

“Tick-borne infections are among the many possibilities that should be considered when psychiatric symptoms appear resistant or only partially responsive to treatment. As clinicians, it is important to be aware that what may present as treatment resistant mood and/or anxiety disorders, may in fact be due to our present inability to identify all responsible infectious agents, and associated inflammatory and immunologic factors.”

Greenberg R (2017) Infections and Childhood Psychiatric Disorders: Tick-Borne Illness and Bipolar Disorder in Youth. Bipolar Disord 3: 113. doi: 10.4172/2472-1077.100011

The Importance of Early Diagnosis

Early diagnosis of Lyme disease results in better patient outcomes and reduces the chance of psychiatric or cognitive symptoms. Most patients who receive early diagnosis and effective treatment recover completely.

Delayed diagnosis can result in disseminated disease. Patients with disseminated Lyme disease are more likely to have cognitive or psychiatric symptoms than patients in the early stage of disease. They also may take longer to recover.

Why Does This Happen?

Infections often cause an inflammatory reaction followed by adaptive immunity and a resolution of symptoms. In some cases inflammation can persist without adaptive immunity, autoimmune symptoms may occur, and relapses (or reinfections) are possible. Specifically in Lyme disease, persistent inflammation has been associated with neurodegenerative changes.⁽¹⁾

Additional tickborne diseases present in Vermont (or acquired in travel to nearby states) can have effects that further complicate the disease process. Environmental exposures, and other infections and viruses which are not tickborne, may increase this complexity.

According to the Vermont Department of Health, symptoms of disseminated Lyme disease may occur weeks, months or years after infection, so the connection between these symptoms and a tick bite or tick exposure may not be clear.

(1) Neuropsychiatric Lyme Borreliosis: An Overview with a Focus on a Specialty Psychiatrist's Clinical Practice by Robert C. Bransfield

Further Reading / References

Aggressiveness, violence, homicidality, homicide, and Lyme disease. *Neuropsychiatric Disease Treatment. 2018*

Chronic neurologic manifestations of Lyme disease. *N Engl J Med. 1990*

A Controlled Study of Cognitive Deficits in Children With Chronic Lyme Disease. *Journal of Neuropsychology. Nov 2001*

Panic Attacks May Reveal Previously Unsuspected Chronic Disseminated Lyme Disease. *Jnl of Psychiatric Practice. 2000*

Infections and Childhood Psychiatric Disorders: Tick-Borne Illness and Bipolar Disorder in Youth. *Bipolar Disorders. 2017*

Lyme Disease: Etiology, Neuropsychological Sequelae, and Educational Impact. *NASP Publication. 2007*

Suicide and Lyme and associated diseases. *Neuropsychiatric Disease Treatment. 2017*

Neuropsychological Functioning in Chronic Lyme Disease. *NERV, 2002*

Neuropsychiatric Lyme Borreliosis: An Overview with a Focus on a Specialty Psychiatrist's Clinical Practice. *Bransfield, Robert C, MD., 2018*

Disseminated Lyme Disease

While some patients have objective and familiar symptoms of Lyme disease, others may have subtle neurological and cognitive deficits, or changes in behavior.

These may include:

- Anxiety
- Disassociation
- Irritability
- Sleep disorders
- Mood lability
- OCD
- Aphasia
- Suicidality
- Depression
- Executive function impairment
- Increased sensitivity to light and sound
- Memory problems
- Difficulty paying attention
- Slow processing speed

Understanding the difference in symptoms between early stage Lyme disease and disseminated disease, and how disease stage and antibiotic treatment will affect blood test results, will help you accurately diagnose Lyme and tickborne diseases. Know that symptoms of tickborne diseases can vary significantly in each patient.



Lyme, Tickborne Diseases, & Mental Health

What You Need To Know

Information for health care providers in Vermont about cognitive and psychiatric symptoms related to Lyme disease and other tickborne illnesses

VTLyme.org

Tickborne Diseases in Vermont

Lyme disease is transmitted by the bite of a black-legged tick. Diagnosis can be difficult because not all patients recall a tick bite, or develop the signature erythema migrans (“bull’s-eye”) rash.

In Vermont, Lyme disease has been diagnosed all 12 months of the year. In addition to Lyme disease, other tickborne diseases including Anaplasmosis, Babesiosis, Ehrlichiosis, and Borrelia miyamotoi are present.

Vermont has one of the highest rates of Lyme disease in the United States, and children ages 5-14 are most at risk for contracting Lyme disease. It is important for health care providers to understand how tickborne illnesses may present with behavioral symptoms.

