

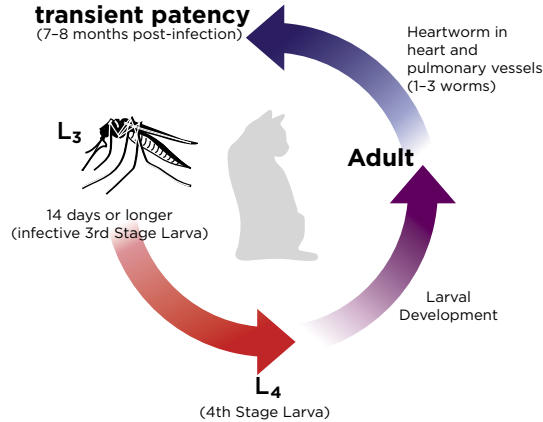


Feline Heartworm Disease

5 Myths and Misunderstandings

Revealed

Feline Heartworm Cycle

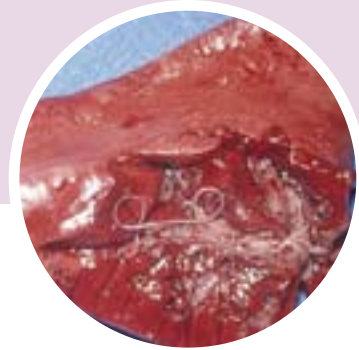


What is heartworm?

Heartworm infection takes place when a mosquito carrying microscopic-size heartworm larvae bites a cat. The larvae enter through the bite wound where they develop in the tissues. The immature worms then enter a blood vessel and are carried to the arteries in the lung where they cause an inflammatory reaction. Most worms die at this stage, causing even more inflammation. The worms that progress to the adult stage may live undetected for a couple of years. But, when the adult worms die, the inflammation can be severe enough to cause death. The respiratory signs associated with these reactions are called Heartworm Associated Respiratory Disease (HARD).



Adult heartworm inside
a feline heart



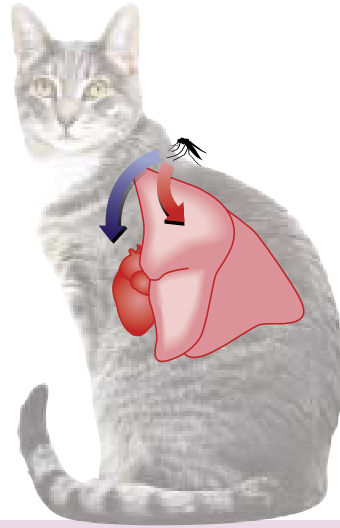
Lung inflamed due to adult
heartworm infection

Is heartworm serious?

One study conducted in the Texas Gulf Coast region in the late 1990s revealed heartworm antibodies were present in 26 percent of the cats examined, indicating the cats were infected at some point in their lives. Adult worms were present in 10 percent. The rate of heartworm infection was significantly higher than that of feline leukemia virus infection at 5 percent, and feline immunodeficiency virus infection at 6 percent.

Photos: Courtesy of Pfizer

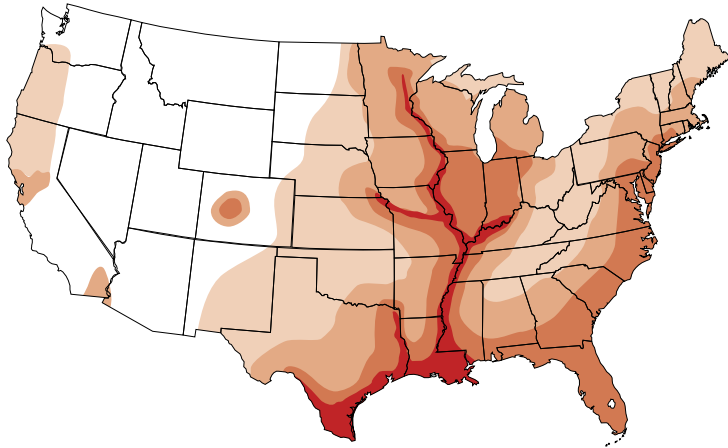
- Heartworm larvae induce an intense inflammatory response in the blood vessels and tissues in the lungs.
- Once an adult worm dies, after 1-2 years, there is an additional intense inflammatory reaction resulting in acute lung injury.



I thought heartworm was mainly a dog's disease.

Heartworm disease is not just a canine disease. Heartworms affect cats differently than dogs, but the disease they cause is equally serious.

1: Dogs vs. Cats



But my cat stays indoors, so she is safe, right?

It only takes one mosquito to infect a cat, and because mosquitoes can get indoors, both indoor and outdoor cats are at risk and should receive heartworm preventive medication. In a North Carolina study, 28 percent of the cats diagnosed with heartworm were inside-only cats.

