

Diagnosing intestinal parasite infections

Fecal Dx[®] antigen testing clinical reference guide

IDEXX

Screen every dog at least twice a year

The Companion Animal Parasite Council (CAPC) guidelines recommend including fecal antigen testing to ensure the widest breadth of detection of intestinal parasites.¹⁻³ Fecal antigen testing can identify infections that can be missed by using other methods.⁴

Gain client compliance with CAPC recommendations

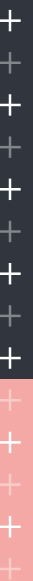
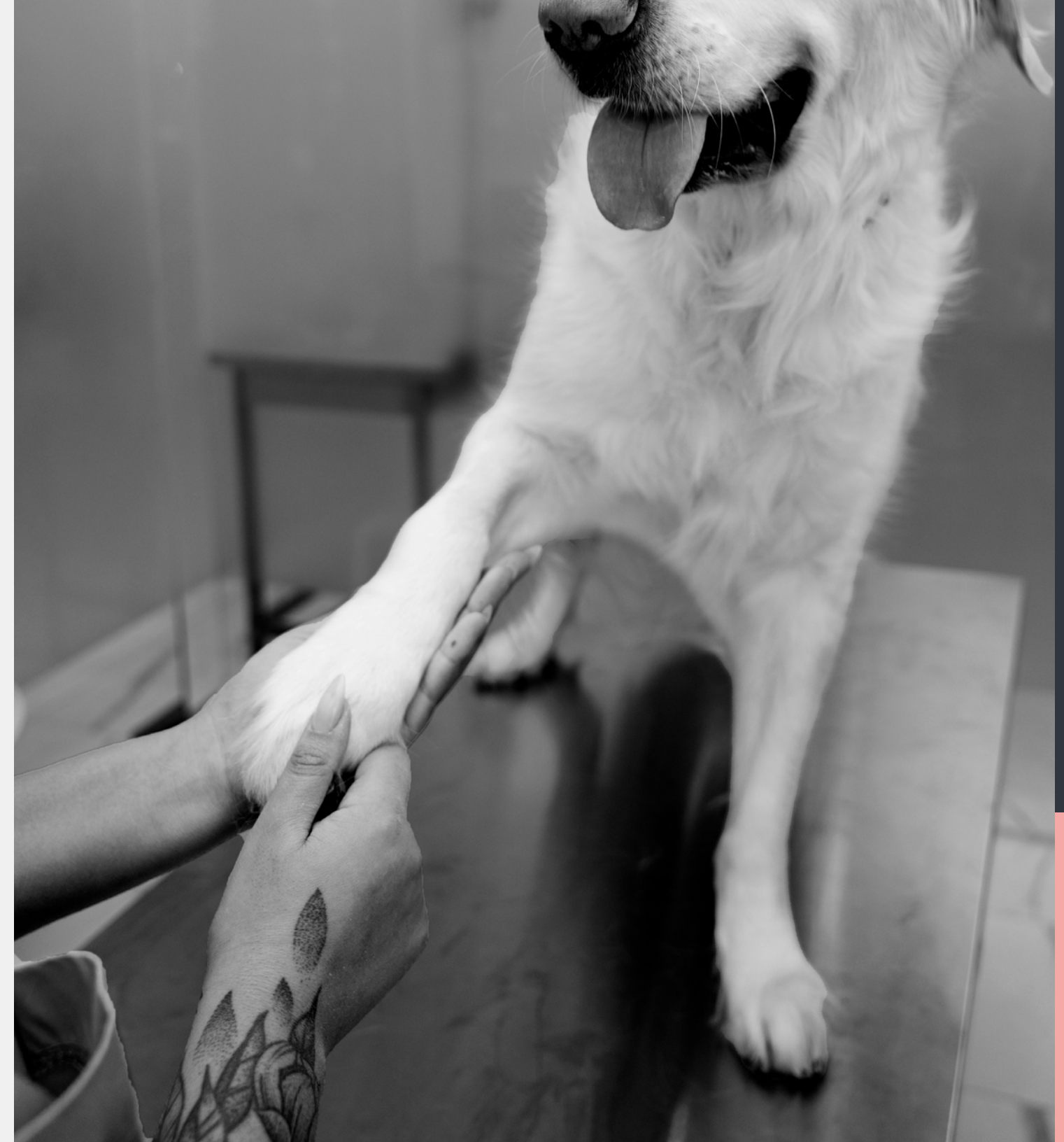
CAPC recommends fecal screening at least twice a year for adult dogs but at least four times during the first year of a dog's life. A dog's health and lifestyle may warrant more frequent testing. Let clients know that simply being outside puts a dog at risk. Some parasites can burrow into a dog's skin or feet. Dogs can also swallow parasites while grooming, nursing, or eating contaminated soil or feces. Clients should also know that some infections can spread from pets to people.⁵

Recommend year-round, broad-spectrum parasite control

A parasite-control program that is effective against intestinal parasites, heartworms, ticks, and fleas provides maximum value for your clients and the best protection for your patients. Make sure your clients understand that they need to keep their pets protected all year long.⁵

