

Lyme Disease

What is Lyme disease?

Lyme disease is caused by a bacterium, *Borrelia burgdorferi*. It was first identified in the U.S. in a cluster of children in Lyme, Connecticut in 1977, hence the name. The bacteria are transmitted to humans by the bite of infected deer ticks and cause more than 20,000 infections in the United States each year.

Who gets Lyme disease?

Lyme disease can affect people of any age. Persons who spend time in wooded or grassy areas are at greater risk of disease because of the increased exposure to ticks. Persons who work or play in their yard, participate in recreational activities away from home such as hiking, camping, fishing, and hunting, or engage in outdoor occupations, such as landscaping, brush clearing, forestry, and wildlife and parks management in endemic areas may also be at risk of contracting Lyme disease.

When are ticks most active?

Deer ticks in the nymphal, or juvenile, stage, which are less than a tenth of an inch long (<2mm), are active in spring and summer. This is the stage most likely to bite and infect people. Adult ticks, which are about an eighth of an inch in size (2-3mm), are most active in middle to late fall. Not all deer ticks are infected with Lyme disease though.

How is Lyme disease transmitted?

Lyme disease is spread in New England by the bite of the black-legged tick (*Ixodes scapularis*). Other species transmit the bacteria in other parts of the country. Ticks feed by inserting their mouths into the skin of a host and drawing blood. If a tick feeds on an animal infected with Lyme disease and then on a person, it can transmit the bacteria to the person. 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. Lyme disease acquired during pregnancy may lead to infection of the placenta and possible stillbirth. However, no negative effects on the fetus have been found when the mother receives appropriate antibiotic treatment. There are no reports of Lyme disease transmission from breast milk.

What are the symptoms of Lyme disease?

The illness usually occurs during the summer months and generally starts as a large reddish circular rash around or near the site of the tick bite. Multiple rash sites may also appear. During the rash stage, or occasionally prior to the rash, other symptoms such as chills, fever, headache, fatigue, stiff neck, swollen glands, and muscle and/or joint pain may be present. These may last for several weeks. If Lyme disease is left untreated for a few weeks or months after the rash onset, complications such as meningitis, facial palsy, arthritis, and heart abnormalities may occur and other body

systems may be affected. Swelling and pain in the large joints may recur over many years. These later symptoms may appear in people who did not have early symptoms or did not recognize them.

How long does it take the symptoms to appear?

Symptoms usually begin within a month of exposure, but onset ranges from 3 to 32 days.

Does past infection with Lyme disease make a person immune?

It is possible for someone to get Lyme disease more than once based on current data.

What is the treatment for Lyme disease?

Antibiotics are used effectively against Lyme disease. Early diagnosis improves the outcome of treatment so it is important to contact your healthcare provider if you are feeling sick or develop a rash.

Is there a vaccine?

A vaccine was available for Lyme disease, but in February 2002, the manufacturer announced that LYMERIX would no longer be commercially available.

Is there Lyme disease in New Hampshire?

Lyme disease is most prevalent in the northeastern part of the United States, which includes New Hampshire.

What can I do to prevent getting Lyme disease?

When in tick-infested areas:

- Wear light-colored clothing to make ticks easy to see
- Tuck pants into socks and shirts into pants
- Consider using an insect repellent. Products containing DEET have been shown to be effective in repelling ticks. Clothes may be treated with Permethrin. Always follow

manufacturer's instructions when applying repellents

- Check after every two or three hours of outdoor activity for ticks on clothing and skin
- A thorough check of body surfaces for attached ticks should be done at the end of the day
- Reduce the number of ticks around your home by keeping grass short, removing leaf litter, and creating a wood chips or gravel barrier where your lawn meets the woods.
- If a tick is attached to your skin for less than 24 hours, your chance of getting Lyme disease is extremely small. But just to be safe, monitor your health closely after a tick bite and be alert for any signs and symptoms of illness.

How should a tick be removed?

Grasp the mouthparts with a tweezer as close as possible to the attachment (skin) site. If tweezers are not available, use fingers shielded with tissue or rubber gloves. Do not handle a tick with bare hands. Be careful not to squeeze, crush, or puncture the body of the tick, which may contain infectious fluids. It is important that a tick be removed as soon as it is discovered. After removing the tick, thoroughly disinfect the tick site with rubbing alcohol or an antibacterial wash and then wash hands with hot water and soap. See or call a doctor if there are concerns about incomplete tick removal. Do not attempt to remove ticks by using petroleum jelly, lit cigarettes, or other home remedies because they may actually increase the chance of contracting a tick-borne disease.

For specific concerns or questions about Lyme disease, call the NH Department of Health and Human Services at 603-271-4496. For further information, refer to the Centers for Disease Control and Prevention website at www.cdc.gov or the New Hampshire Department of Health and Human Services website at www.dhhs.state.nh.us.

