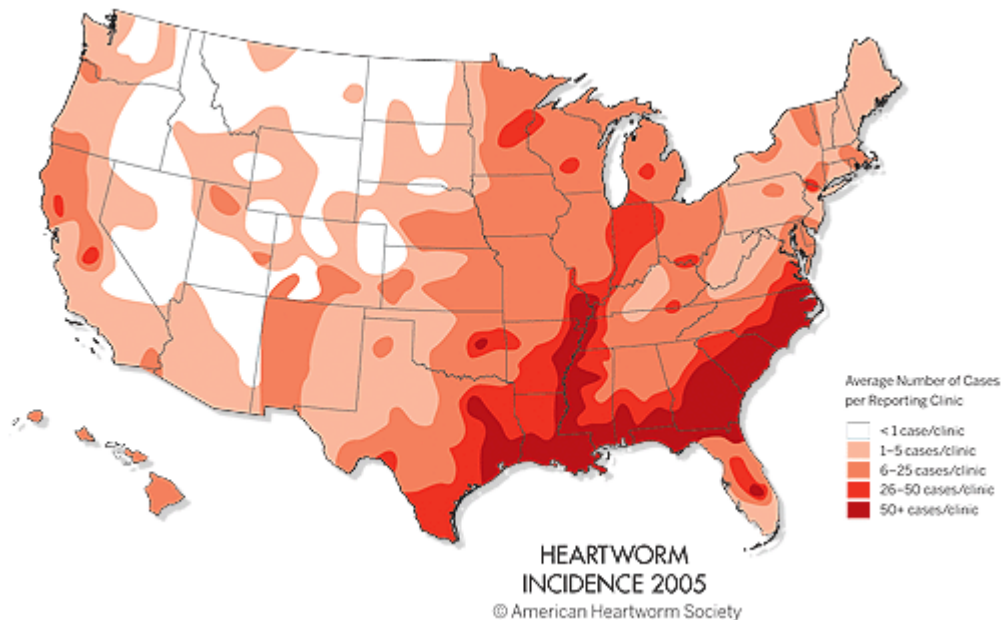


# What's New?

Since the last newsletter, we have had some staff changes. Tanith is no longer with us. She has taken a job as a pharmacy technician with one of the local hospitals. We will miss her greatly. To replace her, we have hired Julie. She has had previous veterinary experience working at various veterinary clinics in Fort Wayne. She is a big cat lover, so she will be assisting Dr. Fretz with most of the cat patients. Come in and introduce yourself to her. This month in the newsletter, we will cover heartworms. In the coming months, we will discuss internal parasites, fleas and ticks.

## Heartworm Overview

Heartworms have been around for over 100 years. They are a nematode parasite that is transmitted by the mosquito. Heartworm is found in all 50 states, Puerto Rico, U.S. Virgin Islands and Guam. The 2005 incidence map below shows that we are in one of the areas with a high infection rate. I have owned the practice for the last 3 years and in that time we have diagnosed over 21 dogs with heartworm in just our part of the city

