prevalence rates in dogs has risen each of the last five years and are now up 20% from 2013 levels, according to CAPC.
- Nearly 50 of the 70 million dogs in the U.S. are untested for heartworm. Despite the availability and affordability of heartworm preventatives, only 1/3 of dogs in the U.S. were dispensed one or more doses of heartworm prevention annually by veterinarians, according to a 2018 study—“*Increasing incidence of Dirofilaria immitis in dogs in USA with focus on the southeast region 2013-2016*”—published in the scientific journal *Parasites & Vectors*.

Culprits in the spread of heartworm

■ Mosquitoes and microenvironments

- Regardless of where you live, the risk for heartworm is ever-present due, in large part, to mosquito microclimates. No matter the temperature outside, mosquitoes congregate and thrive in sewers, stormwater drains, crawl spaces, alleys and other warm spaces where they survive and feed through winter months.
- Impacting the spread of heartworm is the fact that mosquitoes can fly anywhere from 150 yards to three miles (bigger species in the Midwest can fly as far as seven miles). And while dogs are the primary host for heartworms, wildlife also can be a reservoir of infection. Mosquitoes that bite an infected fox or coyote, for example, can transmit heartworm infection to unprotected dogs and cats.



Transporting rescue dogs

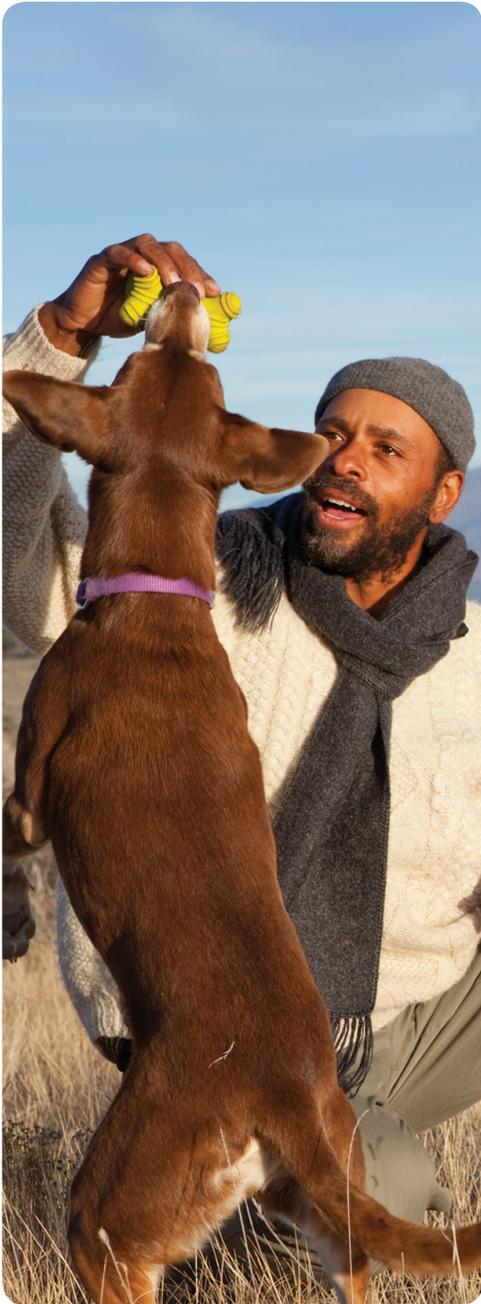
- Heartworm disease has become more widespread in the U.S. likely due, in part, to increased transportation of rescue dogs from regions with higher heartworm prevalence to areas where the disease was previously uncommon.
- In 2017, for example, more than 31,000 rescue dogs were transported from southern U.S. states to Colorado.
- Due to financial and time constraints of many rescue and shelter groups—particularly during natural disasters—many animals are not protected, have missed a monthly dose or have not been tested or treated for heartworm.

Travel with pets is expected to rise **49%**



Increasing travel with pets

- Heartworm disease has likely become more widespread in the U.S. due, in part, to pet owners who are increasingly traveling with their pets—exposing them to varying, unpredictable temperatures and prevalence for heartworm.
- According to a 2017-18 American Pet Products Association survey, 37% of pet owners are traveling with their pets every year—up from 19% a decade ago. And a recent TripAdvisor survey indicates travel with pets is expected to rise 49%.
- From 2016 to 2017, the number of emotional support animals traveling each day aboard U.S. commercial flights grew 57%, according to the Airlines for America, an airline trade association.

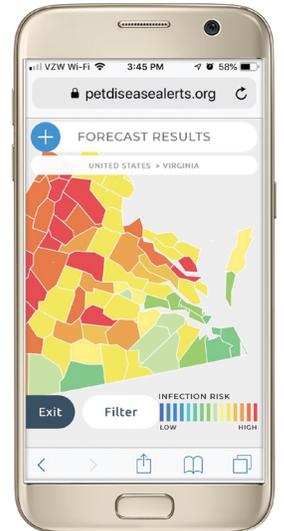


Heartworm lifecycle: Why monthly prevention and annual testing matters

- It takes approximately 6 months after being bitten by an infected mosquito for a dog to test positive for heartworms. Heartworm preventatives work retroactively by killing only early stage larvae transmitted by a mosquito in a previous month.
- Missing just one monthly dose—or giving it late—can leave a dog or cat unprotected from heartworm disease. This is why it's critical to keep dogs and cats on heartworm prevention every month of the year to kill the larvae before they develop into a stage that is immune to the heartworm preventatives.

All pets tested and protected

- CAPC recommends that all dogs be tested annually for both heartworm antigen and microfilariae, even if they are on year-round preventives. Cats should be tested for the presence of heartworm antigen and/or antibody before starting them on year-round preventive.
- The single most effective way to avoid timing mistakes with heartworm protection is to keep pets on preventative medication year-round and have your pet tested at least once a year. Your veterinarian can recommend an effective preventive that's right for your pet.
- To help pet parents and veterinarians identify the risk for heartworm and other parasite infections in your geographic area, CAPC the 30-Day Parasite Forecasts maps (petdiseasealerts.org) which provide heartworm disease forecasts for the U.S. at the county level.



Every pet tested and protected

Visit us at PetsAndParasites.org to learn more.