SUBJECT: Lyme Disease in New Hampshire, An Update

NH Department of Health and Human Services (NH DHHS) recommends:

- Increased awareness and education to the public regarding signs and symptoms of Lyme disease and methods for prevention.

Lyme disease is a tick-borne disease caused by the spirochete *Borrelia burgdorferi*. In New Hampshire, the deer tick (*Ixodes scapularis*), known to transmit Lyme disease to humans, occurs throughout the state. Over the last several years, The New Hampshire Department of Health and Human Services (NH DHHS) has observed an increase in the number of confirmed reported Lyme disease cases in NH residents. Several New England states have observed a similar increase in Lyme disease.

During 2006, 617 cases of Lyme disease were reported to the NH DHHS; this is a 128% increase from 2005. Counties with the highest incidence during 2006 were Rockingham (104 cases per 100,000 persons), Strafford (73 cases per 100,000 persons), and Hillsborough (37 cases per 100,000 persons). Please see the attached report and map for other Counties and years and rates by town (also available at <http://www.dhhs.nh.gov/DHHS/CDCS/LIBRARY/Fact+Sheet/lyme-disease.htm>). See the NH Lyme Bulletin for additional information on the historical incidence of Lyme disease in NH (available at the website above). Most cases of Lyme disease in NH occur during the summer months, between June and August. Patients treated with antibiotics in the early stages of the infection usually recover rapidly and completely, therefore early diagnosis and treatment of Lyme disease is important.

Signs and Symptoms: Lyme disease is characterized by a large reddish rash around or near the site of the tick bite. Multiple rash sites may also appear. During the rash stage, or occasionally prior to the rash, other symptoms such as chills, fever, headache, fatigue, stiff neck, swollen glands, and muscle and/or joint pain may be present. If untreated, people may progress to neurologic, joint, and heart illness. Individuals should monitor their health closely after a tick bite and be alert for any signs and symptoms of illness. If an individual has signs or symptoms of Lyme disease (regardless of a recognized tick bite), they should promptly seek medical attention. Antibiotics are effective in treating Lyme disease. Early diagnosis improves the outcome of treatment so it is important to contact a healthcare provider if an individual is feeling sick or develops a rash.

Prevention: Lyme disease is preventable. People may be exposed to Lyme disease wherever deer ticks are present, including their own yards, or other wooded or grassy areas.

When in areas with ticks,

Reduce tick bites and promptly remove attached ticks:

1. Wear light-colored clothing to make ticks easy to see.
2. Tuck pants into socks and shirts into pants.

3. Consider using an insect repellent. Products containing DEET have been shown to be effective in repelling ticks. Clothes may be treated with Permethrin.
4. Check after every two or three hours of outdoor activity for ticks on clothing and skin. A thorough check of body surfaces for attached ticks should be done at the end of the day. Promptly remove any attached ticks. The chance of disease transmission increases with duration of time an infected tick is attached; if a tick is attached for fewer than 24 hours the chance of Lyme disease transmission is extremely small.

Reduce the number of ticks around your home where people spend time

1. Keep grass short.
2. Remove leaf litter.
3. Create a wood chips or gravel barrier where your lawn meets the woods.

Additional information on preventing Lyme disease through landscape management and chemical control is available from the “Tick Management Handbook”, accessible free-of-charge at the following website: <http://www.cdc.gov/ncidod/dvbid/lyme/index.htm>.

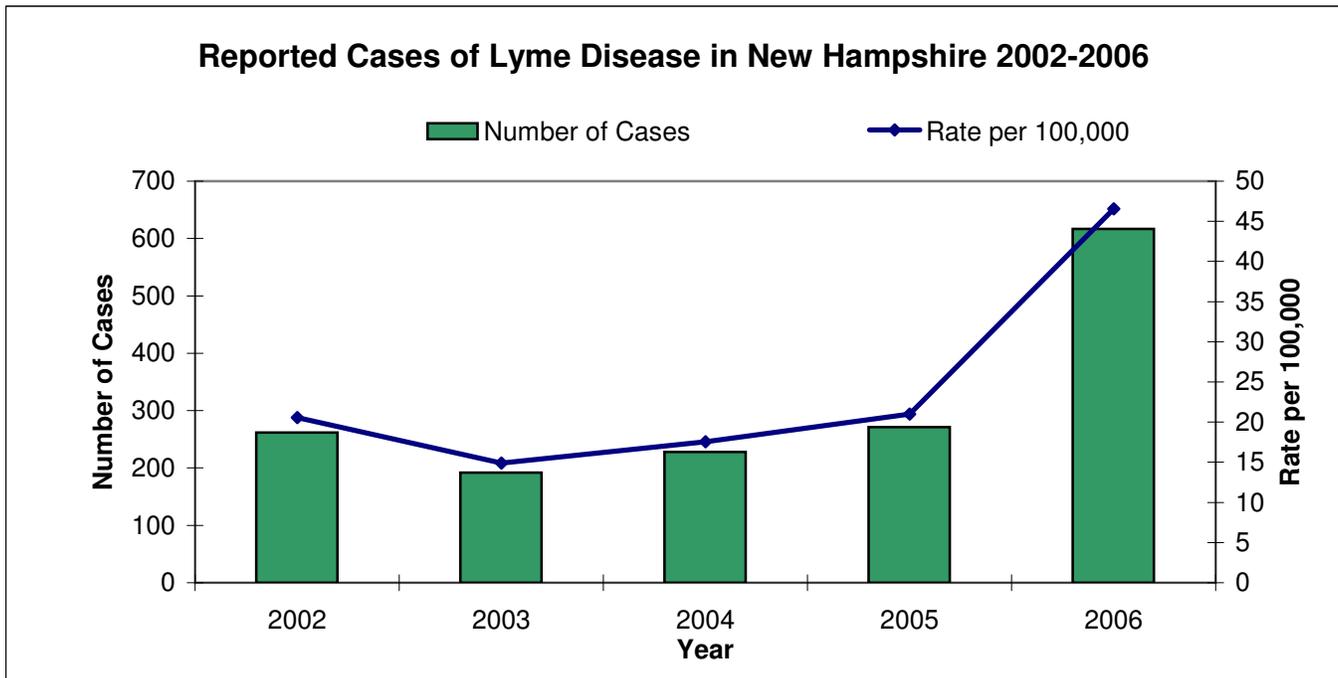
For additional information on Lyme disease incidence, diagnosis, treatment, and prevention and public awareness postings please visit the following websites: <http://www.dhhs.state.nh.us/DHHS/CDCS/LIBRARY/Fact+Sheet/lyme-disease.htm>