Diagnose and treat infections earlier with Fecal Dx[®] antigen testing

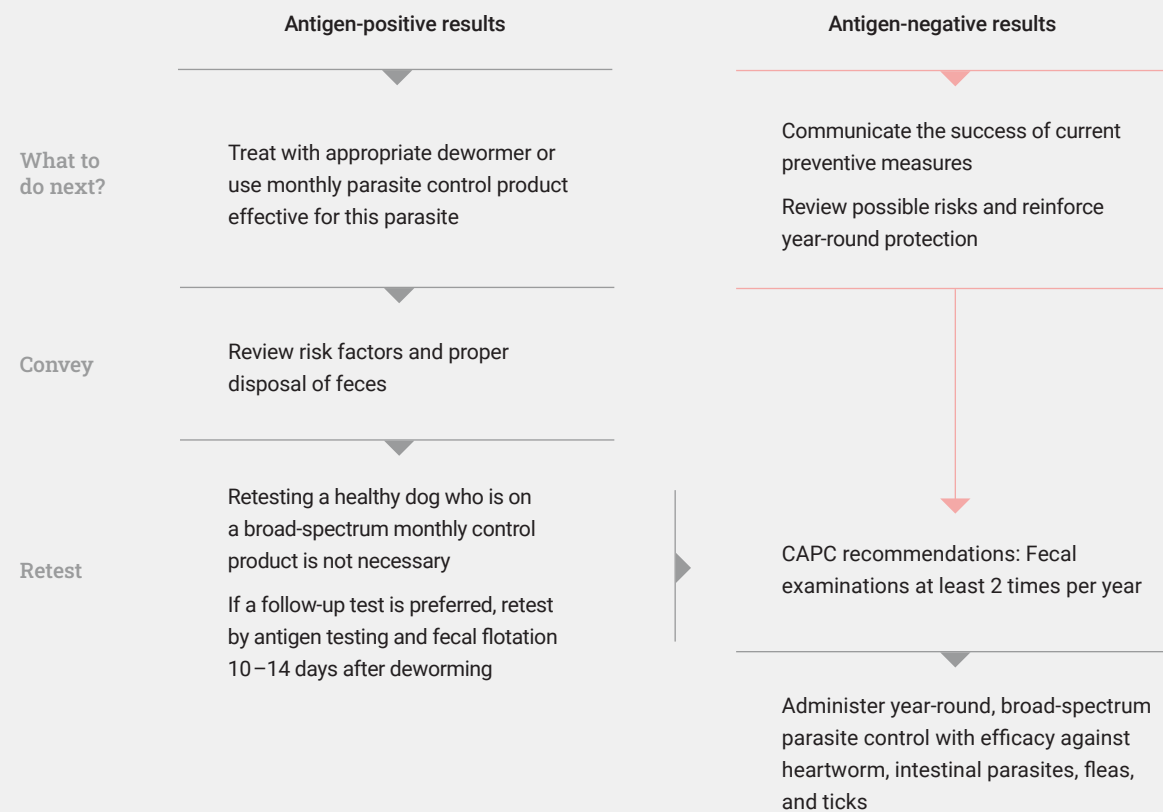
CAPC recommends including fecal antigen testing to diagnose infections, treat patients earlier, and reinforce the proper use of parasite-control products.¹⁻³ Fecal antigen testing identifies prepatent and single-sex infections, providing critical insights for patient management.¹⁻³



Fecal screening for healthy adult dogs

Diagnose hookworm, roundworm, whipworm, and flea tapeworm infections using Fecal Dx® antigen testing. Because the testing detects antigens, positive results confirm the presence of worms in the intestinal tract. This allows you to diagnose infection when worms are not shedding eggs or are caused by worms of a single sex.¹⁻³ Use the following algorithm to guide next steps based on your patient's Fecal Dx antigen testing results.

What to do with your Fecal Dx antigen testing results



Did you know?

