

Heartworm is a difficult-to-treat and potentially fatal disease in dogs and cats, but it can be prevented with drugs approved by the Food and Drug Administration (FDA). Owners have a variety of products to choose from to help keep their pets heartworm-free.

Heartworm Disease

A dog or cat can get heartworm disease through a mosquito bite. If the mosquito is carrying the heartworm larvae (infective stage) when it bites a pet, the disease is likely to be transmitted to the pet. The larvae enter the bite wound and move through the pet's body. The adult worms live in the heart, lungs, and nearby blood vessels, where they can grow up to 12 inches long.

Dogs, cats, and some other mammals can get heartworms only if bitten by an infected mosquito; the disease is not contagious from one animal to another. Heartworms in humans are very rare.

Most dogs and cats with heartworm infection do not show any symptoms until the disease becomes severe. At that stage, symptoms may include

- difficulty breathing
- coughing
- tiredness
- reduced appetite and weight loss
- vomiting and gagging (usually only in cats)
- lung, liver, kidney, or heart failure, leading to death

Prevention Vs. Treatment

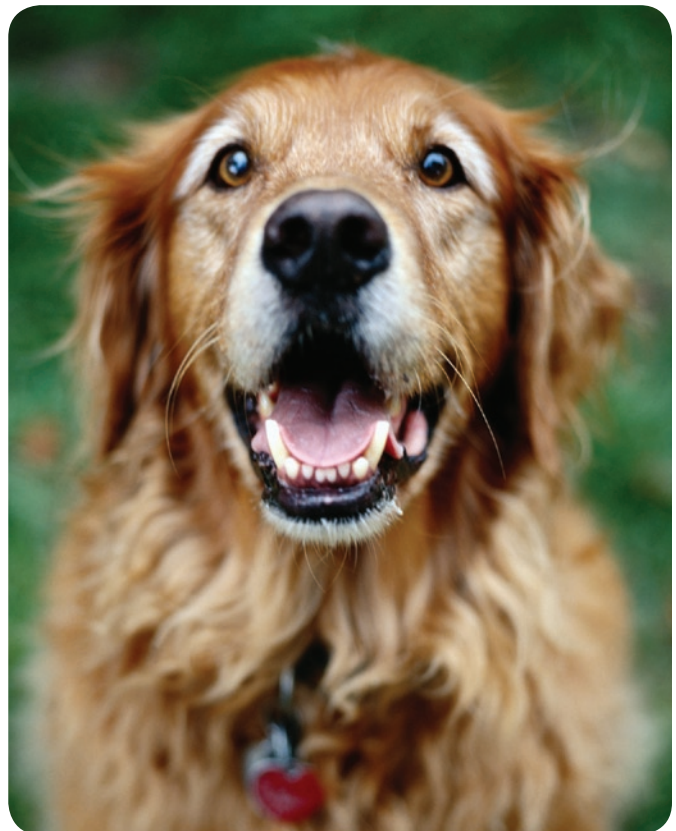
"Prevention is much easier than treatment," says Martine Hartogensis, D.V.M., a veterinarian in FDA's Center for Veterinary Medicine (CVM), because most heartworm preventive products are given to pets only once a month.

"Treatment for dogs is very expensive and potentially toxic, requiring multiple visits to the veterinarian, blood work and x-rays, and a series of injections," says Hartogensis. "Dogs need to be closely monitored during treatment and for up to 24 hours after treatment."

Following heartworm treatment, dogs should have restricted exercise for up to six weeks, adds Hartogen-



Heartworm Prevention in Your Pet



PhotoDisc

sis, because active dogs are at risk for death from a clot in the lungs.

There is no heartworm treatment approved for cats; medications may help manage the symptoms.

Types of Heartworm Preventives

A variety of products are available by prescription only:

- oral pill or tablet
 - ivermectin
 - milbemycin oxime
- topical liquid that the owner squeezes from a tube onto the pet's back
 - selamectin
 - moxidectin
- injectable (for dogs only)
 - moxidectin

A few heartworm preventives are combined with other ingredients to kill fleas and some types of ticks and intestinal parasites.

Because pets that have heartworms may not show symptoms right away, your veterinarian may test your pet before prescribing heartworm preventive, and then yearly, to make sure the pet is not infected. Dogs are tested for heartworm using a simple blood test. Testing in cats, however, is more difficult than, and not as accurate as, testing in dogs.

"Talk to your veterinarian about testing and the best heartworm preventive program for you and your pet," says Hartogensis. "Your veterinarian's recommendation may depend on where you live and whether your pet spends time inside or outside." Heartworms have been found in all 50 states, according to the American Heartworm Society, but they are more commonly found in some areas of the country than others.

Injectable Heartworm Preventive

ProHeart 6 (moxidectin) Sustained Release Injectable for Dogs is the only six-month injectable heartworm preventive approved in the United States. First approved in 2001, ProHeart 6 was voluntarily recalled by

the manufacturer, Fort Dodge Animal Health, in 2004 based on FDA's concerns regarding reports of serious side effects, including death. In June 2008, FDA concurred with Fort Dodge's decision to reintroduce ProHeart 6 to the U.S. market under a special program to manage the risks and restrict distribution. Since the recall, the manufacturer has

- conducted studies that suggest some of the solvents used to manufacture the product can potentially cause an allergic reaction
- changed the manufacturing specifications
- marketed the product internationally and noted few reported unexpected side effects
- revised the product label and Client Information Sheet to include updated safety information


ProHeart 6 is the first veterinary drug ever sold under a risk minimization and restricted distribution program similar to that used successfully for some human drugs. The program requires the following procedures:

- Veterinarians must register with the manufacturer and complete in-depth training prior to purchasing ProHeart 6.
- Only veterinarians can inject the drug into the dog.
- Veterinarians must provide clients with an information sheet about the drug's risks.
- Clients must sign an informed consent form.
- Veterinarians must record the product lot number in the medical record and report any unexpected side effects.

Tips for Consumers

- Ask your veterinarian if your dog or cat should be on a heartworm preventive.
- Store all medications away from children and pets. Your dog may not distinguish a chewable

heartworm preventive drug from a tasty treat.

- You can buy heartworm preventive from your veterinarian. If you buy it from an Internet pharmacy, follow the advice in "Purchasing Pet Drugs Online: Buyer Beware" at www.fda.gov/consumer/updates/petdrugsonline121407.html.
- If you think your pet is having a side effect from a heartworm preventive, call your veterinarian immediately. In addition to treating your pet, your veterinarian can notify the manufacturer, who is required to report side effects to FDA. Owners can also file a report directly with CVM if they wish. 

This article appears on FDA's Consumer Health Information Web page (www.fda.gov/consumer), which features the latest on all FDA-regulated products. Sign up for free e-mail subscriptions at www.fda.gov/consumer/consumerenews.html.

For More Information

How to Report a Veterinary Adverse Drug Experience
www.fda.gov/cvm/adetoc.htm
or call 1-888-FDA-VETS

Your Guide to Reporting Problems to FDA
www.fda.gov/consumer/updates/reporting_guide061008.html

FDA Announces Limited Return of Heartworm Drug to U.S. Market
www.fda.gov/bbs/topics/NEWS/2008/NEW01844.html

American Heartworm Society
www.heartwormsociety.org/