Lyme Disease and Mental Health

Lyme disease may present with familiar symptoms, including rash, fever and joint pain, but a disseminated Lyme infection can also affect cognitive, emotional, and physiological functioning. Sometimes behavioral or cognitive changes are the only symptoms of a tickborne disease.

Anxiety, depression, OCD, outbursts of rage, mood swings, memory loss, and cognitive difficulties can be related to Lyme and tickborne diseases.

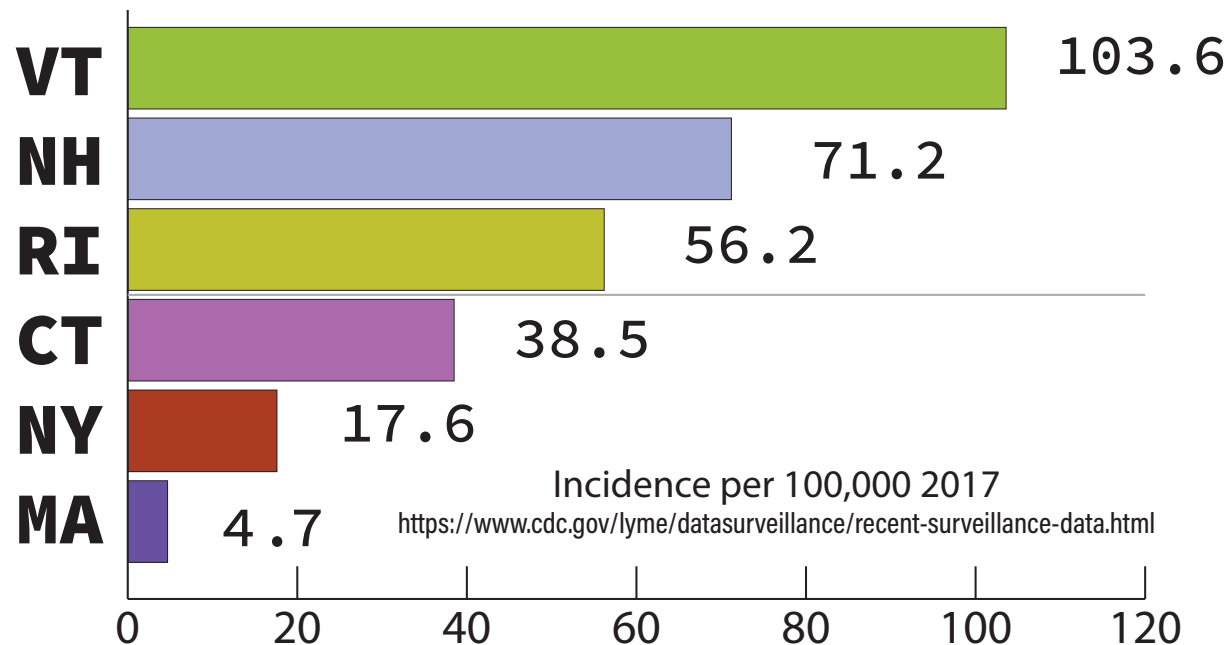
While a mood disorder may be unrelated to an illness, or a reaction to being ill, it is also possible that infection may be the biological cause. Because other bacteria, protozoa, and viruses carried by ticks are present in Vermont along with Lyme disease, comorbidity may increase the complexity of a patient’s illness.

Signs that Psychiatric Symptoms May be Tickborne Disease

Dr. Brian Fallon, director of the Lyme Disease Research Program at Columbia University, suggests these warning signs of Lyme encephalopathy:

- Are there markers of non-psychiatric disease such as erythema migrans rash, arthralgias or arthritis, myalgias, headaches, sound or light sensitivity, paresthesias, tremors or twitching, cardiac palpitations, word-finding problems, short-term memory loss, cranial neuropathies, radicular or shooting pains?
- Is the psychiatric disorder atypical or unusual? For example, does a panic attack last longer than the expected 1/2 hour? Or is it a first ever panic attack at age 50?
- Is there poor or paradoxical response to psychotropic medications, or excessive side effects/sensitivity to these medications?
- Is this new-onset disease without psychological precipitants such as new stressors or secondary gain?
- Is there an absence of a personal history or family history of major psychiatric disturbances?

“Negative answers to these questions do not rule out the presence of Lyme disease and co-infections. But a “yes” to most of these questions, especially in a patient with an out-of-doors lifestyle or a pet, demands further clinical assessment.”



The purpose of this pamphlet is to familiarize health care providers with evidence showing Lyme disease has cognitive and psychiatric symptoms, especially in later disseminated stages. This pamphlet does not recommend any specific treatment for Lyme or tickborne diseases, but encourages providers to become knowledgeable about processes that may contribute to psychological symptoms, and potential misdiagnosis, in a patient with tickborne disease(s).