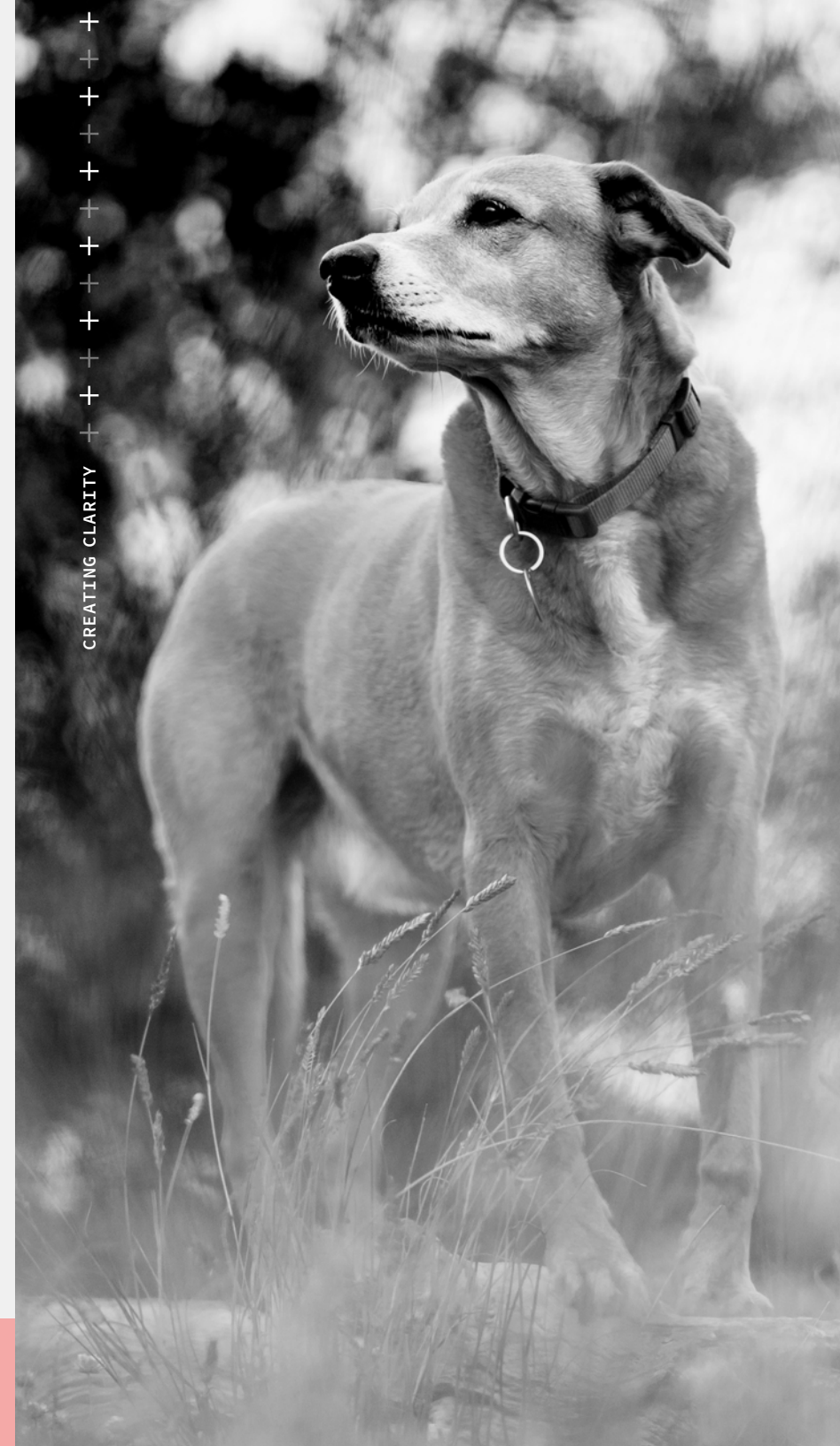
Treatment should be considered for patients that test positive by either antigen testing or egg/proglottid detection.

Reasons for specimens that are antigen positive and egg/proglottid negative may include the following:

- + Absence of eggs and proglottids during the prepatent period
