

HAVE A HEART:

Protect Patients
from Heartworms
and Other Parasites

Heartworm in Dogs & Cats

Sheldon Rubin, DVM
Past President
American Heartworm Society



Courtesy, Amara H. Esnada, DVM, DACVIM

The most important take-home is that every team member needs to be on the same page by giving a consistent message to every client, every time.

FIRST STEPS

The statistics are in. Over a million dogs are infected with heartworm disease in the United States, and more than half of clients leave the practice without heartworm preventive.¹ Pet owners need to hear the message about the seriousness of heartworm infection, guiding them away from the “it won’t happen to me” syndrome.

CHALLENGES

- Compliance is low and owners who do comply may run out of preventive and forget to refill the prescription in a timely fashion
- Patients may spit out or vomit the monthly product
- Travel and urban heat islands (ie, regions with increased temperature for prolonged periods) allow for mosquitoes to continue to exist in all seasons
- Most heartworm preventives also control intestinal parasites. Patients infected with these parasites (eg, roundworms, hookworms) can pass eggs in feces, infecting the surrounding environment and putting humans at risk

BENEFITS OF PREVENTION

- Products come in oral, topical, or injectable forms
- Preventives are safe and almost entirely effective when given continuously in a timely fashion
- Most heartworm preventives help control intestinal parasites
- Many topical products also prevent fleas and ticks
- Monthly administration (year-round) can minimize risk for zoonoses and environmental threats from intestinal parasites

TEAM APPROACH

- Successful heartworm prevention lies in the team effort
- Year-round protection is strongly recommended
- Practice communication requires delivering a unified message to the client, including recommendation of year-round prevention
- At every step, heartworm prevention should be mentioned
- Provide tools to help educate the client, such as a container of preserved heartworms
- A comprehensive parasite control program is as important as a discussion about behavior, diet, and wellness
- Every team member needs to be on the same page to give a consistent message to every client, every time

Step 2: Team Education Primer

Heartworm Infection *at a Glance*

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Courtesy Amara H. Estrada, DVM, DACVIM

Heartworm (*Dirofilaria immitis*) infection is spread by the bite of an infected mosquito. When a host is bitten, larvae are deposited on the skin next to the bite. The larvae migrate through the wound to enter the blood stream and reach the heart and pulmonary blood vessels. The microscopic larvae mature over 6–7 months to an adult size of 10–12 inches. Adult females begin producing microfilariae that circulate in the blood stream and are available to other mosquitoes that bite the host. The microfilariae incubate in the mosquito for 10–14 days and become infective 3rd-stage larvae (L3), which are then passed on to the next host the mosquito bites. Because heartworms can live 5–7 years in a dog and 2–3 years in a cat, each mosquito season can lead to an ever-increasing number of worms in unprotected hosts.

SIGNS

Dogs

- As infection progresses and causes damage to the pulmonary arteries and lungs, signs include:
 - Mild cough
 - Reluctance to exercise
 - Fatigue after activity
 - Decreased appetite
 - Weight loss
- Be aware that early-stage infection may not produce signs

Cats

- If present, chronic signs include:
 - Cough and dyspnea (difficult to differentiate from feline asthma)
 - Acute signs of respiratory distress (heartworm-associated respiratory disease [HARD])
- Clinical signs may not be present
- Can lead to sudden death

DIAGNOSTICS

Dogs

- Current heartworm antigen tests screen and detect protein secreted mainly by adult female *Dirofilaria immitis*
- The American Heartworm Society recommends the antigen test and a modified Knott test for microfilariae
- Puppies should not be tested until ≥ 7 months of age (the adult female worm takes that long to mature and secrete enough antigen to show a positive test)
- If a test is positive, perform a second test to confirm.
- Additional imaging may help diagnosis

Cats

- Diagnosis is challenging
- Cats are rarely microfilaremic; negative antigen tests do not rule out infection
- Antigen tests are sensitive to adult female worm infections; male-only or symptomatic immature worm infections, however, are more common in cats²
- A combination of antigen and antibody testing with imaging can increase likelihood of correct diagnosis

PREVENTION

- Indoor-only patients are not immune from heartworm (mosquitoes have no barriers)
- Heartworm preventives are very effective when used properly and on a timely schedule
- Heartworm preventives are eliminated quickly from a dog's body and do not protect from future infection
- Heartworm preventives can be highly effective, safe, easy to use, relatively inexpensive, and protective against other parasites
- As there is no heartworm infection treatment for cats, prevention is crucial

Step 3: Communication Script

The Tough Conversations

Jessica Goodman Lee, CVPM
Brakke Consulting
Dallas, Texas



Always begin each new conversation as if it is the first time the topic is being discussed and do not judge the owner for his or her previous decisions.

