



Connecticut Children's Co-Management Tool-Kit

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LYME DISEASE SEROLOGIC TESTING

(Adapted from the Red Book, 2009)

*A 2-step approach is recommended for serologic diagnosis of B burgdorferi.**

1. Step 1: A quantitative screening test for serum antibodies should be performed using a sensitive **enzyme immunoassay (EIA)** or **immunofluorescent antibody assay (IFA)**
 2. Step 2: Serum specimens that yield **positive or equivocal results** should then be tested by a **standardized Western immunoblot** for presence of antibodies to B burgdorferi.**
 - a. **For early disseminated disease without rash, use:** Immunoglobulin (Ig) G and IgM immunoblot assays
 - b. **For late disseminated disease, only use:** IgG immunoblot assay***
- c. Interpretation of Western Immunoblot:**
- A positive result of an **IgG immunoblot** test requires detection of antibody (“bands”) to 5 or more of the following: 18, 23/24, 28, 30, 39, 41, 45, 60, 66, and 93 kDa polypeptides.
 - A positive test result of **IgM immunoblot** requires detection of antibody to at least 2 of the 23/24, 39, and 41 kDa polypeptides.

Notes:

* *Two-step testing is needed because EIA and IFA may yield false-positive results because of the presence of antibodies directed against spirochetes in normal oral flora that cross-react with antigens of B burgdorferi or to cross-reactive antibodies in patients with other spirochetal infections (eg, syphilis, leptospirosis, relapsing fever), certain viral infections (eg, varicella, Epstein-Barr virus), or certain autoimmune diseases (eg, systemic lupus erythematosus).*

** *Serum specimens that yield negative results by EIA or IFA should not be tested further by immunoblot. In addition, immunoblot test should not be performed instead of an EIA; positive immunoblot results likely would not be attributable to Lyme disease.*

*** *To confirm late disease, only an IgG immunoblot assay should be performed, because false-positive results may occur with the IgM immunoblot. In people with symptoms lasting longer than 1 month, a positive IgM test result alone (ie, negative IgG test) is likely to represent a false-positive result and should not be the basis on which to diagnose Lyme disease*