

# How to Care for a Dog After Heartworm Adulticide Treatment

## BACKGROUND

Heartworm disease is a serious but treatable health problem. It is caused by *Dirofilaria immitis*, a worm that resides in the circulation (heart and lungs) of dogs and cats and is transmitted from animal to animal by mosquitoes.

Heartworm adulticide medication, a prescription veterinary drug called *melarsomine* (Immiticide), is a set of injections that kill the heartworms in a dog; it is worth noting that this medication cannot be used safely in a cat. It is extremely important that the dog's worms die gradually. Too sudden a worm kill can cause the dead worms to obstruct blood flow and could be life-threatening. *Exercise restriction after a dog has received heartworm adulticide injections is the single most important thing you can do to prevent harm related to heartworm disease during treatment.*

The goal of home care after heartworm adulticide injections is to preserve a state of minimal to no symptoms for the entire posttreatment period while the worms die slowly and are gradually destroyed by the body. This requires strict exercise restriction, which is the cornerstone of postinjection care at home. Allowing a dog to run and play during this period is extremely dangerous (life-threatening) and must be avoided. See below.

## GETTING STARTED

With minor variations, treatment of heartworm disease typically takes 2-5 months to complete. The most important thing you can do during the treatment is to restrict your dog's physical activity to a bare minimum of short leash walks for bodily functions (urinating, defecating) only.

Your dog will first need to receive an antibiotic, doxycycline, which weakens the heartworms and makes the heartworm adulticide injections most effective. You should give this antibiotic to your dog until the veterinarian directs you to stop, typically once or twice a day for a period of 1-2 months leading up to (and overlapping with) the adulticide injection treatment. Some dogs develop indigestion from this antibiotic, so be sure to contact your veterinarian to discuss an alternative if you observe loss of appetite or vomiting.

Exercise restriction must begin immediately on the day of the first heartworm adulticide injection. In most cases, injections are given as 2 sets: 1 injection initially, then 4 weeks later, 2 more injections given 24 hours apart. Therefore, for most dogs, the restriction of activity lasts a total of 8 consecutive weeks. For playful, energetic dogs, this can be difficult, but the alternative (a risk of fatal heart problems if exercise is not restricted, or if no treatment is given) is worse.

## TROUBLESHOOTING BEFOREHAND

There is no reason to allow running, jumping, or other physical activity at any time for 8 weeks after the start of the injectable heartworm adulticide treatment. All physical exertion must be stopped beginning the day of the first injection, 24 hours a day, for the full 8-week period, to reduce the risk of serious (catastrophic) heartworm-related problems.

## PROCEDURE: HOW TO CARE FOR YOUR DOG DURING TREATMENT

- After receiving the first injection, your dog must remain as quiet and inactive as possible for the next 8 weeks (confine to crate or small room). This may seem unfair, but the alternatives are worse and potentially life-threatening.

- Short, slow leash walks (5-10 minutes) are appropriate for urinating and defecating, 3-4 times a day.
- Dogs who are allowed to run or play during this time can develop life-threatening problems similar to a massive stroke. Treatment makes the heartworms fragile, so the body can break them down slowly over the next 8 weeks. Allowing vigorous activity at any time in these 8 weeks can cause the weakened heartworms to shatter, causing a clot of worm fragments that blocks off blood flow to the lungs, brain, or other organs ("shaking the tree" phenomenon). This causes a stroke or sudden death. Conversely, exercise restriction means the worms are slowly broken down by the body until gone, with no symptoms or problems.
- Respiratory symptoms are important if you see them: if your dog is acting abnormally, develops a new cough, or has difficulty breathing, you should call your veterinarian promptly. These symptoms may be the first sign of a mild reaction to dying worms, requiring an immediate recheck visit. Depending on each case, some dogs may receive oral cortisone tablets (prednisone), which you should give as directed. Other dogs may not need this treatment or only receive it on an as-needed basis if respiratory symptoms such as coughing occur.

The second and third injections are given 24 hours apart, 1 month after the first injection. This means your dog will usually need to spend the night in the hospital for observation. This is the final treatment in the series.

- When discharged after the third injection, your dog must remain as quiet/inactive as possible for the next 4 weeks, as noted above. After those 4 weeks, limited activity may be slowly increased.
- Respiratory symptoms are important, as described above.
- It is important that you start or continue giving heartworm preventative on a monthly basis even during heartworm treatment.

## AFTERWARDS

This approach will minimize the risk of complications, and you should see your dog acting, eating, breathing, and behaving normally during the treatment period. Should your dog exhibit any of the symptoms mentioned, call your veterinarian immediately.

If you will be unable to keep your dog confined during the entire treatment, you may discuss any alternatives that your veterinarian may have available. It may be that mild sedatives can help your dog better cope with exercise restriction. The risk of sudden death on exercise is so high that every option must be investigated.

Your veterinarian should retest your dog for heartworm disease in 6 months. Usually, your dog can slowly resume activity at this time. Remember that every dog living in an area where heartworms exist needs to receive regular heartworm preventative (usually once monthly, given orally at home). Your veterinarian can inform you about local and regional variations, if any.

## ALTERNATIVES AND THEIR RELATIVE MERITS

Giving monthly heartworm-prevention drugs as not just preventatives but as a treatment for an existing heartworm infection ("heartworm adulticide") provides a limited benefit: monthly heartworm preventatives may gradually kill adult heartworms. However, they do so very slowly (1-2 years), and the race between slow worm death and the damage they are inflicting before they die continues during this time. The purpose of injectable heartworm adulticides is a more rapid and complete elimination of the heartworms.

## FREQUENTLY ASKED QUESTIONS

### *Why do I have to give an antibiotic? Aren't the injections enough?*

Doxycycline, the antibiotic of choice, amplifies the effectiveness of the injections while also reducing the risk of adverse effects. It kills an organism, *Wolbachia*, that lives inside heartworms and on which the heartworms depend. Thus, doxycycline weakens the heartworms and makes them more vulnerable to the adulticide injections. It is imperative to give the antibiotic treatment the entire time recommended by your veterinarian, barring symptoms of intestinal upset (loss of appetite, vomiting, which warrant a call to your veterinarian).

### *Why is exercise restriction so important?*

When the worms are dying off, they are slowly destroyed by the body. Increased activity can cause an embolus, or clump of worms, to form, blocking the circulation through the lungs. This can cause a stroke or sudden death.

### *How did my dog get heartworm disease?*

Heartworms are carried by mosquitoes. An infected mosquito bit your dog, depositing the worm in the tissues.

### *Do the heartworm adulticide injections hurt?*

No, the injections are painless. About 20% of dogs develop inflammation over the injection site 2-5 days after injection, which creates soreness. If this appears to be the case, please contact your veterinarian.

### *Can I get heartworm disease?*

There have been reports of humans developing heartworm disease, possibly as a result of immunocompromise in the human. These reports are extremely rare, and having a dog with heartworm disease does not pose a significant risk to immunocompromised or immune competent people under normal conditions. The risk for all mosquito-borne diseases should be reduced through basic mosquito-control measures (water buckets should be emptied, areas of uncirculated water should be drained, etc.).

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