



AHDC Contacts

Phone: 607-253-3900 Web: diagcenter.vet.cornell.edu
Fax: 607-253-3943 E-mail: diagcenter@cornell.edu

Canine Lyme Diagnosis

Canine ELISA test: Only valid for dogs that have not experienced vaccination with one of the Lyme vaccines. This test does not distinguish between antibodies to vaccination and infection.

- ✓ Results reported as Negative are 99+% specific (antibody levels less than 100 ELISA units)
- ✓ Results reported as Positive are 99+% sensitive (antibody levels greater than 200 ELISA units)
- ✓ Results ranging from 100-200 ELISA units are reported as Equivocal and require a Western Blot to confirm infection and/or vaccination status.

Canine Western Blot: a confirmatory assay

- ✓ The test will detect antibody to either infection or vaccination, or both.
- ✓ Vaccinal antibody may wane by as few as 10 months or may remain high for over 8 years (with no booster beyond the initial vaccinations).
- ✓ Waning responses are more common than long term elevated titers to vaccination.
- ✓ The degree of antibody response to vaccination appears to be an individual dog response, not a result of the type of vaccine used.
- ✓ Dogs that have been vaccinated, even once, should be tested by Western Blot to distinguish vaccinal from infection responses.
- ✓ Infected dogs must have 3 of 5 specific bands to be classified as positive. This requirement assures that no false positives are inferred.

Clinical diagnosis:

- ✓ There are four principal criteria for diagnosing Lyme disease in dogs:
 - History of exposure to *Ixodes* ticks in an endemic area
 - Typical clinical signs
 - Positive serology with a properly validated assay
 - Apparent response to antibiotic therapy when the disease is caused by infection
- ✓ Clinical Signs associated with Lyme disease:
 - Abnormalities of the musculoskeletal and joint system with anorexia and lethargy.
 - Sudden onset lameness with hot swollen joints.
 - Depression, myalgia, swollen lymph nodes and mildly elevated rectal temperatures.
 - Glomerulonephritis with protein losing nephropathy is a rare but often fatal outcome of Lyme disease.
- ✓ Rule outs should include rheumatoid, infectious or immune-mediated arthritis, osteopathies, degenerative joint disease and other infectious diseases including Rocky Mountain Spotted Fever, ehrlichiosis and bacterial endocarditis.
- ✓ Most infected dogs never show any significant signs of Lyme disease. In endemic areas, up to 90% of dogs may be infected. However, only 5 to 10% of these become symptomatic.
- ✓ Most dogs resolve clinical signs spontaneously but some dogs exhibit multiple episodes.
- ✓ Antibiotic therapy may reduce the load of organisms in infected dogs but does not eliminate all of them.
- ✓ The organism sequesters in fascia, connective tissue, and muscle. Infected dogs remain Lyme positive for years even following appropriate antibiotic therapy.
- ✓ We suggest testing dogs prior to vaccination, so that you know if the dog has an existing infection.
- ✓ Dogs that are antibody positive for infection should have concurrent antibiotic therapy if they are ever treated with steroids.