

Lyme Disease Fact Sheet

What is Lyme disease?

- ⇒ infectious disease caused by bacteria (*Borrelia burgdorferi*) transmitted by the young (nymph) and adult **deer tick** (*Ixodes scapularis*) (**Fig.1**).
- ⇒ may cause symptoms affecting the skin, nervous system, heart and/or joints of an individual.
- ⇒ Over 95,000 cases have been reported to the New York State Department of Health since Lyme disease became reportable in 1986.

Who gets Lyme disease?

- ⇒ age: all ages
- ⇒ locations: grassy and wooded environments are at an increased risk of exposure.
- ⇒ time of year: greater during times of the year when ticks are most active.
 - * nymphs, are active from **mid-May to mid-August** and are about the size of poppy seeds (**Fig.1**)
 - * adult ticks, which are approximately the size of sesame seeds (**Fig.1**), are most active from **March to mid-May** and from **mid-August to November**. Ticks can be active any time the temperature is above freezing.

How is Lyme disease transmitted?

- Ticks can become infected if they feed on small animals that are infected.
- The disease can be spread when an infected tick bites a person and stays attached for a period of time. In most cases, the tick must be attached for 36 hours or more before the bacteria can be transmitted.
- Lyme disease does not spread from one person to another. Transfer of the bacteria from an infected pregnant woman to the fetus is extremely rare.

What are the symptoms of Lyme disease?

- ⇒ bull's eye rash or erythema migrans (EM), (**Fig.2**) about two inches in diameter, appears and expands around or near the site of the bite. Sometimes, multiple rash sites appear.
- ⇒ early stages: chills and fever, headache, fatigue, stiff neck, muscle and/or joint pain, and swollen glands. NOTE: If Lyme disease is unrecognized or untreated in the early stage, more severe symptoms may occur.
- ⇒ later stages: severe fatigue, a stiff aching neck, and tingling or numbness in the arms and legs, or facial paralysis can occur.
- ⇒ most severe symptoms of Lyme disease may not appear until weeks, months or years after the tick bite. These can include severe headaches, painful arthritis, swelling of the joints, and heart and central nervous system problems.



Figure 2. Characteristic bull's eye rash of Lyme's disease. Also called erythema migrans/EM. *Source: Centers for Disease Control (CDC)*

Blacklegged Tick (*Ixodes scapularis*)



Figure 1. Lyme disease is transmitted by the deer tick. *Source: Centers for Disease Control (CDC)*

Lyme Disease Fact Sheet contd...

When do symptoms appear?

Early symptoms usually appear within three to 30 days after the bite of an infected tick.

Does past infection with Lyme disease make a person immune?

NO! You can be reinfected if bitten later by another infected tick.

What is the treatment for Lyme disease?

- * Early treatment with antibiotics results in complete cure.
- * Although not routinely recommended, taking antibiotics within three days after a tick bite may be beneficial for some persons. This would apply to deer tick bites that occurred in areas where Lyme disease is common and there is evidence that the tick fed for 36 or more hours. In cases like this you should discuss the possibilities with your doctor or licensed health care provider.

What can be done to prevent Lyme disease?

- ⇒ wear light-colored clothing (for easy tick discovery)
- ⇒ tuck pants into socks and shirt into pants.
- ⇒ Check after every two to three hours of outdoor activity for ticks on clothing or skin.
- ⇒ Brush off any ticks on clothing before skin attachment occurs.
- ⇒ A thorough check of body surfaces for attached ticks should be done at the end of the day. If removal of attached ticks occurs within 36 hours, the risk of tick-borne infection is minimal.
- ⇒ Use repellents but be aware of health risks and follow label direction!! Commonly used repellents contain the active ingredients DEET (N, N-diethyl-m-toluamide), picaridin (also known as KBR 3023), oil of lemon eucalyptus, permethrin, or botanical oils. Skin reactions (particularly at DEET concentrations of 50 percent and above) and eye irritation are the most frequently reported health problems. Picaridin and oil of lemon eucalyptus have been shown to offer long-lasting protection against mosquitoes but there are limited data regarding their ability to repel ticks. Products containing permethrin are for use on clothing only, not on skin. Rather than acting as a repellent, permethrin kills ticks and insects that come in contact with treated clothes. Permethrin can cause eye irritation. Insect repellents containing botanical oils, such as oil of geranium, cedar, lemongrass, soy or citronella are also available, but there is limited information on their effectiveness and toxicity. **If you decide to use a repellent, use only what and how much you need for your situation.** In addition:

	<p style="text-align: center;">DO THIS....</p> <p><i>Source: New York State Department of Health (NYSDOH)</i></p>
<p>1. Use a pair of pointed tweezers</p>	
<p>2. Grasp the tick by the head or mouth right where it enters the skin</p>	
<p>3. Pull firmly and steadily upward</p>	
<p>4. Place the tick in a small container of rubbing alcohol to kill it</p>	
<p>5. Clean the bite wound with rubbing alcohol or hydrogen peroxide</p>	
<p>6. Monitor the site of the bite for the next 30 days for the appearance of rash</p>	
<p>7. If you develop a rash or flu-like symptoms, contact your primary care provider immediately!</p>	
<p>Figure 3. How to safely remove a tick.</p>	