Sometimes it seems easier not to “push” clients, but it is important to discuss parasitic infection risks with every pet owner, regardless of whether the owner has declined testing/medication in the past. Always begin each new conversation as if it is the first time the topic is being discussed and do not judge the owner for his or her previous decisions. You are the expert and education is your responsibility.

One of the best ways to begin what may be an uncomfortable or frustrating discussion is to recognize something positive that the owner has done for the patient. This can be as simple as offering praise for bringing the patient in every year. Acknowledge what makes the client stand out as a responsible pet owner!

DOG OWNERS

When greeting the client and patient, review the reason for the scheduled appointment.

Receptionist:

Hi, Mrs. Smith. Fred, you look so handsome today—did you just come from the groomer? And I love the scarf—very sharp!

By the way, Mrs. Smith, I know your appointment today is to recheck Fred’s ears, but I noticed that he is also due for both his heartworm and fecal screens. Would you like to do those today? We can have the results of his heartworm test before you leave today so you will be able to start him on his monthly preventive.

Client:

I never bother with that—Fred doesn’t go anywhere except in the backyard and for several walks a day, but we never leave our neighborhood.

Receptionist:

Wow, he’s pretty lucky—my dogs are ecstatic if I walk them more than once a day! But I do want to make sure that you realize that Fred’s lifestyle does not lower his risk for parasitic infections. Would you like me to give you some information to look over while you and Fred are waiting? That way you can talk to the technician or veterinarian about any questions or concerns you may have.

CAT OWNERS

The conversation with cat owners is somewhat different, especially when it comes to heartworm disease.

Receptionist:

Wow, Mrs. Smith, Kitty looks great—you’ve obviously been working hard at weight loss! Do you have any tips I can pass on to our other cat clients? [Let the client bask in the praise and share his or her tips.]



As I was updating Kitty's record for her appointment, I noticed that she is not currently on monthly heartworm preventive. I want to make sure you have all of the information on feline heartworm disease, especially since there is currently no treatment available once a cat gets heartworms.

Client:

Yes, the veterinarian told me about it last year, but Kitty never goes outside so I really don't think it's necessary. Plus, I tried to give it to her once and she refused to eat it—even in tuna!

Receptionist:

I hear your concerns, but it's important to recognize that it would only take one mosquito to infect Kitty. In fact, a recent study reports that 28% of cats with heartworm disease never went outdoors!⁹ You know, I had the same problem with my cat—she's very finicky and wouldn't take the medication either. But the good news is I was able to use a different preventive that I apply topically every month.

Would you like me to give you some information to look over while you and Kitty are waiting?

COMPLIANCE CONNECTION

- Regardless of the pet owner's response, document the conversation, and any information provided, in the medical record
- An initial *not interested* response gives the technician and veterinarian the perfect starting point to reintroduce the subject
- If talking with the client over the phone, offer to mail or email additional information
- Email the client a link to the parasite prevention page on your practice's website

TRUE STORY COMMUNICATION

When it comes to heartworm disease, one of the best ways to communicate the importance of testing and prevention is to provide the relevant facts and information, such as data on the prevalence of heartworm disease in your state. Another way is to bring it even closer to home—inform clients the number of recent heartworm-positive tests in your practice's canine patients.

When a dog is undergoing heartworm treatment, ask the owner if she or he would be willing to teach other clients about the importance of prevention by allowing the patient to be the practice's **Heartworm Prevention Poster Dog** (consider a treatment discount as an incentive). Use newsletters, social media, and in-hospital displays to tell the patient's story and chronicle heartworm treatment.

Nothing speaks as loudly as a real-life, close-to-home story to educate owners that their pets are equally at risk for this preventable disease.

