

# Heartworms

## Dogs:

Heartworms are parasitic worms which, as adults, live in the pulmonary (lung) arteries and heart of a dog. When male and female adult worms are present, they mate and release larvae called microfilaria (L1) into the bloodstream. From the bloodstream, microfilaria can be ingested by a feeding mosquito and the mosquito then serves as the vector (carrier) to transmit the parasite to another dog or to re-infect the same dog with more larvae.

Transmission through a mosquito bite is essential to the development of heartworms. The microfilaria do not develop into adult worms without molting within the mosquito to become 3rd stage larvae (L3). It is not until the larvae reach this 3rd stage of development that they become infective for a dog.

Once third stage larvae are injected into a dog, they molt twice more and mature into 4th and 5th stage larvae and then into adults. The maturation process from 3rd stage larvae to the fully developed adult stage is 6 1/2 to 7 months. The larvae migrate into the blood vessel during this maturation process and the young adults eventually arrive in the pulmonary arteries and the heart. Once fully mature, the heartworms can then begin reproducing by releasing first stage larvae into the bloodstream. This explains why a blood test is required to detect either adult heartworms or the microfilaria.

Heartworm preventative works by killing the larvae after the mosquito injects them under the skin, before they have a chance to mature beyond L3. The monthly preventative kills any larvae the dog has been exposed to in the previous month.

Because of the ability of insects like mosquitoes to become dormant without freezing, it is possible for mosquitoes to survive in certain areas well into the winter. Just as the mosquito is dormant, so is the heartworm larvae. When temperatures rise enough for the insects to become active, heartworm transmission is possible.

Parasitologists estimate that the risk of heartworm infection extends 10-11 months of the year in the Cincinnati area, in most years. Because of this, we recommend year round prevention to avoid any unnecessary risk. The additional benefit is the year round control of intestinal parasites by the heartworm preventative.

## Cats:

Cats can also contract heartworm disease from infected mosquitoes. It is an issue that cat owners should be aware of, especially with cats that go outdoors. Dogs are much more likely to become infected than cats because cats are not a normal host for the parasite. Current statistics show that prevalence of heartworms in cats is 1/10 that of dogs in the same area. It is estimated that 50% of infected cats never shows signs of illness. When they occur, clinical signs may include vomiting, coughing, open mouth breathing, gagging, difficulty breathing, lethargy and weight loss. Unfortunately, there is no specific treatment for heartworm in cats. However, there is a heartworm preventative available for cats. If you have more questions about heartworms in cats visit: [www.heartwormsociety.org/FelineHeartwormInfo.htm](http://www.heartwormsociety.org/FelineHeartwormInfo.htm)