

## What is MLA?

Minnesota Lyme Association is a 501(c)(3) non-profit dedicated to education, advocacy, and patient support. MLA works cooperatively with the national Lyme Disease Association (LDA) and affiliates around the country. Our monthly meetings alternate between speaker nights and support nights. Brochures, handouts and other types of informational materials are available at each meeting.

For information on other MLA Chapters in Minnesota, please see our website: [mnlyme.org](http://mnlyme.org)

## How should I remove a tick?

- Do not place any product on the tick to encourage it to "back out" on its own!
- Use tweezers or a special tick-removing tool.
- Grasp the tick as close to the skin as possible and pull straight out.
- Don't squeeze, twist, burn or squash the tick, or allow any blood to remain on your skin.
- Wash the bite area with soap and water.
- Talk to your doctor about the need for preventive treatment.



CDC photo



Engorged nymph compared to pin

## Where can I find more information?

- Minnesota Lyme Association - [mnlyme.org](http://mnlyme.org)
- Lyme Disease Association - national nonprofit - [lymediseaseassociation.org](http://lymediseaseassociation.org)
- LymeDisease.org
- Canadian Lyme Disease Association - [canlyme.org](http://canlyme.org)
- International Lyme & Associated Diseases Society - [ilads.org](http://ilads.org)
- Tick Management Handbook - <http://goo.gl/MJj1WQ>

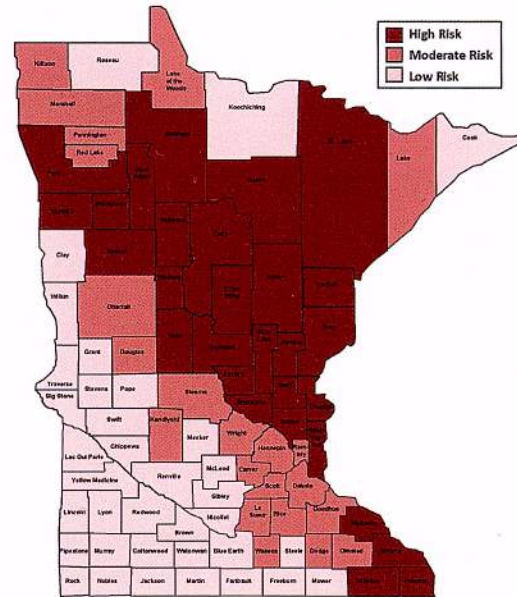
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# Lyme Disease

## Minnesota's Hidden Epidemic

### Minnesota Tick-borne Disease Risk\*

\*Based on average incidence (cases/100,000 population) of Lyme disease and human anaplasmosis cases in Minnesota, 2007-2011



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## Minnesota Lyme Association

Minnesotans across the state are at risk for acquiring tick-borne diseases. The highest risk is in the southeast, east central and north central areas of the state. Grassy fields, brush-filled wooded landscapes and places where residential neighborhoods meet the forest edge are prime tick habitat. This brochure contains information to help you mitigate your risk for Lyme and other tick-borne diseases.

Visit our website at: [www.mnlyme.org](http://www.mnlyme.org)

email: [lyme@mnlyme.org](mailto:lyme@mnlyme.org)

MLA is a Lyme Disease Association, Inc. affiliate. Brochure design courtesy of LymeDisease.org



## What is Lyme disease?



*Borrelia burgdorferi*

Lyme disease is an infection that can involve all organs of the human body, the brain and central nervous system, and the musculoskeletal system. The infection is caused by bacteria called spirochetes (say "SPY-ROW-KEETS").

The Lyme disease spirochete is named *Borrelia burgdorferi*.



## Key facts in Minnesota

- Minnesota is a high-risk state for Lyme disease and consistently ranks in the top 10 states for reported cases of Lyme disease. Reported cases have tripled in the last decade.
- Lyme disease is carried by the Eastern black-legged tick, *Ixodes scapularis*, also known as the deer tick. Ticks have four life stages: egg, larva, nymph and adult. Ticks may feed on hosts that harbor Lyme disease bacteria three times during their life cycle. Typical hosts include mice, squirrels, rabbits, ground-feeding birds and deer.
- Ticks easily survive our harsh winters and are active whenever temperatures reach 38 degrees. Deer ticks, with the potential to carry Lyme disease and co-infections, have expanded their range into most of Minnesota's 87 counties.
- Because deer ticks are tiny, nymphs are the size of a poppy seed, and a tick bite is painless, many people don't realize they've been bitten.

## What about the rash?

An expanding rash called an erythema migrans (EM) may occur. The CDC had an EM. The rash usually appears 2 to 30 days after the bite. A "bull's eye" or target-like rash is the easiest EM to recognize, but it can also be a solid red rash or a bruise. Some patients have more than one EM. Take a photo of a



Photo courtesy Paul Auerbach, MD



Photo courtesy MA Patmas, MD



Photo courtesy N

## How can I avoid contracting Lyme?

Most people contract Lyme disease from the bite of an infected deer tick. Not all ticks are infected; infection rates vary from one locality to another. Nymphal deer ticks are tiny, about the size of a poppy seed. Because their bite is painless, you may not notice them. The longer ticks are attached, the greater the risk for developing Lyme or other tick-transmitted diseases. Bites lasting less than 24 hours rarely cause Lyme disease but when infected ticks remain attached for their entire 3-4 day feeding period, the risk of infection is greater than 90%. Take these steps to reduce the risk of a bite or tick attachment lasting more than 24 hours.