Steps 4 & 5: Team Workflow & Roles

Team in Action

Jessica Goodman Lee, CVPM
Brakke Consulting
Dallas, Texas



Courtesy Amara H. Estrada, DVM, DACVIM

RECEPTIONIST

- ✓ Greet client & patient
- ✓ Check records and review whether testing is due
- ✓ Review current preventives
- ✓ Ask if the client needs refills on preventives (these can be invoiced & prepared during the appointment)
- ✓ Offer educational information
- ✓ Document conversations & information in medical record

TECHNICIAN/ASSISTANT

- ✓ Escort client & patient to examination room
- ✓ Review testing & preventive protocols, making sure to first note receptionist documentation
- ✓ Provide education on heartworm disease
- ✓ Obtain testing samples (blood, feces)
- ✓ Review importance of monthly compliance
- ✓ Document all conversations in medical record

STEP 5: Team Roles

1

RECEPTIONIST

ROLE:

Client point of contact & prescription/refill administrator

RESPONSIBILITIES:

- ✓ Review client record when scheduling appointment
- ✓ Discuss patient status with regard to heartworm preventives
- ✓ Confirm information on the record is consistent with medication amount the owner has and document any discrepancies and/or information
- ✓ Be familiar with and evaluate supply of preventive medications
- ✓ Prepare prescription refills
- ✓ Reiterate the importance of parasite prevention and testing

2

TECHNICIAN/ASSISTANT

ROLE:

Client educator

RESPONSIBILITIES:

- ✓ Educate on all parasitic infections and the importance of testing
- ✓ Emphasize the importance of year-round heartworm prevention for cats and dogs
- ✓ Use tools (eg, models of infected hearts, jars of preserved heartworms, videos, handouts) to educate client
- ✓ Obtain test samples (eg, blood, feces) and process/prepare laboratory tests
- ✓ Communicate heartworm-negative test results to clients

VETERINARIAN

- ✓ If client is hesitant, reemphasize practice recommendations & reasons for protocols
- ✓ If client refuses testing and/or preventives, document in medical record
- ✓ Consider asking client to sign a waiver documenting the refusal but that she/he has been informed of risks
- ✓ If test results are heartworm positive, communicate with client and discuss next steps

TECHNICIAN OR RECEPTIONIST

- ✓ Confirm that client has received preventives and they have been added to the invoice
- ✓ Review importance of monthly dosing
- ✓ Offer to text/call/email client monthly reminders
- ✓ If client chooses to purchase <12 months of supply, put a reminder in record to contact client to refill prescription

3

VETERINARIAN

ROLE:

Medical expert & client educator

RESPONSIBILITIES:

- ✓ Decide on practice protocols and preventives to be sold/recommended
- ✓ Emphasize the importance of year-round heartworm prevention for cats and dogs
- ✓ Educate on zoonotic diseases and assess risks
- ✓ Document if a client declines preventives or parasite testing and obtain client signature
- ✓ Prescribe preventive based on client/patient preferences and risks

4

PRACTICE MANAGER

ROLE:

Supervisor of team education/practice policies & compliance analysis

RESPONSIBILITIES:

- ✓ Maintain up-to-date training for all new team members with details on parasites:
 - Medical standards, protocols, and policies
 - Medical information on canine/feline heartworm disease and zoonotic risk
 - Data on disease prevalence
 - Detailed information on all parasite protection medications sold in the practice
- ✓ Consider requiring a written test on parasites—it's *that* important!
- ✓ Organize at least one team meeting annually to review parasite infections, treatment, prevention, and practice policies
- ✓ Track testing and prescription compliance to share with team, celebrating and offering praise as numbers improve!

Step 6: Team Training Plan

Training the Team

Jessica Goodman Lee, CVPM
Brakke Consulting
Dallas, Texas

TIP

- Similar role playing should be done by each team member, based on his or her role and interaction with the client.

When it comes to parasitology there are several topics (eg, heartworms, zoonoses, ticks/fleas), so multiple team meetings are recommended to prevent information from becoming overwhelming. Also, take advantage of the educational opportunities offered by vendors, who can conduct lunch-and-learns for the team and can bring in a veterinarian to lead the discussion.

AGENDA

- Hand out and discuss the practice's standards of care with regard to parasite treatment and prevention; if they are not in writing, ask the veterinarians to draft them ahead of time
- Come to the meeting prepared to share the practice's current client compliance data and discuss the biggest compliance challenges, as well as welcome suggestions for improvement
- Utilize your practice management software to see if any one veterinarian stands out as obtaining greater client compliance; if so, invite him or her to offer tips and share his or her approach
- Review client education materials and assign someone to keep these stocked and replenished as needed; familiarize the team with the dedicated page and links on your website

ROLE PLAY!

- Role play different client communication scenarios regarding all parasitic diseases. Ensure each team member shares how he/she would educate the average client about the need to prevent, and remind the team of the practice's expectations with medical record documentation (this is important, especially for legal reasons)
- Focus on role playing the following conversations:
 - Resistant pet owners
 - Heartworm disease specifically (both canine and feline)
 - Zoonotic disease specifically
 - Fleas/tick-borne infections specifically
 - The importance of laboratory testing (blood, feces)
 - Preventive medications and cross-protection against several diseases

KNOW THE SOURCES!