Heartworm disease has been diagnosed in all 50 states. This map shows particularly endemic regions.

2: Indoor vs. Outdoor Cats



How does it affect my cat?

The name “heartworm disease” is a misnomer, as the disease mostly affects the lungs and not just the heart. Signs are often mistaken for feline asthma, allergic bronchitis or other respiratory diseases.

In the x-rays, the cat's lungs appear congested as a result of heartworm infection.

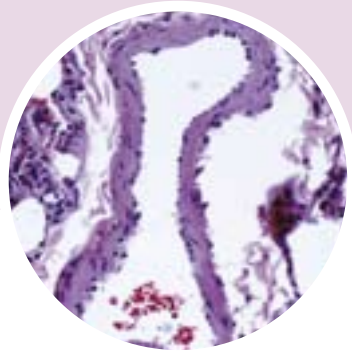
X-Ray Images: Courtesy of Dr. Ray Dillon, Auburn University College of Veterinary Medicine

3: It's a Heart Disease

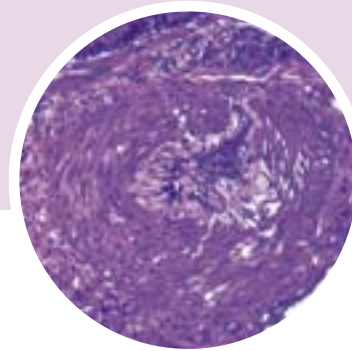
What if the heartworm larvae never develop into adult worms?

Cats do not need an adult heartworm to exhibit clinical signs; in fact, larvae are a main cause of the problems. Studies show 50 percent of cats infected with heartworm larvae have significant disease of the small arteries supplying blood to the lungs.

Effect of Heartworm on Arterioles



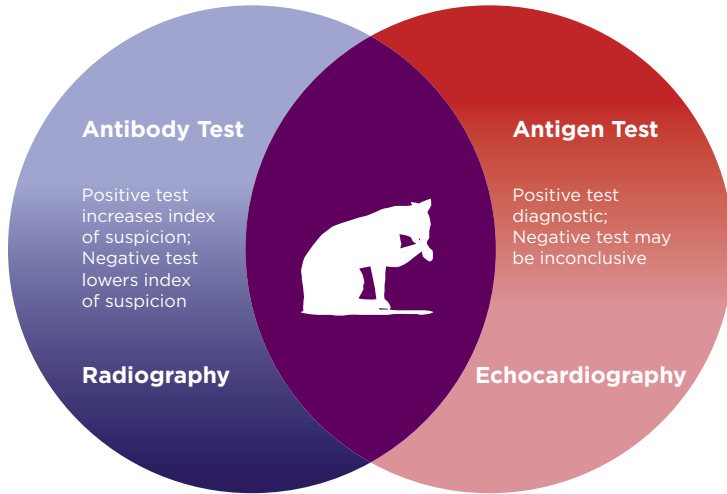
A. An arteriole (small artery) in the lungs of a cat receiving heartworm preventive medication.



B. An arteriole from a cat infected with heartworm larvae, showing thickened walls which can cause complete obstruction.

Images courtesy of Dr. Ray Dillon and Dr. Byron L. Blagburn, Auburn University College of Veterinary Medicine

Is it easy to test whether my cat has heartworm disease?



Diagnosis is difficult as negative antigen and antibody tests do not rule out heartworm disease. Positive tests, however, are significant.

Signs Associated with HARD: Heartworm Associated Respiratory Disease

anorexia	fainting
blindness	lethargy
collapse	rapid heart rate
convulsions	sudden death
coughing	vomiting
diarrhea	weight loss
difficulty breathing	

HARD: Redefining the Disease

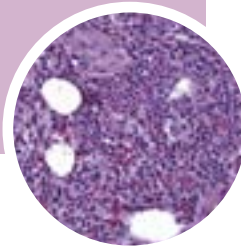
A wheezing cat does not necessarily mean an asthmatic cat. Signs such as persistent rapid breathing, intermittent coughing and increased respiratory effort may actually be caused by the presence of heartworms in either larval or adult stages.

Effect of Heartworm on the Pulmonary Artery

- A. The pulmonary artery of a cat receiving heartworm preventive medication.
- B. Inflamed pulmonary artery from a cat with an adult heartworm.



Effect of Heartworm on the Alveolus



- A. Alveolus, an air sac in the lungs where oxygen diffuses into the bloodstream. This alveolus is from a cat receiving heartworm preventive medication.
- B. This is the alveolus from a cat with heartworm larvae.
- C. Inflammation is apparent as a result of an adult heartworm.



What can I do?

Heartworm disease is preventable. Ask your veterinarian for current recommendations regarding year-round, broad spectrum heartworm preventives for your cat.



www.knowheartworms.org



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