

Canine Heartworm Testing

- Heartworm testing is performed to determine if a pet is infected with heartworms (*Dirofilaria immitis*).
- Many veterinarians use a popular test called a “SNAP” test, which can be run in just a few minutes at your veterinarian’s office.
- Sometimes, additional testing is performed to gain more information about the extent of heartworm infection for a particular patient.
- Heartworm testing is recommended for most dogs before beginning a heartworm preventive program. Periodic testing is also recommended for dogs already on heartworm preventive medication.

What Is Canine Heartworm Disease?

Heartworm disease is a serious and potentially fatal condition that affects dogs, cats, and up to 30 other species of animals. It is caused by parasitic worms (heartworms) living in the major blood vessels of the lungs and, occasionally, in the heart. These worms are transmitted (as microscopic larvae) through the bite of an infected mosquito. The scientific name for the heartworm parasite is *Dirofilaria immitis*.

Heartworm disease can cause a variety of medical problems affecting the lungs, heart, liver, and/or kidneys. Any of these problems, alone or in combination, can lead to death. Although safe and effective treatment is available, it can be a costly and complicated process depending on how long the dog has been infected and how severe the infection is.

How Is Heartworm Testing Performed?

Heartworms are spread through the bite of a mosquito. When a mosquito bites an infected dog, it withdraws blood that contains immature heartworms (called *microfilariae* [pronounced *micro-fill-air-ee-ay*]). These microfilariae mature inside the mosquito to become infective larvae. When the mosquito bites another dog, the larvae enter the dog and (in many cases) mature to become adult heartworms, which produce more microfilariae and continue the heart-

worm’s life cycle. Current testing practices can detect several stages of heartworm infection:

- **Testing blood for microfilariae:** Using a small blood sample, your veterinarian can detect heartworm microfilariae in your dog’s blood.
- **Antigen testing:** “Antigens” are proteins that the body can recognize as belonging to a foreign organism. By identifying certain antigens that are found in adult female heartworms, researchers have developed tests that can detect these antigens to tell if a dog is infected with adult heartworms. Many veterinarians use a rapid-result test called a “SNAP” test to diagnose heartworm disease in dogs. The SNAP test is very accurate, can be performed in your veterinarian’s office using a very small amount of blood, and takes only a few minutes to complete. There is even a combination SNAP test that can detect heartworm disease as well as three tick-associated diseases (Lyme disease, anaplasmosis, and ehrlichiosis) at the same time. If your veterinarian obtains a questionable result on the SNAP test, additional testing may be recommended.
- **Other tests:** Over time, heartworms can start to cause damage to the heart, lungs, and associated blood vessels. If this damage has occurred, your veterinarian may recommend additional testing to determine the extent of your dog’s illness. Additional tests may include radiographs (x-rays)

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Tests and Procedures

to check your dog's heart and lungs for evidence of damage; ultrasound studies to check for specific injuries to the heart; and additional blood work to check the liver, kidneys, and other major body systems for evidence of damage.

No test is accurate 100% of the time, and sometimes your veterinarian may recommend performing tests more than once, or performing additional tests to learn more about your dog's overall health.

When Should My Dog Be Tested for Heartworm Disease?

Dogs should be tested for heartworms before beginning a heartworm prevention program, or when changing from one heartworm preventive to another. Dogs that are already on heartworm preventive medication should also be tested periodically.

The "prepatent period" for heartworm disease (the amount of time it takes for microfilariae to be produced) is approximately 6 months in a dog. During this time, heartworm tests will be negative even if a dog is actually infected. Therefore, puppies younger than 7 months old are generally not tested for heartworms. Instead, puppies should be started on heartworm preventive medication (usually during

their puppy checkup visits) and tested when they are older than 7 months.

Ask your veterinarian about the recommended heartworm testing schedule for your dog.

What Are the Benefits and Risks of Canine Heartworm Testing?

There are very few risks associated with heartworm testing. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at the veterinarian's office or at a diagnostic laboratory, so there is no risk of harm to your pet.

The benefits of heartworm testing are enormous. If your dog is infected with heartworms, early diagnosis and treatment are the best ways to help ensure that the infection is cleared before permanent damage is done to the heart, lungs, or associated blood vessels. Heartworm disease can be fatal if left untreated, so early diagnosis and treatment can literally save your dog's life! Be sure to keep your dog on heartworm preventive medication and follow your veterinarian's recommendations regarding heartworm testing.