<http://www.cdc.gov/ncidod/dvbid/lyme/index.htm>

NH Department of Health and Human Services
Communicable Disease Surveillance Section

Reported Cases of Lyme Disease in New Hampshire, 2002-2006

County		2002	2003	2004	2005	2006
Belknap	Number of Cases	6	6	11	2	10
	Rate per 100,000	10	10	18	3	16
Carroll	Number of Cases	9	2	9	4	5
	Rate per 100,000	20	4	19	8	10
Cheshire	Number of Cases	5	7	3	6	12
	Rate per 100,000	7	9	4	8	15
Coos	Number of Cases	1	1	2	4	4
	Rate per 100,000	3	3	6	12	12
Grafton	Number of Cases	2	10	7	5	7
	Rate per 100,000	2	12	8	6	8
Hillsborough	Number of Cases	37	37	39	77	151
	Rate per 100,000	9	9	10	19	37
Merrimack	Number of Cases	13	10	16	9	28
	Rate per 100,000	9	7	11	6	19
Rockingham	Number of Cases	115	78	103	133	310
	Rate per 100,000	40	27	35	45	104
Strafford	Number of Cases	73	37	37	31	88
	Rate per 100,000	63	32	31	26	73
Sullivan	Number of Cases	1	4	1	0	2
	Rate per 100,000	2	10	2	0	5
Total	Number of Cases	262	192	228	271	617
	Rate per 100,000	21	15	18	21	47

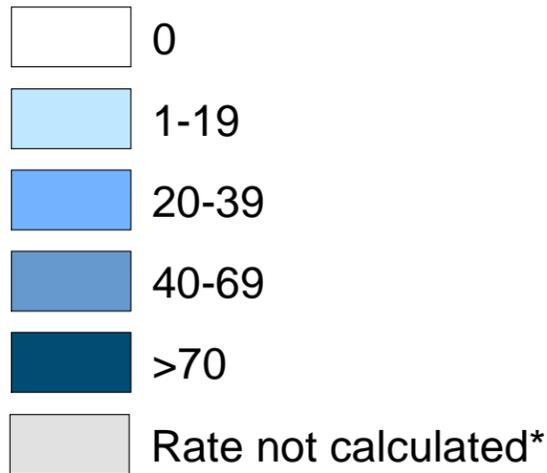


Note: All the data in this report are based upon information provided to the New Hampshire Department of Health and Human Services under specific legislative authority. The numbers reported may represent an underestimate of the true absolute number and incidence rate of cases in the state. Any release of personal identifying information is conditioned upon such information remaining confidential. The unauthorized disclosure of any confidential medical or scientific data is a misdemeanor under New Hampshire law. The department is not responsible for any duplication or misrepresentation of surveillance data released in this report. Rates are calculated using U.S. Census Bureau population estimates. Prepared By: Beth Daly, MPH, NH DHHS Communicable Disease Surveillance Section on 05/21/2007

**New Hampshire Department of Health and Human Services
 Division of Public Health Services
 Communicable Disease Surveillance Section**

**Reported Cases of Lyme Disease
 in New Hampshire, 2006**

Rates per 100,000



*Rates not calculated for towns with fewer than 5 cases

Note: County/town is based upon residence at the time of disease diagnosis and includes no additional information regarding exposure location. Data is complete as of May 21, 2007.

