

DOG HEARTWORM

What is dog heartworm?

Heartworm disease is caused by the nematode (worm) *Dirofilaria immitis*, living in the heart, liver, and lungs of dogs. The heartworm is most damaging in its adult stage, when the mature worms can measure from 6 to 12 inches in length.

Heartworm disease commonly occurs in dogs and other canines, but is not a known threat to humans or other domestic animals.

Symptoms

The presence of immature worms (microfilariae) can only be detected by microscopic analysis of blood samples. Visible symptoms of the disease do not appear until the worms have reached the adult stage:

- coughing
- labored breathing
- fatigue
- loss of appetite
- general weakness

If you live in a high-risk region for heartworm, talk to your vet about prophylactic treatment. (San Mateo County is a moderate-risk region.)

Disease transmission

Heartworm is transmitted to canine populations only by adult female *Aedes sierrensis* mosquitoes. These mosquitoes tend to breed in the rot holes of trees holding water, from March through August. To better understand the transmission cycle, it is necessary to become familiar with the worm's life cycle:

1. The adult female worms in a previously infected dog lays live microfilariae in the dog's blood stream.
2. The microfilariae circulate in the dog's blood stream for as long as 3 years.
3. A female mosquito bites the infected dog, ingesting blood containing microfilariae. The microfilariae grow in the mosquito for about two weeks.
4. The infected mosquito bites another dog and passes the microfilariae, which enters the new dog's blood stream. First, the larvae move under the animal's skin, where it lives for the next three months, growing to a length of about 3 inches. Then it migrates to the heart. There the nematode completes its growth in the next 3 months. When fully grown, the female nematode mates, at which time she will produce more microfilariae and the life cycle repeats.

Since adult worms can live for 5 years and microfilariae persist for 3 years, a single infected dog can be a constant source of infection to other dogs in the community.