IMPORTANT NEW UPDATE

INTERNAL PARASITE PREVALENCE REPORT

Heartgard®
(ivermectin/pyrantel)

U.S.A. 2019
Be sure your clients know that hookworm larvae and roundworm eggs can often be found in fecal matter and contaminated:

- Blades of grass
- Dirt and soil
- Dog and children’s toys/balls left outside

**The Most Prevalent Intestinal Parasites* of Dogs in the United States Are Hookworms and Roundworms.**

In addition to infecting dogs, hookworms and roundworms are zoonotic. The most prevalent intestinal parasites* of dogs in the United States are hookworms and roundworms.1

**2019 Intestinal Parasites Prevalence Maps**

* GI nematodes only.

**Key Takeaways:**

1. Hookworms and roundworms are more prevalent compared to whipworms.
2. Hookworm cases are on the rise, year over year.

**Year-After-Year, Intestinal Parasites Continue to Be a Threat for Dogs Throughout the Country.**

It is important to remind pet owners that roundworm eggs can survive in the environment for years,2 which raises the risk of reinfection.

**Intestinal Parasites | Dog | Annual Totals**

<table>
<thead>
<tr>
<th>Year</th>
<th>Hookworms</th>
<th>Roundworms</th>
<th>Whipworms</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>75,650</td>
<td>49,792</td>
<td>18,116</td>
</tr>
<tr>
<td>2013</td>
<td>77,650</td>
<td>51,792</td>
<td>18,716</td>
</tr>
<tr>
<td>2014</td>
<td>79,650</td>
<td>53,792</td>
<td>19,316</td>
</tr>
<tr>
<td>2015</td>
<td>81,650</td>
<td>55,792</td>
<td>19,916</td>
</tr>
<tr>
<td>2016</td>
<td>83,650</td>
<td>57,792</td>
<td>20,516</td>
</tr>
<tr>
<td>2017</td>
<td>85,650</td>
<td>59,792</td>
<td>21,116</td>
</tr>
<tr>
<td>2018</td>
<td>87,650</td>
<td>61,792</td>
<td>21,716</td>
</tr>
</tbody>
</table>

**Infection Risk**

- No data
- Low
- Medium
- High

**Data source:** The Companion Animal Parasite Council (CAPC) Prevalence Maps.
YOUR CLIENTS MAY NOT REALIZE THAT HOOKWORMS AND ROUNDWORMS CAN CAUSE SERIOUS HEALTH PROBLEMS IN DOGS.

Treating these infections is more expensive than using a monthly heartworm preventive to treat and control them.⁴

RECOMMEND A PRODUCT THAT PREVENTS HEARTWORM DISEASE AND TREATS AND CONTROLS HOOKWORMS AND ROUNDWORMS.

WHAT CLIENTS NEED TO KNOW ABOUT HOOKWORMS AND ROUNDWORMS

1. Hookworms and roundworms can cause serious health problems and lasting damage in dogs
2. Hookworms and roundworms are zoonotic threats that can infect people, too
3. By the time a hookworm or roundworm infection can be diagnosed, parasite eggs and larvae have already been spread into the pet’s surrounding environment where they can infect other pets and people in the home
4. Monthly treatment and control helps reduce environmental contamination

OVER 90% OF PUPPIES UNDER 3 MONTHS OLD ARE INFECTED WITH ROUNDWORMS.⁵

HOOKWORMS

Transmission to Dogs
Hookworm larvae can be transmitted through:
- Ingestion of contaminated soil or grass
- Larvae on soil and grass that penetrate the skin
- The milk of infected mothers nursing their pups

Signs of Infection
- Weakness
- Diarrhea
- Pale gums
- Weight loss

ROUNDWORMS:

Transmission to Dogs
Roundworm larvae can be transmitted through:
- Ingestion of infective ova from soil or hair coat
- Transplacentally
- Rarely, via the milk of newly infected mothers nursing their pups

Signs of Infection
- Diarrhea
- Weight loss
- Worms in feces
- Swollen abdomen
- Vomiting
- Malnutrition
- Weakness
- Lack of appetite

RECOMMEND A PRODUCT THAT PREVENTS HEARTWORM DISEASE AND TREATS AND CONTROLS HOOKWORMS AND ROUNDWORMS.
Almost 73% of U.S. pediatricians reported a case of parasitic infection in children.⁶

Parasite eggs and larvae exist in contaminated yards. Roundworm larvae actually climb up blades of grass with the morning dew, to be more available to infect passersby.

Infecive hookworm larvae can pass through a person's skin after contact with contaminated grass, soil or sand. Hookworm larvae migrate under the skin causing extreme irritation and itching.

Roundworm eggs are often accidentally ingested, dirty hands to mouth. Roundworm larvae hatch out in the stomach, and can migrate throughout the body. Larval infections of the retina (right) cause damage and affect vision, potentially blindness.