Tick Removal DO's and DON'Ts

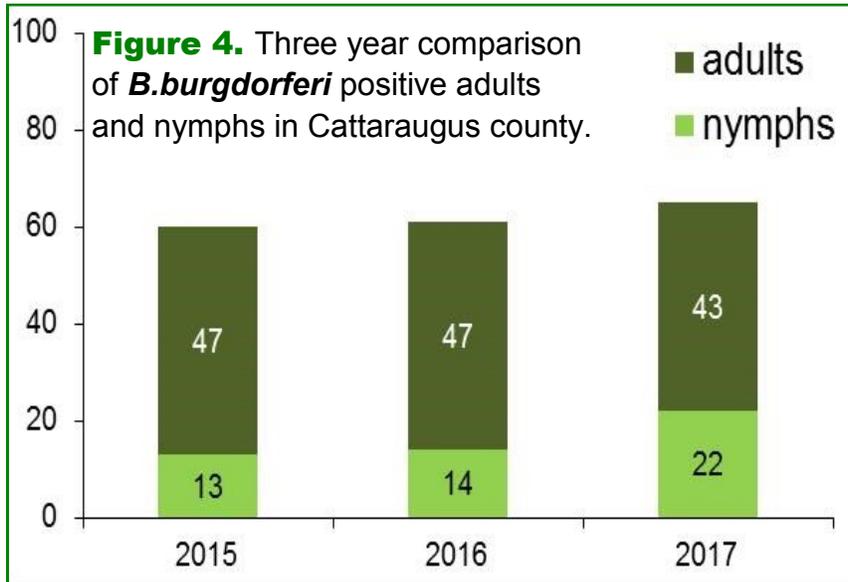
DO...

As indicated in **Fig. 3.**

DO NOT...

- squeeze, crush or puncture the body of the tick, which may contain infectious fluids.
- remove ticks by using petroleum jelly, lit cigarettes or other home remedies because these may actually increase the chance of contracting a tick-borne disease.

Deer Tick Surveillance and Testing in Certain Areas of Cattaraugus County, NY (2015-2017)



Annual deer tick surveillance performed by the New York State Department of Health (NYSDOH) included ticks collected from various sites within Cattaraugus County. These ticks were tested for the presence of pathogens such as *Borrelia burgdorferi* (Fig.4) (the Lyme disease agent) and others. 87% of nymphs and 57% of adults collected (data not shown) were tested for the presence of *B. burgdorferi*.

Over 10 different sites including Allegany State Park, Deer Lick Conservation, Gargoyle Park, Pfeiffer Nature Center, Zoar Valley multi-use area and Eden Heights were sampled. The data shows that in 2017, the percentage of **adult ticks** positive for *B. burgdorferi* was slightly lower compared to 2015 and 2016 (Fig.4). Interestingly, the percentage of nymphs (larval stage) positive for *B. burgdorferi* was about 8% higher in 2017 compared to 2015 or 2016. Among the sites sampled in 2017, the data shown in Fig.5 demonstrates the distribution of ticks bearing *B. burgdorferi* within Cattaraugus County.

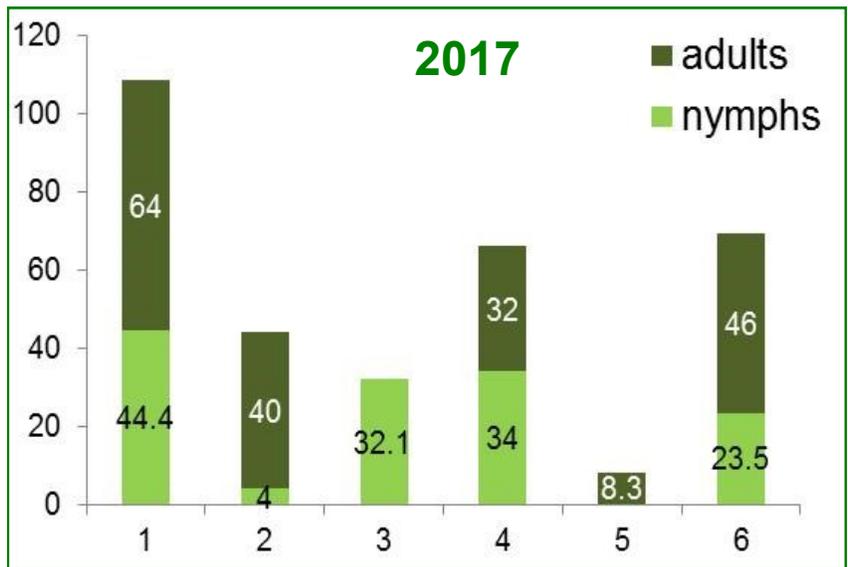


Figure 5. 2017 data from Cattaraugus County showing distribution of *B. burgdorferi* positive nymphs and adult ticks in various locations as follows:

1. Allegany State Park, Red House
2. Deer Lick Conservation, Persia
3. Pfeiffer Nature Center, Eshelman Preserve, Portville
4. Gargoyle Park, Allegany/Olean
5. Zoar Valley multi-use area, Persia
6. Eden Heights, Olean

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Disclaimer: These data only provide information about infected ticks at a precise location, at a specific point in time and do not broadly predict risk for a larger area. This information is only meant to provide awareness of potential risks within the county. The Cattaraugus County Health Department urges all residents to follow precautions and be alert when engaging in activities that may expose them to infected ticks.