A wealth of educational materials is available for both veterinary teams and pet owners—these sites can also offer free client education brochures:

- **KNOW Heartworms (feline-specific)** knowheartworms.org
- **American Heartworm Society** heartwormsociety.org
- **Companion Animal Parasite Council (CAPC)** capcvet.org
- **Pets & Parasites by CAPC** petsandparasites.org
- **US Food & Drug Administration** fda.gov

See Aids & Resources, back page, for references & suggested reading.

Step 7: Client Handouts

You asked... the expert answers!



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Q **What is heartworm disease?**
A Heartworm disease, prevalent in all 50 states, is serious and potentially fatal, primarily affecting dogs, cats, and ferrets. Adult heartworms live in the heart and pulmonary (lung) arteries and can cause heart failure and severe lung disease.

Q **How are heartworms transmitted?**
A Heartworm is transmitted by an infected mosquito, whose one bite can infect a dog or cat. It cannot be transmitted from animal to animal. When a mosquito bites an infected animal, it receives young heartworms (microfilariae) with the blood meal. After a short incubation period in the mosquito (10–14 days), heartworms can then be passed on to the next animal the mosquito bites. Larvae migrate through the tissues and enter the blood stream to the heart and pulmonary blood vessels where they can grow up to 12 inches and produce new microfilariae, beginning the cycle again.

Q **My pet never goes outside—does she need heartworm prevention?**
A Mosquitoes enter homes all the time. All pets are recommended to be on preventives, regardless of where they reside.

Q **Can cats get heartworm disease?**
A Yes. Heartworm disease in cats is difficult to diagnose and a single worm can prove deadly.

Q **How can I tell if my dog or cat has heartworm disease?**
A In later stages, as the heartworms develop, the dog may cough, become lethargic, have difficulty breathing, and lose stamina. Cats may develop coughing and breathing difficulties, resembling signs of feline asthma.

Q **Can infected pets be treated?**
A If detected early, heartworm disease in dogs can be treated. While the process is prolonged and can be expensive, the success rate can be high. Currently, there is no treatment for cats.

Q **How is heartworm disease detected in dogs?**
A Your veterinarian must perform an annual blood test, even if the dog is on year-round prevention.

Q **How is heartworm disease prevented?**
A Many safe, relatively inexpensive preventives are available by prescription from your veterinarian. With their proper and timely use, heartworm disease is extremely preventable. Reduced exposure to mosquitoes is also necessary, but do not use human mosquito repellants on pets.

Q **Can heartworms infect humans?**
A This is very rare. Heartworms have been reported in the lungs of humans as nodules that are not easily distinguishable from lung cancer.

CONTACT MY VET!

Veterinarian name: _____
Phone number: _____

Email address: _____
Office hours: _____
Emergency contact: _____

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Healthy Pets = Healthy Families

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Past President
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At our animal hospital, we recognize that your pets are a part of your family. As with any family member, you want to keep your pet healthy and happy. One of the most important things you can do to ensure your pets' health, as well as the health of your 2-legged family members, is to keep them free of parasites with year-round preventive care. Several heartworm preventives also protect against other parasites.

Q What is zoonotic disease?

A Zoonoses, or zoonotic diseases, are contagious diseases that can be transmitted between animals and humans. These diseases are caused by bacteria, viruses, parasites, and fungi.⁴ One example includes roundworms: humans can accidentally ingest infective worm eggs passed through the pets' feces and left in the environment. The eggs can then hatch in the human intestinal tract, and the immature worms can travel to various tissues in the body (eg, eyes, lungs), potentially causing serious infections.

Q What is a vector-borne disease?

A Vector-borne diseases are transmitted by fleas or ticks, as well as other ectoparasites that infest dogs and cats. Ehrlichiosis, Lyme disease, and Rocky Mountain spotted fever are serious tick-borne diseases that affect both pets and people. Protecting your pet from fleas and ticks can significantly reduce the risk for human exposure to these parasites.

Q What can I do to protect both pets and people?

A Keeping your pets on preventive medication year-around is not only the best way to protect them from parasite infections—it also is the best way to protect people. All of the staff at your animal hospital are highly educated on parasitic infections and prevention and are ready to answer your questions and prescribe the most effective year-round preventive medication available.

Also, always remember to clean up pet feces immediately and practice good personal hygiene!

YOUR VETERINARIAN RECOMMENDS THE FOLLOWING PARASITE PREVENTIVES:

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