

Heartworm: the Silent Killer

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Mosquito borne diseases have been a hot topic for the past few years since the rapid spread of Chikungunya through our country followed by Zika, and the yellow fever outbreak in some countries. Humans have not been the only ones afflicted by these annoying pests, our dogs and cats have also been afflicted. Long before any of the other diseases made their presence felt on our shores, heartworm has been a nuisance for many of our pets.

Heartworm disease is caused by a parasitic worm *Dirofilaria immitis* and spread by the mosquito from dog to dog, these worms live in the heart, lungs and blood vessels of affected pets, and can lead to severe lung disease, heart failure and other organ damage. Dogs are natural hosts for heartworm, meaning that the worms can complete their lifecycle and reproduce within the dog and will increase in numbers causing ill effects to the dog, if left untreated. The mosquito plays an important role in the lifecycle of the heartworm, the adult worms (dirofilarial) produce young worms (microfilaria) which are in the blood stream of the infected dog; these young worms are ingested by the mosquito when it takes a blood meal from the dog.

The young worms develop to their “infective stage” in about 14 days, and are then deposited on the skin of uninfected dog or cat when the mosquito takes a blood meal; these young worms then make their way into the animal through the bite wound and as they mature they enter the right side of the heart.

Dogs with large worm population may exhibit symptoms of exercise intolerance, mild persistent coughing, weight loss, decreased appetite, pale gums and labored breathing and may die suddenly.



Heartworms can go undetected for years as there are no signs of early infection, therefore the best option is prevention. If your dog is over 6 months old, visiting your veterinarian and doing heartworm test first, to ensure that your pet is free of the worm is very important. If the test is negative, the dog can be given for a monthly preventive (ivermectin or milbemycin oxime), or if positive, treatment can be implemented.

If a dog is confirmed to be heartworm positive, the animal may need pre-treatment stabilization. This is done to reduce inflammation in the system and weaken the adult worms. A course of the antibiotic Doxycycline can be given to kill the bacteria *Wolbachia* sp, which are “symbiotic” for the heartworms, therefore weakening them. Prednisone may be used as an anti-inflammatory.

Treatment is usually carried out successfully, and the objectives are to improve the clinical condition of the dog and eliminate both young and adult worms. Melarsomine, an adulticide (kills adult worms) is administered by injection into the lumbar (back) muscles of the dog, this is given in two or three doses depending on the clinical condition of the animal. For non- or early clinical animals, two injections 24 hours apart may be given. For higher risk cases, a single injection followed a month later by two injections done at 24 hours apart may be used, for a more gradual kill of the adult worms. It is important to note that dogs being treated for heartworm MUST be placed on strict exercise restriction for up to 8 weeks after treatment or as advised by your veterinarian due to the possibility complications as dead worms may block blood flow to the lungs causing respiratory distress and even death.

Medication is also given to kill circulating microfilaria and any other developing larvae. An assessment is done 6 months after the last treatment which includes a thorough physical examination focusing on heart and lungs, along with follow-up blood test.

Dog must be kept on monthly preventive medication for the rest of their lives as they can be re-infected. The importance of preventive medication cannot be overemphasized.

For more detailed information on Heartworm, please visit the American Heartworm Society’s website: <https://www.heartwormsociety.org/>