



Lyme Disease

Definition:

Lyme disease is caused by the bacteria *Borrelia burgdorferi* and *Borrelia mayonii*. Lyme disease is transmitted by the bite of an infected deer tick.

Signs and symptoms:

Symptoms of Lyme disease include the formation of a characteristic expanding rash (erythema migrans) at the site of a tick bite 3-30 days after exposure. This rash occurs in 80% of patients but is not always noticed. Fever, headache, joint and muscle pains, and fatigue are also common during the first several weeks. Disseminated features of Lyme disease can include arthritis in one or more joints (often the knee), Bell's palsy and other cranial nerve palsies, meningitis, and carditis (AV block). Lyme disease is rarely fatal.

Transmission:

Lyme disease is transmitted to a person through the bite of an infected deer tick (*Ixodes scapularis*). This tick is endemic in the state of Maine and can be found throughout the state. In order to transmit Lyme disease the tick must be attached for 24-48 hours. Lyme disease cannot be transmitted from person to person.

Diagnosis:

Lyme disease is diagnosed by clinical symptoms and laboratory tests. Two-step testing is recommended for the best interpretation. Co-infections with other tickborne diseases may occur and should be considered.

Role of the School Nurse:

Prevention

- Provide education to students and staff regarding prevention efforts including: Wearing protective clothing, using EPA-approved repellents, using caution in tick infested areas, and performing daily tick checks.
- School nurses should encourage the use of EPA-approved repellents when outside (following local policy guidelines), and always performing a tick check when returning indoors.
 - School nurses can apply repellent with parental permission.
- If a tick is found, the school nurse should remove the tick using tweezers or a tick spoon. Identification of the tick may be useful.
- Tick cards are available for identification at www.maine.gov/dhhs/order.
- Whole ticks in safe containers may be given to the parents.
- Testing of the tick is not recommended.

Treatment Recommendations

- If a bulls-eye rash is noted, the child should be referred to their primary care physician for treatment.
- Treatment is available and is most effective when it is started early. Several treatment options are available and are usually prescribed for 14-21 days.

Exclusions

- There is no need to exclude students from school for Lyme disease.
- Education modifications may be warranted in children with a positive diagnosis.

Reporting Requirements

- Lyme disease is a reportable disease.

Resources:

- Maine CDC Lyme disease website (including fact sheet) www.maine.gov/lyme
- Lyme disease case data <https://data.mainepublichealth.gov/tracking/home>
- Lyme Disease Resources for Educators www.maine.gov/dhhs/schoolcurricula
- Tickborne Diseases of the United States Physician's Reference Manual available at www.maine.gov/dhhs/order
- Insect Repellent Finder (including time of protection) <http://cfpub.epa.gov/oppref/insect/index.cfm#searchform>
- Tick Submission information (for identification) www.ticks.umaine.edu
- IDSA Lyme Disease Treatment Guidelines <http://cid.oxfordjournals.org/content/43/9/1089.full>
- Federal CDC Lyme disease website www.cdc.gov/lyme