- + Infections caused by single-sex worms
- + Intermittent egg/proglottid shedding

Reasons eggs and proglottids may be identified in specimens that are antigen negative may include the following:

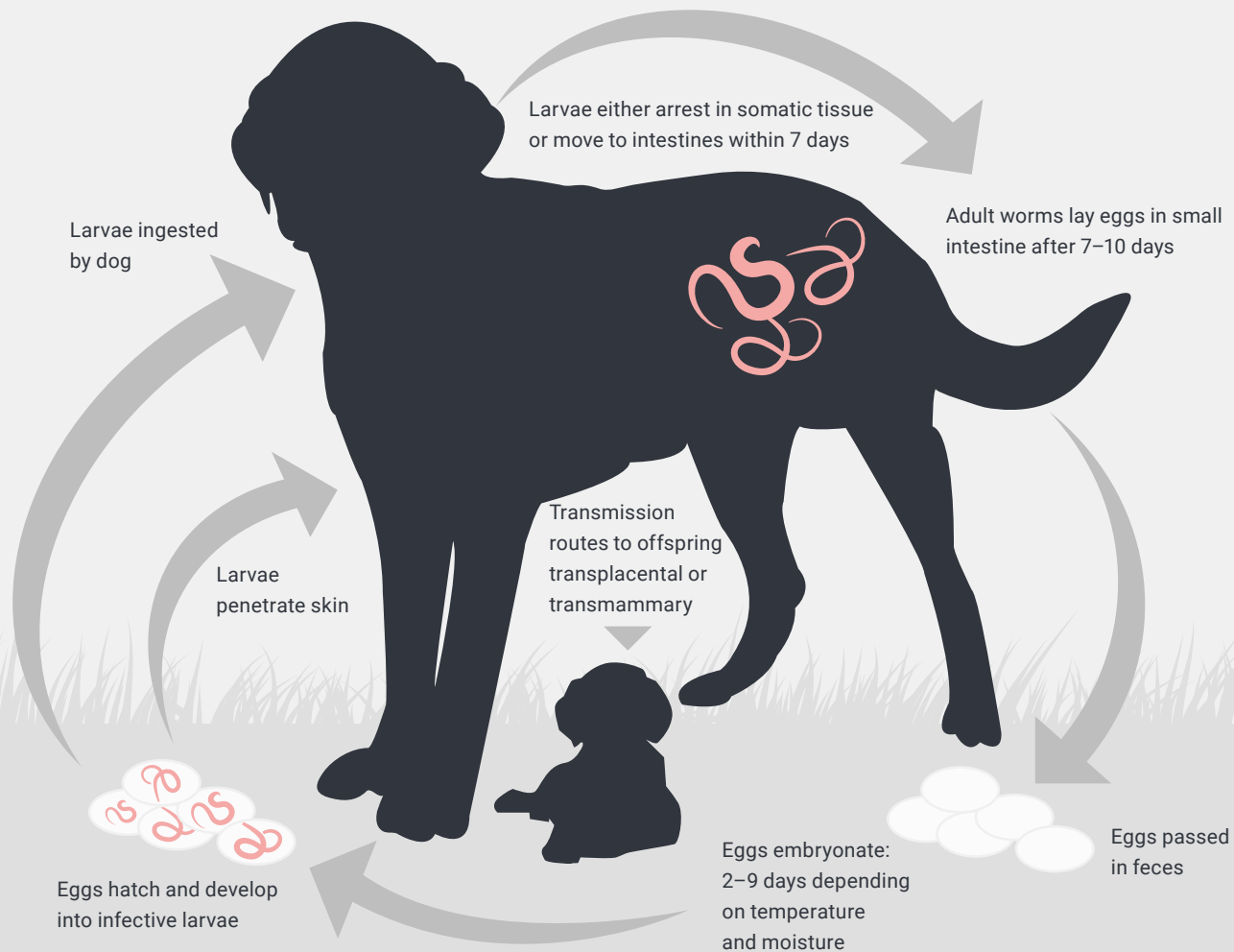
- + Ingestion of infected feces (coprophagy)
- + Antigen quantity is below the level of detection



