Plausible exposure to *Borrelia burgdorferi* AND Erythema migrans rash

Atypical presentation?

No

- No laboratory testing required
- Treat for Lyme disease

Yes

ORDER

Two-tiered reflex testing

Tier 1 (Initial Testing)

*B. burgdorferi* total antibodies by ELISA, serum

Positive/equivocal

Tier 2 (Confirmation Testing)

*B. burgdorferi* IgM and IgG individual antibodies by ELISA, serum

Negative

Laboratory evidence does not support a diagnosis of Lyme disease

If suspicion remains, repeat testing on a new specimen after 7-14 days

Consider other tickborne diseases if not tested for concurrently; refer to ARUP Consult Tickborne Diseases topic

Positive/equivocal

Supports a diagnosis of Lyme disease

Plausible exposure to *Borrelia burgdorferi* AND Specific neurologic symptoms consistent with Lyme neuroborreliosis

CDC-recommended approach*

Abbreviations

CNS  Central nervous system
CSF  Cerebrospinal fluid
IgM  Immunoglobulin M
IgG  Immunoglobulin G

*CSF testing is not recommended to diagnose Lyme neuroborreliosis. If CSF testing is pursued, antibody index testing is recommended. In individuals with an elevated antibody index, monocytic or lymphocytic pleocytosis in CSF points to active CNS infection.

* Tier 2 of the standard 2-tiered testing approach involves use of immunoblot testing to confirm a positive or equivocal immunoenzyme assay result.

*If testing >30 days from symptom onset, IgM results should be disregarded. Repeat testing may be indicated to confirm positive or equivocal tier-1 testing if the date of symptom onset is uncertain.

References