- Reduce tick habitat where you live, work and play. Ticks dry out easily, preferring areas that provide shade and moisture. On your property, remove fallen leaves, cut the grass short and keep wood piles neat to reduce tick numbers.
- Use sprays containing permethrin on your clothing, footwear, camping and hunting gear and 30% DEET or 20% picaridin on your skin.
- Check yourself and your animals for ticks immediately and for several days after being in a tick-infested area. Promptly put tick-exposed clothing into the dryer for 60 min on high heat and take a shower; vigorous scrubbing will remove ticks that aren't fully attached.
- Carefully remove and save attached ticks for your doctor to identify.

If you are bitten in MN or WI, discuss using antibiotics to prevent disease with your doctor. A medical paper on managing tick bites is available at [www.mnlyme.org/patients](http://www.mnlyme.org/patients); click on the big tick. Print the paper and have your doctor read it before discussing your options. It's important to know that:

- Waiting to see if an EM rash develops is risky because many patients never develop one
- A single dose of doxycycline isn't very effective
- Better options use longer courses of antibiotics.

## Can I still have Lyme after treatment?

Yes, treatment sometimes fails and symptoms and/or signs of the infection may persist or progress. If that should happen, another course of antibiotics may be necessary. Often, the use of a different antibiotic or lengthier treatment can provide symptomatic relief.

## What are the symptoms?

Lyme disease has been called the “Great Imitator” because it can look like other diseases. Many people with Lyme disease have been misdiagnosed with more familiar conditions such as fibromyalgia or chronic fatigue syndrome. When the brain is involved, doctors may think a patient has MS, ALS, ADHD, Parkinson’s, or a mental illness. Below is a partial list of symptoms. Symptoms typically come and go and worsen over time if not treated.



- Flu-like illness
- Rash (in less than 70% of cases)
- Extreme fatigue
- Sick feeling (malaise)
- Stiff aching neck
- Headache, new onset migraine
- Joint pain, joint swelling
- Muscle pain, muscle twitching, “growing pains”
- Dizziness, ringing in ears, light or sound sensitivity, conjunctivitis
- Bell’s palsy (facial paralysis)
- Palpitations, chest pain
- Cognitive problems, difficulty concentrating
- Depression, irritability, mood swings, extreme panic attacks
- Forgetfulness, poor short-term memory
- Insomnia
- Abdominal pain, nausea, diarrhea
- Shortness of breath
- Tingling, burning, shooting pains, numbness

## What blood tests should I have?

Depending on the circumstances, blood tests are not always appropriate. In cases of a known tick bite or when an EM rash is present, testing is not helpful. That’s because the common Lyme disease tests look for human antibodies to the bacteria and it can take several weeks for those antibodies to appear.

If your symptoms have been present for several weeks or longer, ask your doctor to order IgM and IgG Western blot tests. The initial tests can be done by the doctor’s usual lab, but if negative, a new blood sample should be tested by a lab specializing in testing for tick-borne infections. One such lab is IGeneX, 797 San Antonio Road, Palo Alto, CA, 94303, 800-832-3200.

Be sure to get a copy of the detailed lab report of your test results; do not rely on reports describing the results simply as “positive” or “negative.” There are several valid ways to interpret Lyme disease Western blot results but most doctors and labs follow the criteria established by the Centers for Disease Control and Prevention (CDC).

The CDC lab criteria help identify patients who meet the CDC’s **strict surveillance case definition**; however, most cases of Lyme disease do not meet the CDC surveillance case definition. For example, some people never test positive for Lyme disease even though they are infected. That’s why Lyme disease is a clinical diagnosis – based on a patient’s history and physical exam – and why the CDC cautions doctors not to limit Lyme disease diagnoses to only those patients who meet the CDC lab criteria.

occur at the site of the tick bite; 70% of cases reported to the doctor at the site of the bite. Roughly 80% of all EMs are solid red ovals. The EM is not commonly seen. On dark skin an EM can look like a faint red rash and have it checked by a doctor as soon as possible.



Michael Patmas



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Photo courtesy Ed Masters, MD and the Lyme Disease Assn.

## How is Lyme disease treated?

Lyme disease is treated with antibiotics. New treatment guidelines for Lyme disease were developed by the International Lyme and Associated Diseases Society (ILADS) and published in the Sept. 2014 issue of Expert Reviews in Anti-infective Therapy. They recommend a wide range of options, making it easier for doctors to individualize care for their patients. The guidelines can be downloaded for free at <http://goo.gl/2N1VRd>