Hookworms: from infection to presentation¹

Ancylostoma caninum life cycle

Prepatent period for adult dogs: 14–21 days



Clinical presentation

Pale mucous membranes and anemia; ill thrift, failure to gain weight; poor hair coat, dehydration; dark, tarry diarrhea; respiratory disease; foot lesions (dermatitis with erythema, pruritus, and papules).



Did you know?

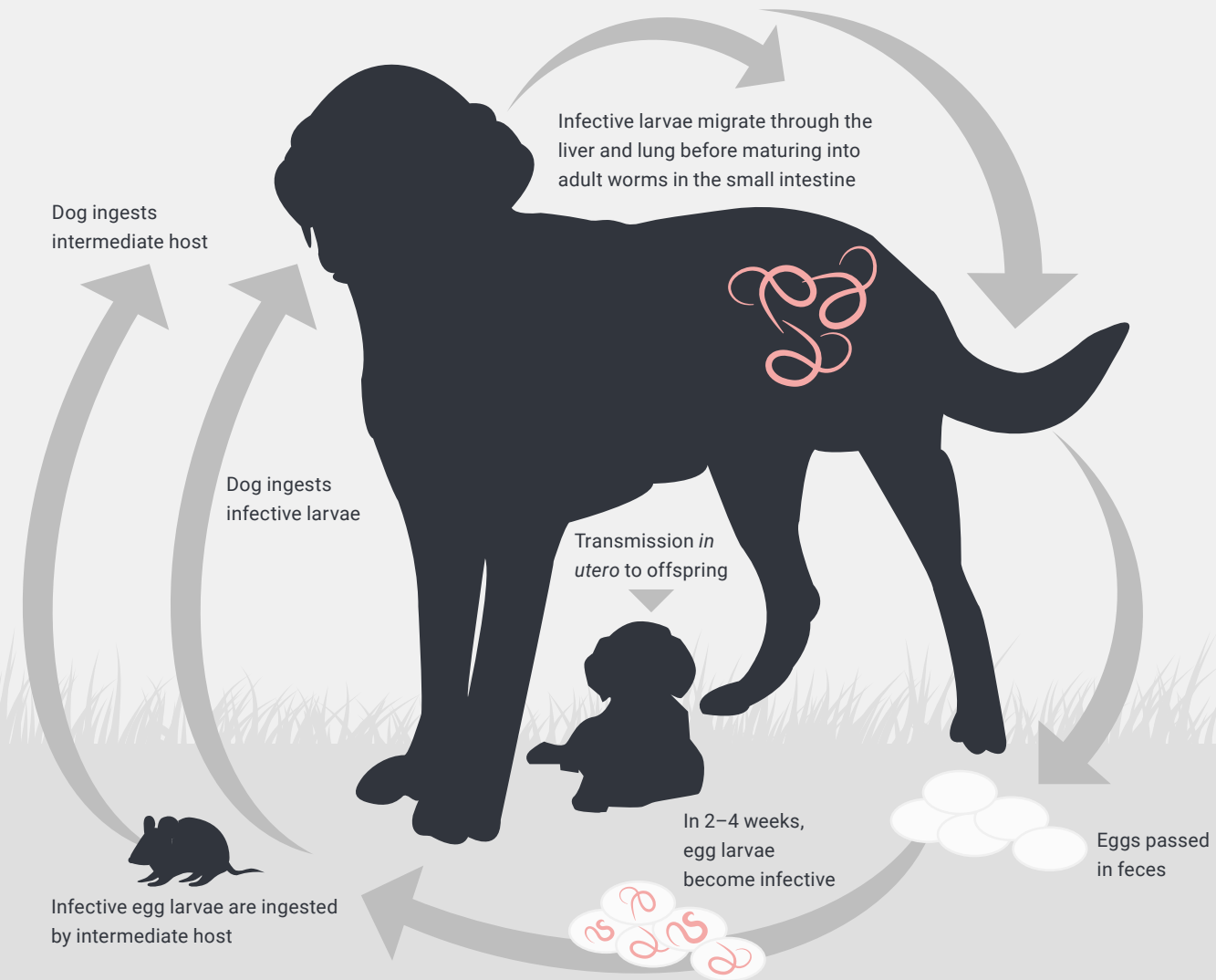
- + Because hookworms have short prepatent periods and the potential for arrested larvae, even pets receiving monthly deworming may have adult worms in their intestinal tract between monthly doses.¹
- + Resistance to dewormers is now documented for *A. caninum*.⁶ If hookworm positive 10–14 days following deworming, a fecal egg count reduction test should be performed.⁷
- + Puppies as young as 10–12 days of age may start shedding eggs if they've been infected through nursing.¹
- + Due to the zoonotic risk and reinfection potential in this parasite, it is important to detect infections before they start shedding eggs into the environment.¹



