

## Heartworm Disease

Heartworm disease refers to a potentially life-threatening infection with a parasite called *Dirofilaria immitis*. The parasite is transmitted by mosquito bites; once transmitted to the dog, heartworm larvae mature into adult worms. Dogs are natural hosts for the parasite and can develop very high numbers of adult worms. Cats are atypical hosts and as such the larvae may or may not mature into adult worms.

Heartworms live primarily in the heart, lungs, and blood vessels of infected dogs, causing significant- and potentially life-threatening- damage to those organs. If cats have even a few adult worms, they can not only damage the heart or lungs but may also migrate anywhere in the cat's body. Both dogs and cats can sustain severe or life-threatening complications from heartworm infection.

Pets with heartworm infection may show few signs of illness early in the course of disease but as the worms mature, they may show progressive, worsening signs of illness including cough, distended abdomen, exercise intolerance, or respiratory distress. In some pets, the heartworms become lodged in the heart, obstructing normal blood flow through the heart. These pets may present in shock with low blood pressure, anemia (low red blood cell count), and elevated liver values. In both dogs and cats, heartworm disease can cause sudden death.

Heartworm is most often diagnosed on a blood test. Some of these blood tests can be run in-house, while others are sent out to reference laboratories. Treatment for heartworm disease requires careful planning; the specific course of treatment depends on the severity of disease and your pet's symptoms. Some pets will be referred to a cardiologist to look for heart or lung damage. Pets with heartworm disease should be activity restricted to reduce the chances of complications prior to- or during- treatment. Treatments may be staged to reduce the risks of treatment or disease-associated complications. Your primary care veterinarian or a cardiologist can help to develop a treatment plan.

In pets without heartworm disease, infection can be prevented with routine medications. Heartworm preventatives include monthly oral medications, monthly topical medications, and injectable medications. You should discuss heartworm prevention with your primary care veterinarian.

## Anxiety, Aggression, and Other Problematic Behaviors (Dog or Cat)

Pets can have problematic behaviors, including aggression, separation anxiety, phobias, and elimination disorders. These behaviors can be challenging, frustrating, and confusing for pet families at times, but resources are available to help you to better understand and address these behaviors.

Veterinary behaviorists and reward-based trainers can provide you with a complete assessment of your pet's behaviors and make recommendations moving forward. In some cases, medications may be advised and specific training programs will be implemented.

With pets that can become aggressive, it is important to prevent the pet from hurting anyone – including people or other pets- until you can get help from the aforementioned resources (behaviorist or reward-based trainer).

Do your best to avoid situations that may provoke your pet to act aggressively. These can vary significantly and may include- but are not limited to- situations that cause fear, interactions with other pets, situations that provoke your pet to guard his/her resources (meal time, toys, treats) or to become territorial, interactions with small children, or interactions with strangers. In the vast majority of situations, confrontation with your pet can escalate the aggressive behavior, so punishment for problematic behavior isn't advised.

Please discuss any concerns you have about your pet's behavior with your primary care veterinarian or a veterinary behaviorist.

