



## Greyhounds & Hookworm (Revised 1/7/2018)

### Important Questions:

#### What is Prison Greyhounds recommended treatment for hookworm?

This is a very important question! We have learned (the hard way) that the hookworm in today's greyhound is NOT the hookworm that the breed was dealing with 10 years ago, maybe even 5. We believe now that it is coming from the farms, and the brood mammas, before the greyhounds even reach the racing kennels. It is not just one specific track. Today's greyhound hookworm does not respond to the medications that used to be very effective, such as Panacur and Heartguard. Unfortunately we discovered that these are the medications that most greyhound adopter's veterinarians are prescribing, with no results. We are not parasitologists to tell you how the worm has 'morphed', nor are we veterinarians. But we have consulted with both. We also confirmed our research with the veterinarian who works with these greyhounds at the race track. He was also intrigued by the new resistant hookworm. So this is what we learned. And we have also seen proof that our recommendation works. To date, it is the only thing we have found that works.

#### During infestation time:

- Every 14 days, we strongly recommend that you treat with both **Drontal Plus** and **Advocate (also known as Advantage Multi)**. Not every veterinarian carries these medications so at the end we will tell you where you can get them.

Use Drontal Plus XL (35kg), every 14 days (2 weeks). At the same time, also use Advocate (aka Advantage Multi) every 14 days. Both on the same day. Continue until the hookworm is gone. The good news – this works. The bad news, in case of heavy infestation, it can take 5-6 months. Our practice is to dose the new arrivals on New Dog Day and continue to dose every 14 days until adoption. Then we suggest the adopter continues the dosing until hookworm is gone.

#### Why might it take that long?

**The Drontal Plus** tablet kills every ADULT hookworm in your dog, every time you dose him. But it cannot reach the eggs/larva in the tissue, waiting to hatch.

**The Advocate (Advantage Multi)**, which you may recognize as a topical monthly heartworm/flea preventive treatment, kills the eggs/larva in the tissue where the Drontal cannot reach. The active ingredient in Advocate which does this is the **moxidectin**. We have not found any other monthly canine medication that contains moxidectin. **Moxidectin** protects against the "larval leak" as the imbedded eggs hatch in the tissue. But it takes multiple applications of the Advocate to build up a resistance in the tissue to the hookworm. We accomplish our desired result by increasing the dosage frequency (from monthly to every 14 days).

The gruesome, nasty secret is that as the adult hookworm dies and evacuates the intestine, that is the very trigger which the baby hookworm larva is waiting for. The death and elimination of the adult worm cause the larva to grow. So it starts to repeat the cycle. Larval leak is when the young parasite "leaks" out of the tissue into the intestine (or organ) and attaches to the sides with his teeth. The moxidectin needs to build up, over time, in the tissue to what parasitologists call "**steady state**". At that level, the eggs and larva cannot live, and they can no longer replace the adult hookworms that have also been killed off. You have protection against hookworm! Finally!

Because this can take up to 5 or 6 months, we suggest that adopters treat their greyhounds until this period is over, and only then return to the veterinarian with a fecal sample for confirmation. You will save money by simply investing in the medications rather than paying for more frequent testings. The medication is reasonable in price, especially considering that you need to dose your greyhound with a monthly heartworm preventive anyways. The Advocate (Advantage Multi) will also serve as your heartworm / flea preventive while you are also treating for hookworms.

During this infestation time, it is safe to dose every 14 days, but you will return to monthly-only doses of Advocate once the hookworm has been confirmed to be gone by a fecal. Then you can continue with Advocate as your monthly heartworm preventive, or switch to another brand if desired. During treatment time, it should be the only heartworm preventive that you use.

### **Can I use a different medication instead of Advocate (aka Advantage Multi) to get rid of Hookworm?**

No. We repeat: We have had numerous adopters try other medications at their veterinarian's suggestion. All we know is that the adopter lost a lot of valuable time and expense. Panacur, Ivermectin, Heartguard, these are the ones tried the most. Every greyhound on the farm and in the kennel is dosed with these medications. Often as frequently as every 2 weeks, month after month, year after year. We presume that the hookworm develops immunity to the medicine. Hookworm can probably only be eradicated after the greyhound leaves the racing kennel and moves into a home environment. You have to get the dogs away from heavy exposure on a daily basis. That means the time after retirement is the best time to treat them. But you need an effective medication.

If you have young children, you can put a lightweight t-shirt over your greyhound while his topical dosage of advocate is soaking into his skin. This will prevent them from transferring the medication onto themselves.