Roundworms: from infection to presentation²

Toxocara canis life cycle

Prepatent period for adult dogs: 21–35 days



Did you know?

- + One female roundworm can produce 85,000 eggs per day, and these hard-shelled eggs can survive in the environment for years.² With Fecal Dx[®] antigen testing, you can detect infections before roundworms start laying eggs.
- + Due to the zoonotic risk and reinfection potential in this parasite, it is important to detect infections before they start shedding eggs into the environment.²
- + In puppies under 6 months of age, studies have shown more than 30% are infected and shedding *T. canis* eggs.²



Clinical presentation

Diarrhea, vomiting, pot-bellied appearance, coughing. Dogs may cough up or vomit worms. Infections caused by *T. canis* are more common and most severe in dogs less than one year of age.





Clinical presentation

Many infections are subclinical. When present, clinical signs include diarrhea streaked with mucus and fresh blood, weight loss, dehydration, anemia. Extreme cases can result in death.

Did you know?

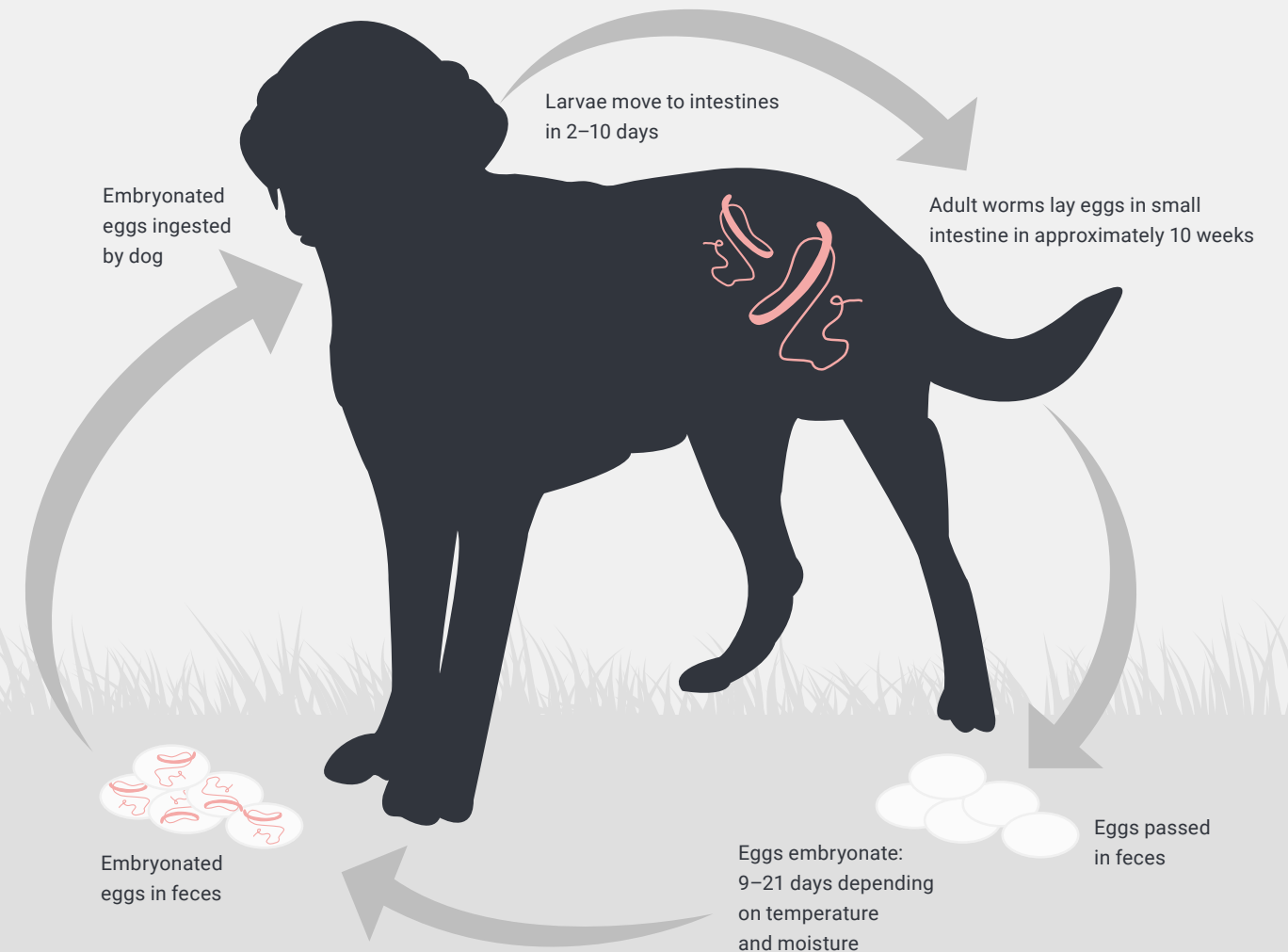
- + A female whipworm can produce as many as 2,000 eggs per day, and these infective whipworm eggs can survive in the environment for several years.³ With Fecal Dx[®] antigen testing, you can detect infections before whipworms start laying eggs.
- + Due to their extended prepatent period, it's unlikely to find eggs being shed in very young puppies,³ but Fecal Dx antigen testing can identify these positive patients during the prepatent period for earlier diagnosis and treatment.



