

New Test Could Detect Equine Lyme Disease Sooner (AAEP 2012)

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Diagnosing Lyme disease in horses is tricky business; not all horses that contract the causative bacterium, *Borrelia burgdorferi*, from infected ticks develop the debilitating condition, and those that do might not show signs until several months after infection. As with many diseases, early detection can mean swifter resolution, along with better recovery, so Cornell researchers have been searching for reliable ways to detect *B. burgdorferi* sooner. Bettina Wagner, DVM, PhD, associate professor of immunology at the university's veterinary school, described a new test she and her colleagues developed. She presented the testing protocol at the 2012 American Association of Equine Practitioners' (AAEP) Convention, held Dec. 1-5 in Anaheim, Calif.

In North America, *Ixodes* ticks are responsible for transmitting *B. burgdorferi* to susceptible horses, which become incidental, dead-end hosts. Possible clinical signs range from chronic weight loss, low-grade fever, sporadic or shifting leg lameness, muscle tenderness, and arthritis to behavioral changes, neurologic signs, poor performance, and skin hypersensitivity, to name a few.

"Because clinical signs are rather nonspecific," said Wagner, meaning they could be attributable to a number of diseases, "Lyme disease can be difficult to diagnose in horses." It's important for veterinarians to consider a horse's potential for infection, such as if the animal lives in or has visited an endemic area. The eastern United States is a known hot spot for Lyme disease, but veterinarians also detect it in areas such as Florida, Texas, and California. Another indicator to help the practitioner diagnose Lyme disease is serologic testing for antibodies against *B. burgdorferi*.

Wagner presented the results of the equine Lyme multiplex assay, a new antibody test available at Cornell's diagnostic lab. This test can detect antibodies as early as two to four weeks following infection, and it can distinguish early infection stages from late.

Previously, many equine practitioners have used the Snap 4Dx test (Idexx Labs), one of the only commercially available tests for this purpose until recently. At Cornell, researchers compared Lyme multiplex assay results and Snap 4Dx testing. Overall, both tests detected antibodies against *B. burgdorferi*. However, Snap 4Dx testing yielded some false positive and false negative results. Wagner recommended confirming positive results on a Snap 4Dx test by also running the equine Lyme multiplex test. "A negative Snap 4Dx test with clinical signs suggestive of Lyme disease should also be confirmed with the Multiplex test," she said.

Wagner and her colleagues have applied for a patent for the Lyme multiplex test. Wagner is very excited about its promise for detecting early onset of Lyme disease. She stressed, "The earlier the diagnosis, the better the chance for achieving successful treatment."

Disclaimer: Seek the advice of a qualified veterinarian before proceeding with any diagnosis, treatment, or therapy.