



LYME DISEASE: ADVICE FOR PET OWNERS

Are you confused about the potential effects of Lyme disease on you and your pets? If so, you are not alone. Several features of the disease process make definitive diagnosis and treatment of Lyme disease in dogs more challenging.

Lyme disease is caused by a spiral-shaped bacterium called *Borrelia burgdorferi*. The bacteria are transmitted by the bite of the deer tick, a tiny dark brown tick whose size is comparable to the head of a straight pin. While domestic cats, horses and cattle are known to harbor the disease, dogs and humans are most commonly infected, though there are differences between them in the clinical features of the disease

To better understand how Lyme disease impacts your dog, it helps to know the following:

- ❖ It is estimated that many dogs in our area (as much as 50-75%) have been exposed to Lyme disease.
- ❖ Most (90–95%) dogs exposed to Lyme disease do NOT develop any clinical signs despite testing positive on Lyme tests.
- ❖ Of the small percentage of dogs that do show clinical signs, more than 99% will present with a lameness, joint or lymph node swelling and/or fever which usually responds quickly to a course of antibiotics.
- ❖ A very small percentage of dogs will have a more serious form of Lyme disease that may involve other organ systems, including the kidneys (Lyme nephritis), heart, eyes and the immune system.
- ❖ Dogs do NOT get the typical skin lesions that people manifest shortly after infection.
- ❖ The incubation period (between exposure and the onset of clinical signs) for Lyme disease is felt to be several months long.
- ❖ It is unknown how long it takes to clear a Lyme infection, or if a dog is ever totally clear of the organism.

How is Lyme's Disease diagnosed and treated? Because a large number of dogs with no clinical signs test positive for Lyme, diagnosis of an active case is dependent on a number of factors including:

- **History of exposure to tick-infested areas**
- **Clinical signs** - The symptoms most commonly seen are loss of appetite, lethargy and muscle, bone and joint pain. Joints may be swollen and warm to the touch. There may be a fever and swollen lymph nodes.
- **Blood testing** - While a blood test is now available that may help *quantify* Lyme antibody levels, due to the number of dogs that are Lyme positive without clinical signs, a positive test for Lyme disease does not always signify that Lyme is the cause of the clinical signs seen.
- **Response to treatment** - Clinical signs tend to improve rapidly once antibiotics are started.

Fortunately, the bacteria are sensitive to a number of antibiotics that are administered for an extended course of time (generally a few weeks). Unfortunately, however, it may be difficult to definitively clear the animal of all of the bacteria despite treatment.

What is Lyme nephritis? This is a very uncommon form of Lyme disease that affects Labrador retrievers, Golden retrievers and Shelties more than other breeds, though any breed of dog may be affected. It is characterized by loss of appetite, lethargy, vomiting, weight loss, urinary tract signs, breathing difficulties and edema (swelling from fluid accumulation). Physical exam and laboratory findings relate to kidney failure, protein loss, hypertension, abnormal nervous system signs and/or blood clots.

Because it is very uncommon, definitive diagnosis of Lyme nephritis can be challenging. For example, having signs of kidney compromise along with a positive Lyme test does not mean that Lyme disease has *caused* the kidney problem, as many dogs are coincidentally positive for Lyme without any clinical signs. Several different laboratory tests are often needed to distinguish Lyme nephritis from other diseases sharing similar signs.

Unfortunately, the prognosis for dogs that present with Lyme nephritis is poor, as treatments helpful to some of the signs may worsen other aspects of the condition. Dogs presented earlier on in the process have a better chance of survival. One key factor in considering Lyme nephritis is the presence of abnormal amounts of protein in the urine, making a urinalysis and/or more specific urine protein analysis a key to diagnosis.

Can Lyme disease be prevented? YES!! Precautions include use of quality tick insecticides, especially when entering wooded or swampy areas, and removal of all ticks promptly using tweezers (never use fingers). If you are concerned about the type of tick you have removed, save it in a container of alcohol and present it to your veterinarian for identification.

A vaccine is also available for use in dogs. It is administered twice at a 2-4 week interval in dogs over 12 weeks of age, then boosted annually. This immunization may not affect dogs already infected but may stimulate protective antibody production in uninfected dogs. It should also be noted that veterinary experts disagree on the potential usefulness of the vaccination in a Lyme prevention program. It is generally agreed that the **most important aspect of Lyme disease prevention is topical control with a good quality product** (e.g., Frontline).

Should all dogs be vaccinated for Lyme disease? Lyme disease is considered an optional rather than a core (required) vaccination. The decision whether or not to vaccinate ultimately depends on considering the benefits (increased disease protection) vs. the risks (vaccine reactions) in relation to your pet's individual environment and lifestyle. As vaccination is less effective in dogs already exposed to Lyme disease, beginning a vaccination program while the dog is still a puppy may be most effective. Vaccination is NOT a substitute for good topical tick control; continue the above-mentioned topical protective measures as well.

With your help, we can often prevent Lyme disease as well as effectively treat dogs with the disease. The use of effective tick control throughout the season cannot be emphasized enough as the most important aspect of Lyme disease control. If you have any questions or concerns, please contact the clinic at 508-478-7300.