

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 (eg, facial nerve palsy)
- Radiculoneuritis (motor and/or sensory)
- Lymphocytic meningitis
- Bannwarth syndrome

Order **LNABAB / Lyme CNS Infection IgG with Antibody Index Reflex, Serum and Spinal Fluid**
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*

POSITIVE

NEGATIVE

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

- No anti-*Borrelia* IgG detected
- Reflex testing of serum specimen **not** indicated

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)***



POSITIVE
Lyme CNS AI value >1.5

EQUIVOCAL
Lyme CNS AI value 1.3-1.5

NEGATIVE
Lyme CNS AI value 0.6-<1.3

INVALID
Lyme CNS AI value <0.6

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.

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.

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.

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.

* 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

*** Reiber H, Lange P: Quantification of virus-specific antibodies in cerebrospinal fluid and serum: sensitive and specific detection of antibody synthesis in brain. Clin Chem 1991;37(7):1153-1160

See [Acute Tick-Borne Disease Testing Algorithm](#) for more information.