Neuroinvasive Lyme disease should be considered in patients, with exposure to ticks in a Lyme-endemic region, who present with 1 or more of the following symptoms:

- Cranial neuropathy (e.g., facial nerve palsy)
- Radiculoneuritis (motor and/or sensory)
- Lymphocytic meningitis
- Bannwarth syndrome

Order LNBAB / Lyme CNS Infection IgG with Antibody Index Reflex

Cerebrospinal fluid (CSF) and serum are both required: CSF and serum should be collected within 24 hours of each other

CSF specimen is screened first, using an anti-

Borrelia IgG ELISA*

- No anti-

Borrelia IgG detected
- Reflex testing of serum specimen not indicated

POSITIVE

- Anti-

Borrelia IgG detected in CSF**
- Reflex testing of paired CSF and serum initiated

Paired CSF and serum specimens tested by reflex for:

- Anti-

Borrelia IgG
- Total IgG
- Albumin

Results will be used to determine the Lyme CNS Antibody Index (AI)***

INVALID

Lyme CNS AI value <0.6

Result is due to abnormally elevated total IgG levels in CSF. This may be due to passive diffusion through the blood-brain barrier or contamination of the CSF with blood during a traumatic lumbar puncture.

Repeat testing may be considered.

NEGATIVE

Lyme CNS AI value 0.6–<1.3

Results indicate lack of intrathecal antibody synthesis to Lyme disease-associated Borrelia species. This suggests the absence of neuroinvasive Lyme disease.

The initial screen-reactive result may be due to anti-

Borrelia species antibodies present in the CSF due to increased permeability of the blood-brain barrier or transient introduction during lumbar puncture.

EQUIVOCAL

Lyme CNS AI value 1.3–1.5

Low level of intrathecal antibody synthesis to Lyme disease-associated Borrelia species detected.

Results should be correlated with exposure history and clinical presentation to establish a diagnosis of neuroinvasive Lyme disease.

POSITIVE

Lyme CNS AI value >1.5

Results indicate the presence of intrathecal antibody synthesis to Lyme disease-associated Borrelia species, suggesting neuroinvasive Lyme disease.

Results should be correlated with exposure history and clinical presentation to establish the diagnosis.

* Anti-

Borrelia IgG ELISA detects IgG-class antibodies to the Borrelia burgdorferi sensu lato genospecies.

** Patient management decisions should not be made based on a screen-reactive result alone


See Acute Tick-Bourne Disease Testing Algorithm for more information.