Whipworms: from infection to presentation³

Trichuris vulpis life cycle

Prepatent period for adult dogs: 74–90 days



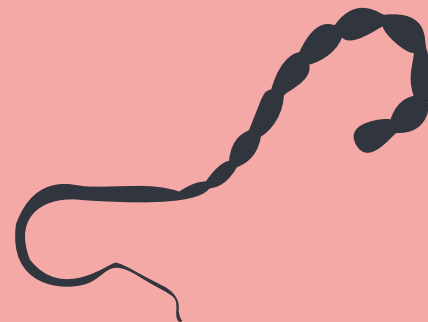
Clinical presentation

Infection may not always be apparent as many are subclinical. While flea tapeworms rarely cause disease, the passage of the proglottids may cause perianal irritation.



Did you know?

- + *D. caninum* is called the “flea tapeworm” because the flea is its intermediate host.⁸
- + Dogs and cats become infected by eating/ingesting an infected flea.⁸
- + Each segment (proglottid) of a flea tapeworm may contain up to 25–30 eggs.⁸
- + Reinfection with *D. caninum* is likely if flea infestations are not controlled.⁸
- + Dogs and cats may be infected with more than one species of tapeworm. The flea tapeworm is most commonly diagnosed.⁹

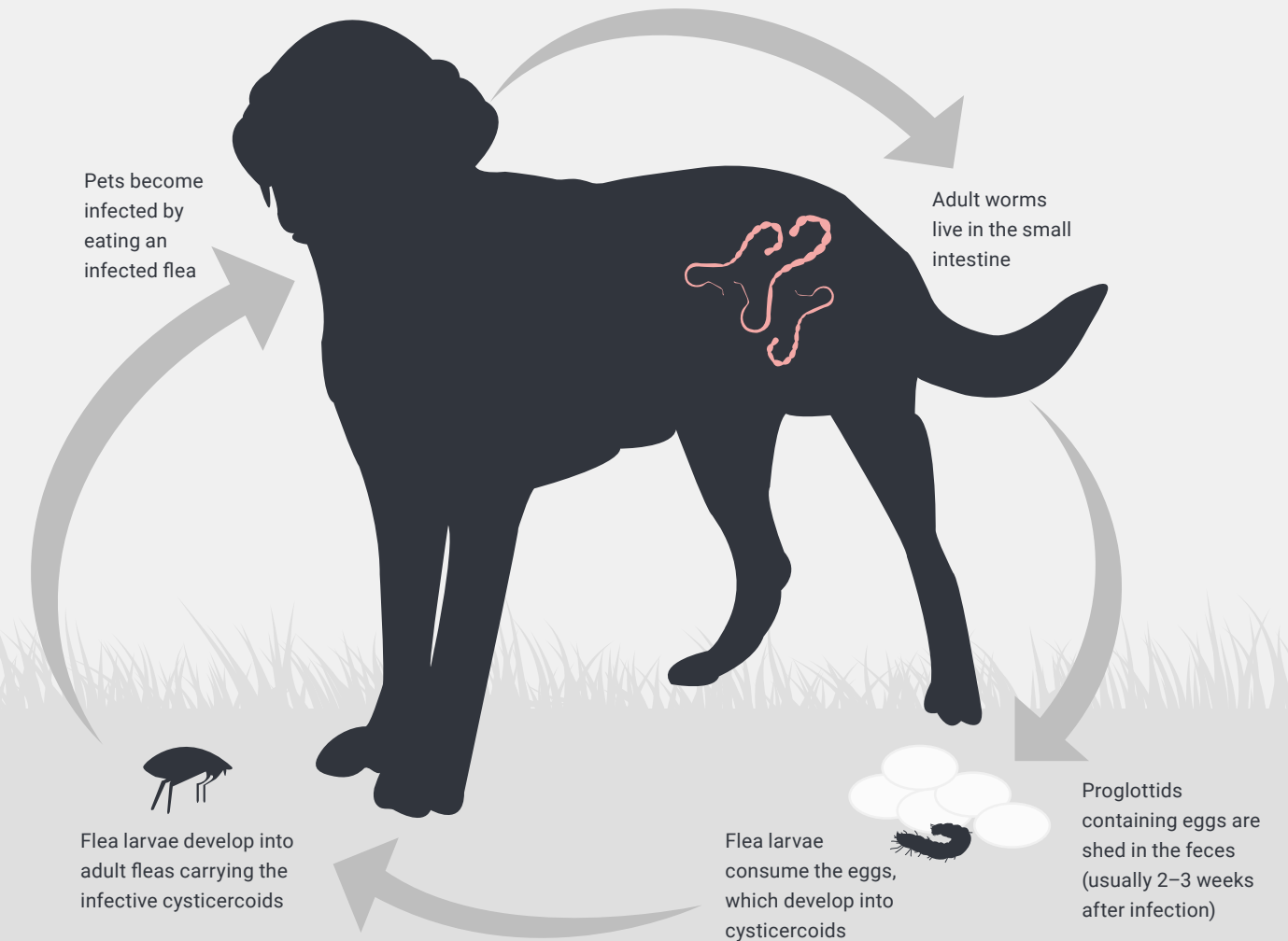


Flea tapeworm: from infection to presentation⁸

Dipylidium caninum life cycle

Prepatent period for adult dogs: 14–35 days^{8,10}

This tapeworm can infect dogs and cats and is spread through ingestion of infected fleas.

