



Recognizing  
Lyme symptoms ●  
Diagnosing Lyme  
● Treating Lyme

[de.gov/lyme](http://de.gov/lyme)  
1-888-295-5156

## Transmission

The Lyme disease bacterium, *Borrelia burgdorferi*, is transmitted to animals and humans through the bite of an infected blacklegged or deer tick. Immature ticks are very tiny and can be difficult to see which can increase the possibility of undetected tick exposures. Ticks (including species other than the blacklegged or deer tick) can also transmit diseases other than Lyme disease, including Rocky Mountain spotted fever, ehrlichiosis and anaplasmosis.



There is no evidence that Lyme disease is transmitted from person-to-person. For example, a person cannot get infected from touching, kissing or having sex with a person who has Lyme disease. Humans most often acquire Lyme disease in the spring and summer months when they enjoy outdoor activities.

## Symptoms of Lyme Disease

The Lyme disease bacterium can infect several parts of the body which can cause different symptoms at different times. Symptoms of Lyme disease can be nonspecific and may resemble other diseases.



### Early Symptoms:

● Rash – Lyme disease is frequently characterized by an expanding red rash, commonly referred to as a bull's - eye rash. Rashes can occur anywhere on the body, and vary in size and shape. The rash can be warm to the touch, but usually not painful or itchy. Not all patients will develop the characteristic rash.

- Fever and/or chills
- Fatigue
- Muscle and joint aches
- Headache

Untreated infections can lead to a variety of symptoms, some of which can be very serious and debilitating. These symptoms can include:

- Severe joint pain and swelling (usually large joints, particularly the knees)
- Bell's palsy
- Heart palpitations and dizziness
- Severe headaches and neck stiffness due to meningitis
- Neurological problems



DELAWARE HEALTH  
AND SOCIAL SERVICES  
Division of Public Health

## Diagnosing Lyme disease

Diagnosis is based on symptoms, physical findings (i.e., bull's – eye rash, facial palsy or arthritis) and a history of possible exposure to ticks. Validated laboratory tests are available to assist the clinician with the diagnosis. Laboratory testing is not recommended or necessary when a patient develops the characteristic bulls-eye rash.



Lyme disease can be difficult to diagnose. Not all patients with Lyme disease will develop the characteristic bulls-eye rash and tick exposures often go undetected.

## Treatment

Most cases of Lyme disease can be cured with a few weeks of oral antibiotics. Depending on symptoms, some patients may require a second course of antibiotic therapy. Patients with certain neurological or cardiac forms of illness may require intravenous antibiotics.

A small percentage of patients with Lyme disease have symptoms that last months to years after treatment with antibiotics. These symptoms can include muscle and joint pains, arthritis, cognitive defects, sleep disturbance, and fatigue. The cause of these symptoms is unknown. There is evidence that they result from an autoimmune response, in which a person's immune system continues to respond even after the infection has been cleared.

## Surveillance and Reporting

The Division of Public Health (DPH) submits weekly data regarding all reportable diseases to CDC. CDC is then able to publish weekly reports and annual summaries in the Morbidity and Mortality Weekly Report (MMWR). The data in the weekly MMWR are provisional, based on weekly reports to CDC by state health departments.

For surveillance, a case of Lyme disease in Delaware is defined according to the CDC/ Council of State and Territorial Epidemiologists (CSTE) case definition.

The Bureau of Epidemiology in DPH utilizes Delaware Electronic Reporting and Surveillance System (DERSS) to automatically receive positive laboratory results from major commercial laboratories on all reportable diseases, including Lyme disease. All acute care hospitals in Delaware submit reportable disease reports electronically into DERSS.

Because of the high incidence of Lyme disease in Delaware and the difficulty with diagnosis, it is important to maintain a high level of surveillance for the disease. Epidemiologists send case report forms to ordering medical providers on each case to gather additional data. This data assists epidemiologists to determine which cases can be confirmed in accordance with the CDC/CSTE case definition.

## Tick Removal



Use fine-tipped tweezers or shield your fingers with a tissue, paper towel or rubber gloves. Avoid removing ticks with bare hands whenever possible. Grasp the tick close to the skin surface and pull upward with steady, even pressure.

Do not squeeze, crush, or puncture the body of the tick since its fluids (saliva, body fluids, gut contents) may contain infectious germs. After removing the tick, cleanse the site with an antiseptic or soap and water, and wash your hands.

## What is BLAST?

BLAST is an acronym from the Ridgefield, Connecticut, BLAST Program (used with permission) for the five steps to take to prevent Lyme disease:

- **B** — Bathe or shower within two hours of coming indoors.
- **L** — Look for ticks on your body and remove them.
- **A** — Apply repellent to your body and clothes.
- **S** — Safeguard your yard.
- **T** — Treat your pet.