TO HELP PREVENT HUMAN CASES, OWNERS SHOULD: ¹

1. Wash hands frequently
2. Keep yards free of feces
3. Prevent children from playing in sand boxes

For information about safe and healthy pet ownership, visit the CDC website www.cdc.gov/healthypets

HOOKWORMS FACTS:

- Hookworm larvae migrate under the skin, causing severe itching and irritation.
- Hookworm infections can actually migrate to the lungs of humans, causing pneumonia.
- A single female hookworm in an infected dog can lay up to 20,000 eggs per day.⁶

ROUNDWORMS FACTS:

- The CDC reports 10,000 people in the US are infected with roundworms each year⁹
- Can cause impaired or loss of vision⁹
- Enter the body via accidental ingestion
- A single female roundworm in an infected dog can lay up to 100,000 eggs per day⁹
HEARTWORM DISEASE IS A YEAR-ROUND RISK.

Experts Agree on the Need for Year-Round Protection

- The AHS, AAHA, AVMA and CAPC all recommend year-round protection for heartworm prevention.10,11,12

Heartworm Incidence

The severity of heartworm incidence as shown in this map is based on the average number of cases per reporting clinic. Some remote regions of the United States lack veterinary clinics, therefore we have no reported cases from these areas.

U.S. HEARTWORM PREVALENCE MAP13

Average number of cases per reporting clinic

- < 1 case/clinic
- 1-5 cases/clinic
- 6-25 cases/clinic
- 26-50 cases/clinic
- 51-99 cases/clinic
- 100+ cases/clinic

1,000,000 DOGS ARE ESTIMATED TO BE HEARTWORM POSITIVE IN THE UNITED STATES EACH YEAR.

The most common dog owner misperceptions about heartworm disease:

1. MYTH: Heartworm disease is easy to treat.
   TRUTH: Treatment is expensive and can be painful for the dog.

2. MYTH: My dog is not at risk.
   TRUTH: All dogs are at risk.

3. MYTH: I would notice if my dog had it.
   TRUTH: Clinical signs can develop so slowly that infection can go undetected, or occur so suddenly that emergency surgery is necessary to save the dog’s life.

   TRUTH: Once a dog has heartworm disease that requires treatment, the damage to the lungs and pulmonary arteries remains for the rest of its life.

EVEN DURING WINTER MONTHS, THE RISK OF HEARTWORM TRANSMISSION NEVER REACHES ZERO.13

Urban “heat islands,” i.e., the masses of buildings and parking lots that retain heat during the day and radiate it at night, can protect mosquitoes and extend transmission season.13

DOGS ARE ESTIMATED TO BE HEARTWORM POSITIVE IN THE UNITED STATES EACH YEAR.
IMPORTANT SAFETY INFORMATION:

HEARTGARD® Plus (ivermectin/pyrantel) is well tolerated. All dogs should be tested for heartworm infection before starting a preventive program. Following the use of HEARTGARD Plus, digestive and neurological side effects have rarely been reported. For more information, please see full prescribing information or visit www.HEARTGARD.com.

IMPORTANT QUESTIONS TO CONSIDER WHEN MAKING YOUR RECOMMENDATION

1. Does the product you’re recommending regularly treat and control hookworms and roundworms?

2. Do your clients understand the cost difference between treatment and prevention of heartworm disease?

3. Is the product you’re recommending safe to give a puppy during their first visit?

4. Do your clients understand the threat of zoonotic parasites?

THE BRAND THAT PET OWNERS KNOW, LOVE AND ASK FOR:

HEARTGARD® Plus (ivermectin/pyrantel) is the heartworm prevention product that pet owners trust. Pet owners ask for HEARTGARD by name more than any other brand.15

FOR EFFECTIVE PREVENTION, FORM MATTERS:

HEARTGARD® Plus is the dose that gets in the dog and stays in the dog to prevent heartworm disease. Plus, it’s the Real-Beef Chewable that dogs prefer.16

PROVEN EFFICACY AGAINST HEARTWORMS FOR OVER 32 YEARS

In three decades, more than 2 billion doses of HEARTGARD® have been dispensed, preventing heartworm disease in millions of dogs.17

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CAUTION: Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian.

