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 LNBAB / 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:

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

- 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.
- 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.
- 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.
- 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.

* 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.