



NEWS RELEASE

Nearly 1 in 3 Patients with Suspected Lyme Disease are Co-Positive for Other Tick-Borne Pathogens, Finds Study by Quest Diagnostics

2026-09-21

Study published in JAMA Network Open of over 193,000 patients nationwide reveals that individuals with evidence of exposure to *Borrelia burgdorferi*, the bacterium that causes Lyme disease, are more than four times as likely to have antibodies against other tick-borne pathogens compared to those without.

SECAUCUS, N.J., Sept. 21, 2026 /PRNewswire/ -- Nearly one in three patients found to have antibodies against the bacterium that causes Lyme disease also had antibodies against one or more additional tick-borne pathogens, according to a new study by researchers from Quest Diagnostics (NYSE: DGX) and the University of North Carolina at Chapel Hill.

Published in JAMA Network Open, the study, titled "**Coseropositivity to Tick-Borne Pathogens Among Patients Suspected to Have Lyme Disease**," analyzed de-identified test results from 193,260 individuals across the United States who underwent testing for tick-borne diseases between January 2021 and December 2025. The study is believed to be the largest serology-based, simultaneous evaluation of multiple tick-borne pathogens in the U.S. and the largest involving a dataset as recent as 2025.

The researchers found that 29.5% of individuals who had antibodies against *Borrelia burgdorferi*, the bacterium that causes Lyme disease, also had antibodies against at least one other tick-borne pathogen. By comparison, only 5.5% of those without antibodies for Lyme disease had antibodies against another tick-borne pathogen. The most frequent pattern of co-seropositivity was observed among other pathogens transmitted by the blacklegged tick, the primary vector of *Borrelia burgdorferi*, including *Babesia microti* and *Anaplasma phagocytophilum*. Co-exposure can occur when multiple pathogens are transmitted by a single, co-infected tick or from multiple tick bites.

The findings reveal potential patterns of tick-borne co-exposure in a geographically diverse, national sample. Higher temperatures and expanding populations of deer and mice have led to an increase in ticks and other tick-borne illnesses across the country, but no nationwide analyses documenting these co-seropositivity patterns at this scale have been available until now.

"The findings demonstrate that tick-borne co-exposure is a frequent clinical reality for many, particularly in Lyme disease-endemic regions like the Northeast," said Emily I. Schindler, MD, PhD, FCAP, Medical Director, Infectious Disease & Immunology, Quest Diagnostics. "This research underlines the importance of comprehensive testing to bring patients the most effective treatments: because the clinical symptoms of Lyme disease, anaplasmosis and babesiosis often overlap, relying solely on single-pathogen testing can result in missed diagnoses, which can be dangerous for patients with babesiosis, which requires entirely different management than Lyme disease."

Additional Key Findings:

- Among the entire cohort, 5% of individuals were seropositive for *B. burgdorferi*; 3.4% for *Babesia microti* (a malaria-like parasite); 3.1% for *Anaplasma phagocytophilum*; and 1.0% for *Ehrlichia* species.
- Patients in the Northeastern U.S. were roughly twice as likely to have antibodies co-detected against non-Lyme disease pathogens (31.1% of patients who were seropositive for *B. burgdorferi*) than other parts of the U.S. [Midwest (16.6%); South (16.0%); West (13.6%)]
- *Babesia* antibodies were most commonly co-detected among patients who were seropositive for *B. burgdorferi*, reaching 18.5% in the Northeast.

More than 40% of all the diagnostic panel testing occurred during the summer months of June through August and nearly 26% in the fall months of September through November, reflecting the seasonal nature of tick activity. Additionally, the cohort was primarily represented by the Northeast (70.6% of all patients tested) but also included other regions, reflecting the known habitat of ticks that transmit these diseases.

The Centers for Disease Control and Prevention (CDC) estimate that upwards of 476,000 people are diagnosed and treated for Lyme disease each year in the United States. Spread to humans through the bite of infected ticks, Lyme disease typically presents symptoms including fever, headache, fatigue, and sometimes a characteristic skin rash called erythema migrans. If left untreated, infection can spread to joints, the heart, and the nervous system. While standard first-line therapy for Lyme disease is doxycycline, amoxicillin, or cefuroxime axetil, *Babesia* is a parasite that does not respond to those antibiotics, meaning those actively co-infected with *Babesia* require a different combination of antimicrobials.

"Our findings demonstrate a strikingly high rate of co-detection of antibodies against other tick-borne pathogens, particularly babesia," said Yonghong Li, PhD, lead author and Science Director at Quest Diagnostics. "The sheer

scale of this national dataset provides robust evidence of these co-detection patterns, making our findings highly relevant to the rapidly evolving landscape of tick-borne co-exposure."

A key strength of the study is the use of national, real-world data to fine-map regional co-exposure patterns. The study's use of serological data without clinical context, however, means some test results may reflect past exposure to tick-borne pathogens rather than confirmed, active infections.

In 2018, **a Quest Diagnostics Health Trends® report** showed increased prevalence of Lyme disease across all 50 states. The company offers several lab tests to assist with identifying tick-borne infections, including a tick-borne disease antibodies panel containing guideline-recommended 2-step serologic testing for Lyme disease.

About Quest Diagnostics

Quest Diagnostics works across healthcare to create a healthier world, one life at a time. We connect people, from clinicians to consumers, with laboratory insights that illuminate a path to better health. With a focus on delivering smarter, simpler testing, we help reveal new avenues to identify and treat disease, empower healthy behaviors and improve healthcare management. Quest Diagnostics serves half the physicians and hospitals in the United States and one in three American adults each year, and our nearly 60,000 employees work together to deliver diagnostic insights that inspire actions to transform lives. **www.QuestDiagnostics.com**

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