

Tick-Borne Disease Pathogen Testing Information

- **Lyme is the most prevalent tick-borne disease in New England and the diagnosis is based on two-tiered serology testing.**
 - Within the first 2 weeks of infection (post tick bite) treatment should be performed based on clinical signs because serological testing will be negative or unreliable.
 - Between 2 weeks and 4 weeks of infection (post tick bite) a positive ELISA followed by a positive IgM confirmation test is significant.
 - 4 weeks after infection (or post tick bite) a positive ELISA followed by a positive IgG confirmation test is significant.
 - **A positive IgM 4 week or longer after infection (or tick bite) has no clinical significance**
- PCR can detect a pathogen only during the blood borne phase, which is simultaneous with the clinical symptoms for Anaplasma, Babesia or Ehrlichia but NOT for Borrelia. For Lyme disease, serology is the testing methodology of choice (see test code **LYMES**)
- Antibody testing for **Anaplasma and Babesia** has questionable clinical significance especially in acute settings. Testing should be paired (2 to 4 weeks apart) and an infection would reveal a 4 time increase in titers. PCR is the test methodology of choice for Anaplasma and Babesia (see test code **TKPCR**)
- **Ehrlichia species is not indigenous to New England.** Although we are offering diagnostic testing we do not recommend it.
- **Tick panel** (see test code **TICKP**) is the test of choice when **co-infection** with **Borrelia, Anaplasma and/or Babesia** is suspected. **We recommend ordering specific tests for each pathogen that is suspected based on clinical signs. Co-infection is <1%; ordering panels when not indicated increases the risk of false positive results, anxiety for the patient and unnecessary treatment.**

Suspected Pathogen	0-2 weeks from tick bite	Over 2 weeks from tick bite
B. burgdorferi (LYMES)*	Treat based on clinical symptoms	ELISA with reflex to immunoblot (LYMES)*
A. phagocytophila Babesia microti	PCR for identification (APPCR)* PCR for identification (BMPCR)*	TICK PANEL PCR (TKPCR)* if present clinical signs
Co-infection B. burgdorferi A. phagocytophila/ Babesia microti	PCR for identification of Anaplasma and Babesia TICK PANEL PCR (APPCR, BMPCR, TKPCR)*	TICK PANEL (PCR for Anaplasma/Babesia + immunoassay with reflex for Lyme) (TICKP)*
Ehrlichia spp	Ehrlichia PCR (ERLIC)*	Ehrlichia PCR (ERLIC)*

Note: Ehrlichia is not an indigenous pathogen to New England.

Co-infection w B. burgdorferi and A. phagocytophila/ Babesia and Ehrlichia spp	PCR for identification of Anaplasma, Babesia and Ehrlichia TICK PANEL PCR with Ehrlichia (TKABE)*	TICK PANEL PCR w Ehrlichia & Lyme serology (TLABE)*
---	---	--

***Please reference individual test codes in NorDx Test Catalog for more testing information.**