

Can Trigger Chronic Kidney Disease – Is Your Pet at Risk?

Recently published internal research links two types of pathogenic exposure to a 43% and 300% increased risk of kidney disease later in life, respectively. But the devil is in the details. So it's important to know exactly what constitutes a risk and what should be done about it.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- A veterinary laboratory has released internal research that links Lyme disease and ehrlichiosis in dogs to chronic kidney disease later in life
- Dogs that actually become sick with either Lyme or ehrlichiosis and live in areas where the diseases are prevalent are at highest risk
- Most dogs exposed to Lyme or ehrlichia bacteria don't develop symptoms or become sick because their immune systems mount an effective response
- If your dog tests positive for Lyme or ehrlichia on a screening test, it's important to confirm infection with an appropriate follow-up test
- If you live in or visit tick-endemic areas, it's extremely important to take commonsense steps to ensure your dog doesn't acquire a tick-borne disease, including screening tests and regular organ function tests

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IDEXX Laboratories, which makes the SNAP 4Dx test I often mention in tick-related articles, recently published internal research that links certain types of tick-borne pathogen exposure in dogs to kidney disease later in life.¹

Lyme/Ehrlichia Antibodies May Trigger Kidney Issues in Dogs

Using IDEXX databases, the researchers conducted a retrospective study of approximately 850,000 dogs ranging in age from 1 to 25 years that included both males and females across 160 named breeds as well as breed mixes.

The IDEXX study results show that dogs with antibodies to *B. burgdorferi*, the bacteria that causes **Lyme disease**, had a 43 percent increased risk of developing chronic kidney disease (CKD) if they lived in Lyme-endemic areas. Dogs with antibodies to *E. canis*, the bacteria that causes ehrlichiosis, had a 300 percent increased risk of developing CKD if they lived in *E. canis*-endemic areas.

The dogs in the study diagnosed with kidney disease had a median age of 11 years, with a range from 1 to 19 years; however, the researchers weren't able to draw any conclusions about the timing of the onset of CKD relative to the timing of the first tick-borne disease exposure.

The study also doesn't provide a defined causal relationship between Lyme and ehrlichiosis exposure and kidney problems, however, according to the IDEXX researchers, "Both results were statistically significant and clinically relevant, indicating that regular monitoring of these seropositive patients is medically necessary." Their recommendation for veterinarians and pet parents:

"Patients of any age that test positive for Lyme disease or Ehrlichia should be considered for comprehensive evaluation. At every annual visit, the patient should receive a physical examination, a complete blood count (CBC), a complete chemistry panel with the IDEXX SDMA Test, and a complete urinalysis to monitor for multisystemic disease."

SDMA (symmetric dimethylarginine) is a biomarker that can identify kidney disease much earlier than the standard test for the condition, which measures serum creatinine levels.

Symptomatic Dogs in Endemic Regions Are at Highest Risk

As the IDEXX researchers point out in their study, "Symptomatic dogs that have been exposed to ticks infected with *B. burgdorferi* or *Ehrlichia* have an increased risk of multisystemic disease." The key word here is symptomatic.

What most pet parents and even many veterinarians don't understand is that just because a dog is exposed to ticks infected with Lyme or ehrlichia doesn't mean he will develop symptoms. In the case of Lyme, about 95 percent of dogs that test positive for the disease live in just a dozen U.S. states. These are states in which Lyme disease is endemic (pervasive) — states with heavy infestations of deer ticks.

Ehrlichiosis is caused by two bacteria: *Ehrlichia canis*, which is transmitted by the brown dog tick and is commonly found in the southwest and Gulf Coast states; and *Ehrlichia ewingii*, which is transmitted by the lone star tick and is found from the Midwest to New England. The IDEXX study linked only the *E. canis* bacteria strain to chronic kidney disease. To find Lyme and ehrlichia rates in your state, you can view the Companion Animal Parasite Council's **[parasite prevalence maps](#)**.