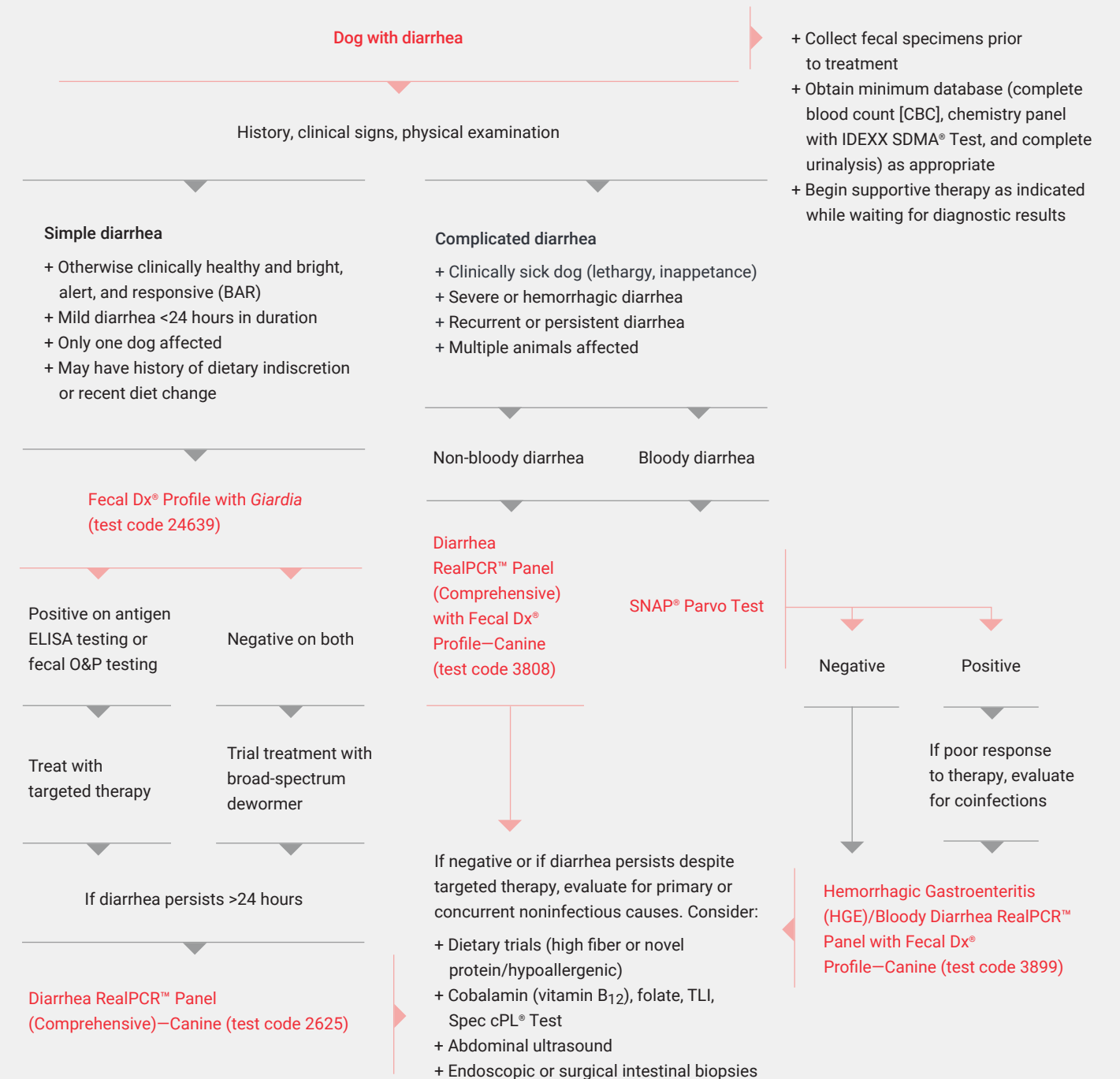


Fecal screening for sick dogs

Rule out infectious diseases by differentiating between simple and complicated diarrhea and testing accordingly. Testing recommendations vary based on the duration and severity of diarrhea and the health and dietary habits of the dog or dogs affected. In simple diarrhea cases of short duration, a *Giardia* antigen by immunoassay or the SNAP® *Giardia* Test is recommended in addition to Fecal Dx® antigen testing and fecal flotation by centrifugation. A more comprehensive diarrhea RealPCR™ panel is recommended in complicated diarrhea cases. Use the following algorithm to guide next steps when assessing sick dogs that present with diarrhea.

Did you know?

RealPCR™ testing expands the scope of detection beyond nematode parasites, coccidia, and *Giardia*, allowing you to detect other important gastrointestinal pathogens, including viruses, bacteria, enterotoxins, and difficult-to-detect protozoa (e.g., *Cryptosporidium*).



How to minimize the threat of infection

In addition to regular veterinary examinations and diagnostic screening, encourage your clients to follow CAPC guidelines.⁵

Food and water

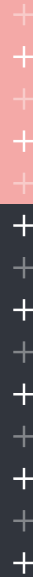
- + Pets should be fed commercial or cooked food.
- + Raw diets are not recommended.
- + Make sure pets have access to fresh water.

Outdoor activity

- + Limit access to wildlife and contaminated feces.
- + Keep dogs on a leash or behind a fence.
- + Keep cats indoors.
- + Cover sandboxes after use.

Hygiene

- + Do not handle animal feces or urine with bare hands.
- + Wash hands immediately after incidental contact with feces.
- + Promptly pick up and dispose of feces from public areas.
- + Promptly remove feces from the yard.





References

1. CAPC guidelines: hookworms. Companion Animal Parasite Council website. Accessed July 13, 2022. www.capcvet.org/guidelines/hookworms
2. CAPC guidelines: ascarid. Companion Animal Parasite Council website. Accessed July 13, 2022. www.capcvet.org/guidelines/ascarid
3. CAPC guidelines: *Trichuris vulpis*. Companion Animal Parasite Council website. Accessed July 13, 2022. www.capcvet.org/guidelines/trichuris-vulpis
4. Adolph C, Barnett S, Beall M, et al. Diagnostic strategies to reveal covert infections with intestinal helminths in dogs. *Vet Parasitol.* 2017;247:108–112. doi:10.1016/j.vetpar.2017.10.002
5. General guidelines for dogs and cats. Companion Animal Parasite Council website. Accessed July 13, 2022. www.capcvet.org/guidelines/general-guidelines
6. Jimenez Castro PD, Howell SB, Schaefer JJ, Avramenko RW, Gilleard JS, Kaplan RM. Multiple drug resistance in the canine hookworm *Ancylostoma caninum*: an emerging threat? *Parasit Vectors.* 2019;12(1):576. doi:10.1186/s13071-019-3828-6
7. Jimenez Castro PD, Kaplan RM. Persistent hookworm infections in dogs. *Clin Brief.* August 2020;59. Accessed July 13, 2022. www.cliniciansbrief.com/article/persistent-hookworm-infections-dogs
8. CAPC guidelines: *Dipylidium caninum*. Companion Animal Parasite Council website. Accessed July 13, 2022. www.capcvet.org/guidelines/dipylidium-caninum
9. Hall EJ, Day MJ. Diseases of the small intestine. In: Ettinger SJ, Feldman EC, Côté E, eds. *Textbook of Veterinary Internal Medicine: Diseases of the Dog and Cat.* 8th ed. Elsevier; 2017:1543.
10. Beugnet F, Labuschagne M, Vos C, Crafford D, Fourie J. Analysis of *Dipylidium caninum* tapeworms from dogs and cats, or their respective fleas—Part 2. Distinct canine and feline host association with two different *Dipylidium caninum* genotypes. Analyse des ténias *Dipylidium caninum* des chiens et des chats, ou de leurs puces respectives - Partie 2. Association distincte des hôtes canins et félins avec deux génotypes différents de *Dipylidium caninum*. *Parasite.* 2018;25:31. doi:10.1051/parasite/2018029