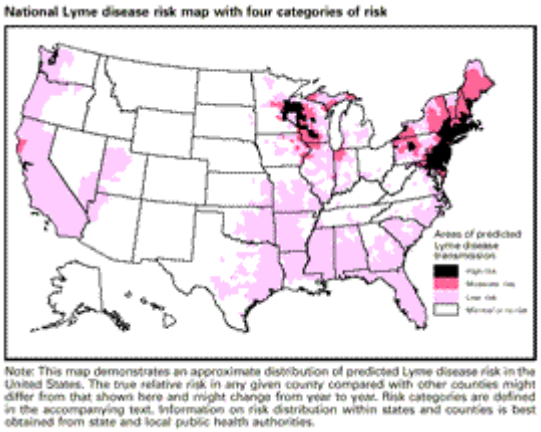
Safety Briefs 2004

CIVIL AIR PATROL – ARUNDEL COMPOSITE SQUADRON

June 2004	SAFETY	LYME DISEASE

Lyme disease was named in **1977** when arthritis was observed in a group of children around the town of **Old Lyme, Connecticut**. In 2002, more than **23,000 infections** have been reported in the United States. Most cases were localized in the northeastern, mid-Atlantic, and upper north-central regions, along with several counties in northwestern California. Ninety-five percent (**95%**) of the cases were from **Connecticut**, Delaware, Rhode Island, Maine, **Maryland**, Massachusetts, Minnesota, New Jersey, New Hampshire, New York, Pennsylvania, and Wisconsin. It is most common during late spring and summer months, when nymphal ticks are most active.



National Lyme Disease Risk Map

Lyme disease is caused by a bacteria called **Borrelia burgdorferi**. It is transmitted to humans by **infected deer ticks** and **western black-legged ticks** (found mostly on the Pacific Coast). These ticks spread the disease to animals and humans through **tick bites**.

Deer tick from left to right on a centimeter scale: Adult female, adult male, nymph, and larva

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LYME DISEASE STAGES

1st-Stage – Early Lyme Disease

During the 1st-stage, a circular rash appears, usually about 7 days after the tick's bite (however, the rash can appear anywhere from 1-day to 1-month). The center of the rash may become clear as it grows, giving it an appearance of a **"bull's-eye"**. The rash may be warm, but it is usually not painful.

Tick bite rash (erythema migrans) characteristic of Lyme Disease

The symptoms of the disease are non-specific. These include **fever, malaise, fatigue, headache, muscle ache, and joint aches**. Because the **symptoms typically appear 7-14 days after the tick's bite**, the disease is usually **difficult to diagnose** because the infected person often forgets about it during a visit to the doctor's office.

2nd-Stage – Early Disseminated Lyme Disease

During this stage, the infection of the bacteria is **beginning to spread** and starts to affect certain body functions. This stage occurs weeks or months after infection. Symptoms include **numbness and pain in arms or legs, paralysis of facial muscles (usually on one side of the face), and meningitis (fever, stiff neck, and severe headaches)**.

3rd-Stage – Late (or Chronic) Lyme Disease

This stage can occur months or even years after infection in patients who either never received antibiotic treatment for early Lyme disease, or whose treatment did not kill all of the bacteria that caused the Lyme disease. Symptoms include **chronic Lyme arthritis** (periodic painful swelling of large joints, such as the knees), **nervous system problems** (including memory loss and difficulty concentrating), and **chronic pain in muscles and/or restless sleep**.

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LYME DISEASE PREVENTION -and- CONTROL

The best prevention is to **avoid tick habitats**, including moist, shaded environment, leaf litter, low-lying vegetation in wooded, brushy or overgrown grassy areas. Both deer and rodent hosts must be abundant for the ticks to survive.

Wear **light colored clothing, long-sleeved shirt, tuck pants into socks or boot tops**. The risk of tick attachment can also be reduced by applying insect repellents containing **DEET** to clothes and exposed skin, and **Permethrin** to clothes **only**.

The transmission from an infected tick is **unlikely to occur before 36 hours**. Therefore, **prompt removal** of any attached tick will help prevent infection. Embedded ticks should be removed using **fine-tipped tweezers**.

Do **NOT** use **petroleum jelly, a hot match, nail polish, or other products** to try to kill the tick. **Cleanse** the infected area with an **antiseptic** after tick removal.

LYME DISEASE TESTS -and- TREATMENT

The test is used to determine if your blood has made antibodies to the bacterium that causes Lyme disease. Since these antibodies to the bacterium do not appear in your blood **until 6-8 weeks after the tick bite**, the infection is **difficult to diagnose**. The most common blood test given is **ELISA** (Enzyme-Linked Immunosorbent Assay), followed by **Western Blot** (Immunoblot) test to confirm the results of an **ELISA** test. **Both** blood tests are required for a **positive diagnosis** for Lyme disease. The tests can typically be done at your family physician's office.

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LYME DISEASE TESTS -and- TREATMENT – cont'd.

There is **no vaccine** currently available for Lyme disease (a vaccine called **LYMErix** was withdrawn from the market, and not manufactured commercially since 2002). **Antibiotics** (such as doxycycline, amoxicillin, cefuroxime axetil, erythromycin, etc.) for **3-4 weeks** are generally effective in **early-stage** disease treatment. **Later-stage** disease may require treatment with **intravenous ceftriaxone or penicillin for 4 weeks or more**.

Lyme disease bacteria are **NOT** transmitted from person-to-person from contact, such as touching or kissing. Having had Lyme disease, however, does **NOT** protect a person from reinfection. **Some people have had Lyme disease more than once, after re-exposure to infective tick bites**. This stresses the **need for continued tick bite prevention activities**, such as wearing appropriate clothing when in tick-infested areas, daily tick checks, and quick removal of attached ticks.

GET MORE INFORMATION

References:

1. Center for Disease Control and Prevention (http://www.cdc.gov)
2. U.S. Food and Drug Administration (http://www.fda.gov)
3. Family Doctor Organization (http://familydoctor.org)
4. Lab Tests Online (http://www.labtestonline.org)
5. Teens Health Organization (http://kidshealth.org/teen/)
6. National Institutes of Health (NIH) Lyme Disease and Other Tick-Borne Diseases http://www.niaid.nih.gov/publications/tick.htm