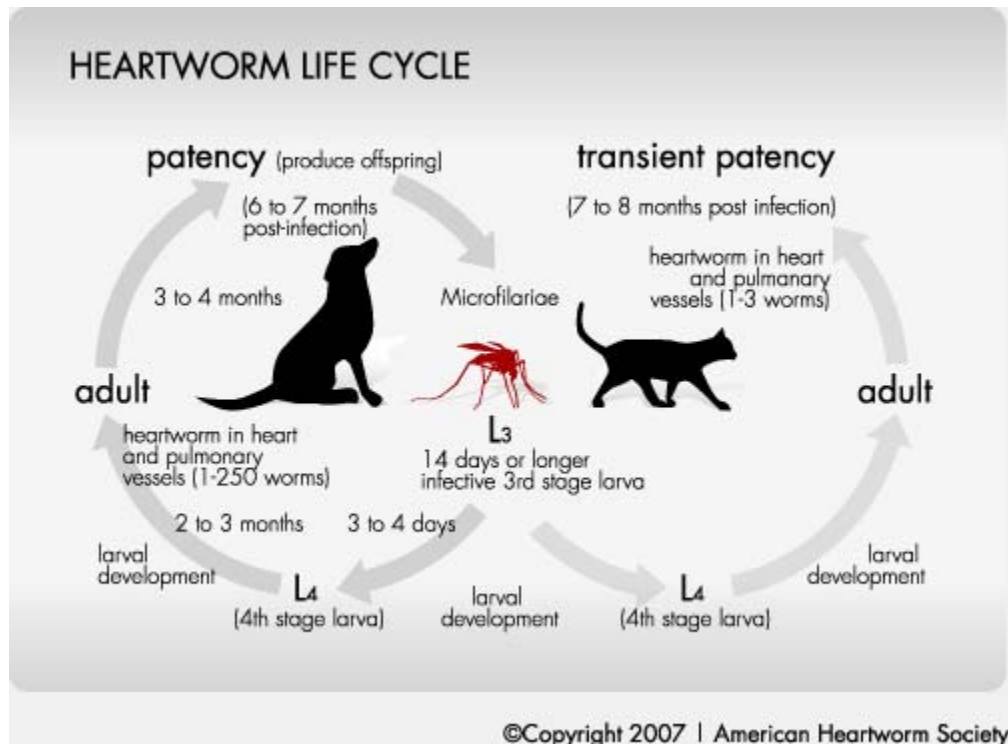


alone.

The sad news for these dogs is that this disease is 100% preventable if owners are willing to give a preventative once a month.

So, how does the dog contract heartworms? They contract them from the bite of a mosquito that is carrying the L3 infective larvae. The good news is that not all mosquitoes carry the larvae, but the bad news is that there is no way to tell which ones are carrying it. As the diagram shows below, it takes 6-7 months for the L3 infective larvae to reach the heart and mature into a microfilaria-producing adult. At that time, the dog is infective to other mammals in its immediate area. The life cycle starts all over again with some of the microfilaria being picked up by mosquitoes and others completing their life cycle in the dog making the worm burden larger and causing more damage to the heart and lungs.

The preventatives used in our clinic kill the L3, L4 and, in some cases, the L5 or immature adult heartworms. For this reason, the preventative needs to be given on a monthly basis so that none of the larvae reach maturity. For the last 3 years we have been recommending that the preventative be given all year around. This serves several purposes. First, the owners stay in the habit of giving the preventative and, therefore, fewer doses are missed during mosquito season. Second, all preventatives also contain products that help prevent internal parasites and some help prevent flea infestations as well. Dogs can be exposed to parasites all year long. Finally, houses that have basements, half baths and/or floor drains can harbor a flea population all year long. To read more about heartworms and how they affect dogs, please visit The Heartworm Society's website at [www.heartwormsociety.org](http://www.heartwormsociety.org).



Within the last 5 years, the number of available preventatives has dramatically increased. We now have “generic” brands, chewable treats, pills and topical products. They vary in price and what parasites they cover, but you can easily fit it in your budget no matter how

tight it may be. To help offset the cost of these commonly used products, I have enrolled the clinic in a veterinary-based online pharmacy. The pharmacy buys for thousands of practices across the United States so they are able to receive the best volume buy discounts on the products that they sell. This allows me to pass the savings on to you. The other bonus is that because I have to write a prescription for your pet's medications, you are still able to take advantage of the manufacturer's owner discounts for volume buying. If you want to see what products are available at the online pharmacy, just click the VetStoreRx button on the upper left corner of our home page and take a tour.

## Heartworm, the Silent Killer of Cats

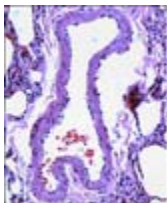
There is evidence that cats have been dying from heartworm infections for over 80 years. It has only been in the last 10 years or so that veterinary medicine has seen a correlation with heartworm infection in cats and acute respiratory death and it has been in only the last few years that evidence has shown that it is a bigger problem than we first expected. In our summer 2006 newsletter, we told you that only about 16% of the cats are at risk of contracting heartworm disease. We now know that it can be as many as 50% of outdoor cats and 34% of indoor cats.

Since cats are not the normal host for the heartworm, they are better able to destroy the worms early in the infection by mounting an immune response to the circulating larvae. Unfortunately for the cat, having larvae in the circulation can cause damage to the vessels and tissues in the lungs even if the larvae are destroyed in the first weeks of the infection. Most cats will show no evidence of this inflammatory response, but some will exhibit asthma or allergic bronchitis like symptoms. This is known as Heartworm Associated Respiratory Disease or HARD. If the larvae reach maturity, the respiratory symptoms may go away or never be evident. This is because the adult heartworm seems to be able to suppress the inflammatory response. Once the adult dies, the cat is more likely to have a more life threatening inflammatory response which may require hospitalization, treatment of shock, fluid and oxygen therapy or could result in sudden death.

