

Heartworm disease: a potentially fatal disease in dogs and cats



WHAT IS HEARTWORM DISEASE?



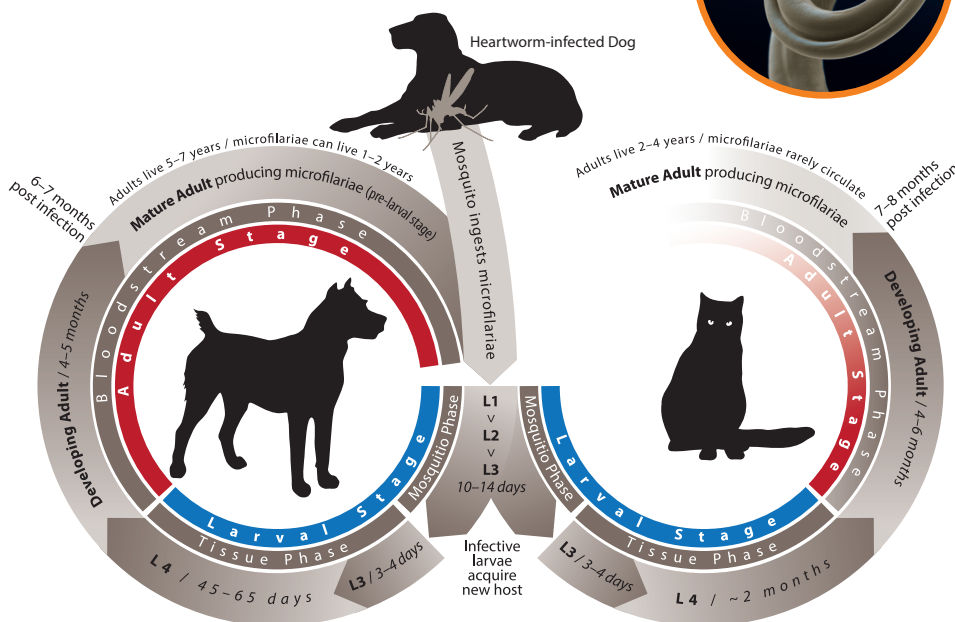
Caused by a **worm** (*Dirofilaria immitis*)



Adult worms live in the heart, producing offspring called **microfilariae** that circulate in the blood



Mosquitoes spread microscopic heartworm larvae from pet to pet when they feed



Created by the American Heartworm Society.

Did you know?

Dogs are the primary source of infection of mosquitoes. In cats, circulating microfilariae are usually absent, or small in number and transient.^{1,2}

Key differences between infections in dogs and cats^{1,2}

Heartworm disease in dogs and cats has many differences, but can cause disease and death in both.

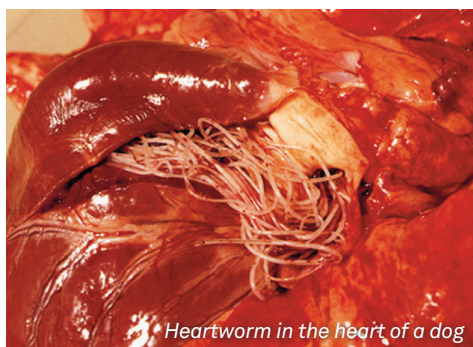
FEATURES OF HEARTWORM INFECTION	DOGS <i>Natural reservoir host of this parasite</i>	CATS <i>A poorer, more resistant host to this parasite</i>
Survival rate of immature stages to adult worms	High	Low
Number of adult worms	Many (>150 in endemic areas)	Few (<6, usually <3)
Reproduction	Mixed infections allowing for production of microfilariae	1/3rd of infections are with male-only, so microfilariae are often not produced

In cats, abnormal migration of heartworm larvae to the central nervous system is more common than in dogs, and can lead to blindness, seizures and death.

Symptoms

Heartworm disease can be asymptomatic or present with non-specific signs:

- Cough
- Difficulty or rapid breathing
- Weight loss
- Lethargy
- Exercise intolerance
- Death



In dogs, symptoms typically develop over time, while in cats, there are often no signs, transient symptoms or a sudden onset of severe symptoms and death.

Heartworm treatment is difficult and costly. All dogs and cats should be protected year round, regardless of lifestyle.

Elanco provides two effective heartworm preventative solutions:

PRODUCT	DOSING FREQUENCY	HOW DOES IT WORK
Milbemax (also Sentinel Spectrum and Interceptor Spectrum)	Monthly	Knock-down – kills larval heartworm present at the time of treatment
Advocate	Monthly	Sustained protection – kills existing and newly arriving larval heartworm throughout the month

Milbemax Tablets for Dogs and Milbemax Tablets for Cats are distinct formulations and should only be administered to dogs and cats respectively.

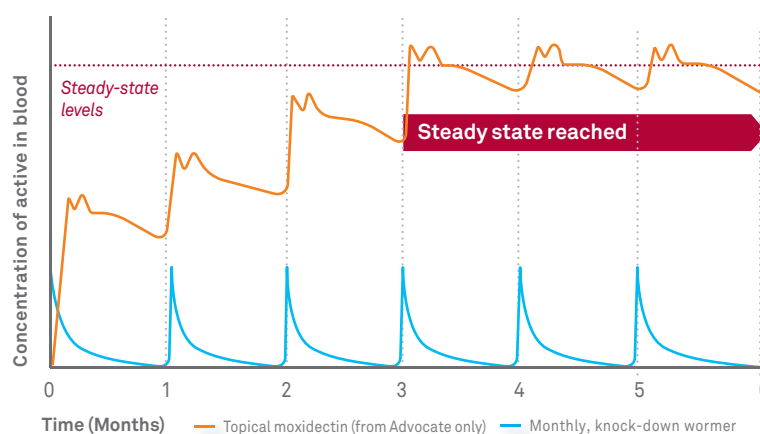


Steady state provides continuous protection against new worm infestations

Advocate for Dogs and Cats is unique. It reaches a steady state after 4-5 consecutive monthly treatments, providing continuous protection against heartworm for the entire month.

The active ingredient, moxidectin, is absorbed through the skin and forms a reservoir in the fat, slowly releasing into the blood.

Research has also shown that a single dose of Advocate for dogs provides protection for at least 30 days.³



Representation of blood levels of active ingredient achieved with Advocate vs a monthly, knock-down wormer

Read product labels for full instructions. For heartworm prevention, Milbemax must be administered every month, preferably on the same date each month.

References: 1. American Heartworm Society 2022, *Current Canine Guidelines for the Prevention, Diagnosis and Management of Heartworm (Dirofilaria immitis) Infection in Dogs*, American Heartworm Society, Wilmington, Delaware, viewed 13 April 2022. 2. American Heartworm Society 2022, *Current Feline Guidelines for the Prevention, Diagnosis and Management of Heartworm (Dirofilaria immitis) Infection in Cats*, American Heartworm Society, Wilmington, Delaware, viewed 13 April 2022. 3. Bowman DD et al. *Parasit & Vectors* 2017;10 (Suppl 2:478):59-64. Advocate for Dogs contains imidacloprid 100g/L and moxidectin 25g/L. © 2022 Elanco or its affiliates. Elanco Australasia Pty Ltd (ABN 64 076 745 198), Level 3, 7 Eden Park Drive, Macquarie Park NSW 2113. All trade marks are the property of their respective owners. For further information contact: 1800 995 709 from anywhere in Australia Monday to Friday or email productsupportau@elancoah.com. ELAN0172 11/22. PM-AU-22-0219.