In areas of the country where Lyme disease or ehrlichiosis is prevalent, veterinarians test regularly for the diseases even in healthy dogs. The results show that a large percentage of dogs are seropositive, meaning they have Lyme- or ehrlichia-related antibodies in their blood from exposure to the bacteria. However, they have no clinical symptoms of infection.

Most Dogs Exposed to Lyme and Ehrlichia Don't Show Symptoms

Bottom line: While exposure to *B. burgdorferi* in dogs is common, Lyme disease infection is not, nor is ehrlichiosis common in dogs exposed to *E. canis*. These are not sick dogs, but dogs who've been exposed to the bacteria that causes the disease.

Exposure means dogs' bodies have encountered the bacteria (just as our bodies encounter thousands of different bacteria that we don't become infected with) and have mounted an appropriate immune response: They made antibodies and fought off the foreign invader effectively.

Antibodies are a lasting response you can measure after your pet's body has waged and won a successful battle with a pathogen. These dogs become "seropositive" for Lyme or ehrlichia, meaning they've been exposed to the bacteria and won the battle.

Statistics show that the immune systems of seropositive dogs have identified the pathogen and mounted an appropriate, effective response. So even though they test positive, they do not become sick with the disease. For this reason, I don't recommend automatically giving antibiotics to positive dogs.

Just because a dog tests positive on the initial screening test doesn't mean she must immediately be treated. In fact, most dogs successfully clear the infection without medical intervention.

If your dog tests positive on an IDEXX SNAP 4Dx test, ask your veterinarian to do additional testing to find out whether she has just been exposed or is actually dealing with an infection. Dogs who test positive for Lyme should have a follow-up test called a Quantitative C6 (QC6) test. Dogs positive for ehrlichia need a follow-up PCR test.

5 Tips to Help Your Dog Avoid a Tick-Borne Infection

1. **Avoid tick exposure** — In the spring, summer and fall, avoid tick-infested areas.
2. **Check for ticks daily** — If you live where Lyme disease or ehrlichiosis is endemic or you inadvertently wind up in a tick-infested area, check your dog for ticks twice a day. Don't overlook areas of his body where ticks can hide, like between the toes, the underside of the toes, in the earflaps and around the tail base.

Tick checks each time your dog has been outside and potentially exposed, and removing ticks immediately are crucially important steps in reducing your dog's risk of acquiring an infection.

3. **Use a tick repellent** — There are natural tick preventives available, however, in Lyme- and ehrlichia-endemic regions of the U.S., many veterinarians will recommend you use a chemical repellent. It's important to investigate the risks and benefits of any medication before you give it to your pet, as most have side effects. If you use these preventives, consider a detox protocol for a week after administration.
4. **Focus on making your dog optimally healthy** — Ticks and other parasites prefer weaker hosts. Creating a strong and resilient immune system in your dog through a nutritionally balanced, fresh food diet, titrating and minimizing chemical exposure will make her less attractive to ticks.
5. **Have your dog tested for tick-borne diseases** — Do this three to four weeks after removing a tick (no sooner than three weeks). Ask your vet for the SNAP 4Dx or Accuplex4 test, which are screening blood tests. If you don't have one of these tests done, you'll need to watch your dog closely for several months for any signs of loss of appetite, lethargy, change in gait, fever, intermittent limping — all the symptoms of potential tick-borne disease.

Keep in mind that waiting until your dog exhibits symptoms isn't the most proactive approach. I have found tick-borne diseases substantially harder to treat once a dog is clearly ill. The period of subclinical infection (when the dog has no symptoms) is when integrative practitioners see excellent treatment success.

Checking your dog externally for ticks plus having his blood checked regularly (I recommend every six months in endemic areas) for silent infections is the very best approach to keeping him safe from potentially devastating tick-borne diseases. If your dog does develop symptoms of Lyme disease or ehrlichiosis or has been treated for a tick-

borne disease in the past, be sure your veterinarian is checking his organ function, especially the kidneys, during yearly (or preferably, twice-yearly) wellness exams.

Sources and References

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¹ [IDEXX](#)