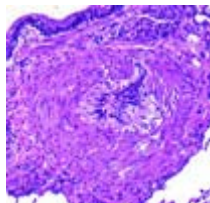
The following pictures were obtained from the Heartworm Society and show the difference in cats that were exposed to heartworms and those exposed, but taking monthly preventatives.

### Small Pulmonary Arterioles

**Note:** Click to enlarge images



Heartworm challenged cat on



Abbreviated heartworm

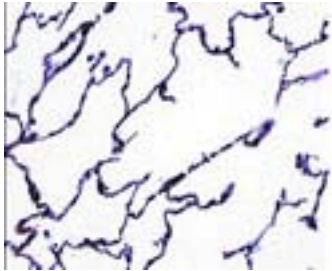


Adult heartworm positive

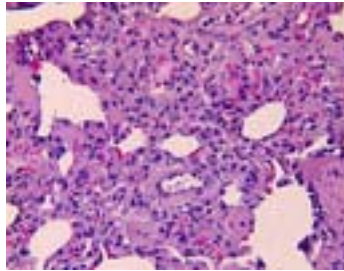
monthly chemoprophylaxis      larval infection

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

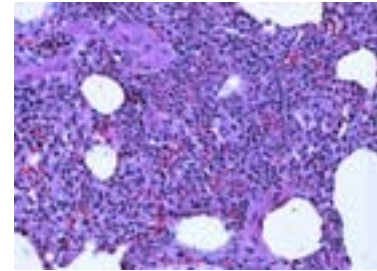
### Alveolus



Heartworm challenged cat on monthly chemoprophylaxis



Abbreviated heartworm larval infection



Adult heartworm positive

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

### Bronchiole



Heartworm challenged cat on monthly chemoprophylaxis



Abbreviated heartworm larval infection



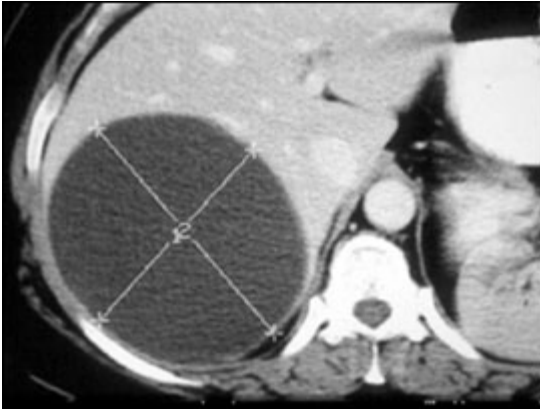
Adult heartworm positive

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

For dogs, we have a very good test to check for the presence of heartworms. However, because of the low number of worms, it can be more difficult to confirm in cats with a simple blood test. X-rays can check for changes in the lung that could suggest heartworm and an echocardiogram can document adult worms, but is expensive. The best option is to prevent the infection in the first place. Just like in the dog, there are many options ranging from pills to topicals. We are currently recommending testing cats to see if there has been an exposure. Any cat exhibiting respiratory signs needs to be evaluated for heartworm. Therefore, we strongly recommend using preventatives. The cats currently housed at the clinic are on a preventative once a month. If you want more information about feline heartworm disease, please refer to the Heartworm Society's website at [www.heartwormsociety.org](http://www.heartwormsociety.org).

## So Why Year Around Heartworm?

For years we veterinarians have called the medication you give your dogs and cats on a monthly basis heartworm prevention. That would imply that it needs only to be given during mosquito season. This premise is wrong. Now days most “heartworm prevention” would be better labeled as parasite control since they treat and help control more than just heartworm infections. Most prevention covers at least internal parasites and some include flea control as well. The common internal parasites like roundworms and hookworms can be infective to humans especially children and cause severe disease and even death.



Tapeworm cyst in human liver



Roundworm larva migration causing blindness in a child



Hookworm larva migration causing severe itching and inflammation

Recently, a group of veterinarians, physicians and epidemiologists formed a group called the Companion Animal Parasite Counsel or CAPC to help establish the best way to

prevent the spread of animal parasites to their human owners. Their guidelines recommend the most broad spectrum year around parasite control appropriate for the animal's lifestyle and twice a year fecal exams. As veterinarians know, by keeping the pet healthy, we can keep the humans they are around healthy as well. To learn more about CAPC or the parasites that can affect you, visit their website at [www.parasitesandpets.org](http://www.parasitesandpets.org).

A handwritten signature in black ink, appearing to be "D. J. [unclear]", written in a cursive style.