### **Why might I see blood in the stools, or blood in vomit?**

While the greyhound has hookworm, you can expect some blood with his stools. (We have occasionally seen it in vomit, but not as often.) Don't panic! This is an encouraging sign that your treatment is working. The adult hookworms have tiny teeth that anchor to the intestinal lining so they can feed on tissue fluids and blood, while injecting an anti-coagulant substance. This substance (found in hookworm saliva) can cause continued bleeding for a while after the hookworm has detached from the feeding site (during the process of dying). There are literally very small ulcerations or wounds left behind, that still bleed for a short time after the medication kills the adult worm. The blood may come and go in cycles, according to the dosing schedule. The color may even be very dark red or almost black and tarry.

### **What can I do about diarrhea, loose stools?**

If the stool is too loose, you can add canned pumpkin (pure pumpkin only, not pie filler). Our favorite solution however is the unflavored 100% Psyllium husk powder at Walgreens (known by the brand name **Wal-Mucil**). It is found in the same section as the flavored Metamucil. (Do not use Metamucil, nor Benefiber, nor anything with sweetener or sugar.) For every cup of kibble that you feed, mix 1 tablespoon of **Wal-Mucil** into 8 ounces of cold water, and pour on top of every meal. Feed immediately after adding the mixture. Results are immediate with the next poop cycle! Metronidazole can also help to soothe and protect the gastro tract. Keep the yard cleaned up of dog waste. The added advantage to the **Wal-Mucil** is that it 'gels' the poop together so yard cleanup is much easier than with an untreated, very loose stool. The gelled poop rolls easily onto the cleanup tool.

**If your veterinarian would like to consult with Dr. Ken Simpson of Monon Animal Center**, he is open to confirming our treatment plan. Below is an email that Dr. Ken Simpson gave me permission to circulate.

Hi Mary,

As we discussed earlier today, your foster greyhound's fecal was positive for hookworm eggs. Your foster greyhound may have a problem getting rid of hookworms because of a syndrome called "larval leak". Advantage Multi is a good option (in addition to your Drontal Plus treatments) because that product keeps moxidectin levels continuously in the body rather than intermittently. In larval leak syndrome, it seems that recurrent and persistent hookworm infection results in some encysted larvae that periodically get released and make their way to the intestinal tract and mature into an adult, reproductive infection. Theoretically, encysted larvae reactivate (which is the basis of transmammary and transplacental infections) and this is why routine antiparasitics fail to clear dogs of their infection. Those drugs simply can't reach the encysted larvae. Another possibility is that it is just a case of reinfection due to environmental contamination. Dogs on heartworm prevention like Heartguard Plus can be reinfected very soon after they receive those medications. The reason is the active ingredient that kills hookworms (pyrantel) in Heartguard Plus is gone in a day or two and if the property is infested with hookworm, the dog can immediately get reinfected. Fourteen days later the hookworms are laying eggs and reinfesting the property. Another 15 or so days later, the owner gives Heartguard plus again. By then the hookworms have been laying eggs for 15 or so days, then get killed off again... but in a day or two are reinfected. So in these cases, the thing to do is to re-treat in the middle (or every 2 weeks) to stop them from reinfesting the property. Picking up poop helps too! Again, Advantage Multi helps in this scenario because it has extended durations of activity.

NOTE: The manufacturer of Advantage Multi (Bayer) recommends that due to the zoonotic potential in the case of hookworms, dogs who are positive should be dewormed twice at 2 week intervals with regular deworming agents such as Drontal Plus or Panacur. I was told there are no speed of kill studies for the intestinal parasites. Peak serum levels for Advantage Multi are in 5-7 days, but the Bayer rep I spoke to could not say how quickly the worms are affected, so, at least for the initial deworming, it is best to do the Drontal Plus or Panacur, but then follow up with the Advantage Multi in 2 weeks and keep it going monthly.

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### **Where can I buy these medications, if my vet only prescribes Panacur and Heartguard?**

If you have problems persuading your veterinarian to stock these specific medications, or need a good inexpensive source, we get our parasite 'killers' here: [www.Petsupplyexpress.com](http://www.Petsupplyexpress.com)

We have always been very happy with their service. It ships from the UK, no prescription required. Your greyhound was tested before coming to Indiana, and is heartworm negative, so you do not need the prescription. When we had a veterinarian on our board of directors, she researched and confirmed that these are genuine, not counterfeit. From the day we opened our doors, we have used this supplier as a means of cost effective treatment.

- Advantage Multi / Advocate for dogs over 55#, blue box, 6 tubes for \$65 (@ \$11 dose)
- Drontal Plus for dogs 6 tablets for \$75 ( @ \$13 dose)

### **If you find another solution....**

You now know more than you ever desired to know about hookworm!!! We learned this by experience over time. If we learn more we will be glad to share. If you find another remedy, we'd love to hear your solution also. But to date, this is the only treatment we have proven effective.

Revised: 9/30/17