INDICATIONS: For use in dogs to prevent canine heartworm disease by eliminating the tissue stage of heartworm larvae (Dirofilaria immitis) for a month (30 days) after infection and for the treatment and control of ascarids (Toxocara canis, Toxascaris leonina) and hookworms (Ancylostoma caninum, Uncinaria stenocephala, Ancylostoma braziliense). HEARTGARD® Plus (ivermectin/pyrantel) should be administered orally at monthly intervals at the recommended minimum dose level of 6 mg of ivermectin per kilogram (2.72 mcg/lb) and 5 mg of pyrantel (as pamoate salt) per kg (2.27 mg/lb) of body weight. The recommended dosing schedule for prevention of canine heartworm disease and for the treatment and control of ascarids and hookworms is as follows:

<table>
<thead>
<tr>
<th>Dog Weight</th>
<th>Chewables Per Month</th>
<th>Ivermectin Content</th>
<th>Pyrantel Content</th>
<th>Color Coding On Foil Backing and Carton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 25 lb</td>
<td>1</td>
<td>68 mcg</td>
<td>57 mg</td>
<td>Blue</td>
</tr>
<tr>
<td>26 to 50 lb</td>
<td>1</td>
<td>136 mcg</td>
<td>114 mg</td>
<td>Green</td>
</tr>
<tr>
<td>51 to 100 lb</td>
<td>1</td>
<td>272 mcg</td>
<td>227 mg</td>
<td>Brown</td>
</tr>
</tbody>
</table>

HEARTGARD Plus is recommended for dogs 8 weeks of age and older. For dogs over 100 lb use the appropriate combination of these chewables.

ADMINISTRATION: Remove only one chewable at a time from the foil-backed blister card. Return the card with the remaining chewables to its box to protect the product from light. Because most dogs find HEARTGARD Plus palatable, the product can be offered to the dog by hand. Alternatively, it may be added intact to a small amount of dog food. The chewable should be administered in a manner that encourages the dog to chew, rather than to swallow without chewing. Chewables may be broken into pieces and fed to dogs that normally swallow treats whole.

Care should be taken that the dog consumes the complete dose, and treated animals should be observed for a few minutes after administration to ensure that part of the dose is not lost or rejected. If it is suspected that any of the dose has been lost, redosing is recommended.

HEARTGARD Plus should be given at monthly intervals during the period of the year when mosquitoes (vectors), potentially carrying infective heartworm larvae, are active. The initial dose must be given within a month (30 days) after the dog’s first exposure to mosquitoes. The final dose must be given within a month (30 days) after the dog’s last exposure to mosquitoes. When replacing another heartworm preventive product in a heartworm disease preventive program, the first dose of HEARTGARD Plus must be given within a month (30 days) of the last dose of the former medication.

If the interval between doses exceeds a month (30 days), the efficacy of ivermectin can be reduced. Therefore, for optimal performance, the chewable must be given once a month or on about the same day of the month. If treatment is delayed, whether by a few days or many, immediate treatment with HEARTGARD Plus and resumption of the recommended dosing regimen will minimize the opportunity for the development of adult heartworms.

When replacing another heartworm preventive product in a heartworm disease preventive program, the first dose of HEARTGARD Plus must be given within a month (30 days) of the last dose of the former medication.

Hypersensitivity reactions with HEARTGARD Plus are rare. A mild hypersensitivity-type reaction, presumably due to dead or dying microfilariae and particularly involving a transient diarrhea, has been observed in clinical trials with ivermectin alone after treatment of some dogs that have circulating microfilariae.

The following adverse reactions have been reported following the use of HEARTGARD Plus: vomiting, diarrhea within 24 hours of dosing was rarely observed (1.1% of administered doses). The following adverse reactions have been reported following the use of HEARTGARD Plus: vomiting, diarrhea, mydriasis, ataxia, staggering, convulsions and hypersalivation.

SAFETY: HEARTGARD Plus has been shown to be bioequivalent to HEARTGARD, with respect to the bioavailability of ivermectin. The dose regimens of HEARTGARD Plus and HEARTGARD are the same with regard to ivermectin (6 mcg/kg). Studies with ivermectin indicate that certain dogs of the Collie breed are more sensitive to the effects of ivermectin administered at elevated dose levels (more than 16 times the target use level) than dogs of other breeds. At elevated doses, sensitive dogs showed adverse reactions which included mydriasis, depression, ataxia, tremors, drooling, paroxysm, excitability, stupor, coma and death. HEARTGARD demonstrated no signs of toxicity at 10 times the recommended dose (80 mcg/kg) in sensitive Collies. Results of these trials and bioequivalence studies support the safety of HEARTGARD products in dogs, including Collies, when used as recommended.

HEARTGARD Plus has shown a wide margin of safety at the recommended dose level in dogs, including pregnant or breeding bitches, stud dogs and puppies aged 6 or more weeks. In clinical trials, many commonly used flea collars, dips, shampoos, anthelmintics, antibiotics, vaccines and steroid preparations have been administered with HEARTGARD Plus in a heartworm disease prevention program.

HOW SUPPLIED: HEARTGARD Plus is available in three dosage strengths (See DOSAGE section) for dogs of different weights. Each strength comes in convenient cartons of 6 and 12 chewables.

For customer service, please contact Merįal at 1-888-637-4251.

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