

Lyme Disease

Jo Daviess County Health Department

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Lyme disease is caused by the bacterium *Borrelia burgdorferi* and is transmitted to humans through the bite of infected blacklegged ticks. Black legged ticks live about two years and go through four life phases: egg, larva, nymph, and adult. Larvae are miniscule, no bigger than the period at the end of a sentence, and feed only on birds or mice. Most humans are infected through the bites of immature ticks called nymphs. Nymphs are about as big as a poppy seed but will seek larger hosts, including deer, squirrels, rabbits, chipmunks, dogs, and humans. Adult ticks can also transmit Lyme disease bacteria, but they are much larger and are more likely to be discovered and removed before they have had time to transmit the bacteria. In most cases, the tick must be attached for 36 to 48 hours or more before the Lyme disease bacterium can be transmitted.

Typical symptoms of Lyme disease include fever, headache, fatigue, muscle and joint aches, and swollen lymph nodes. A characteristic skin rash called erythema migrans(2) occurs in approximately 70 to 80 percent of infected persons. It begins after a delay of 3 to 30 days, usually at the site of a tick bite but may appear on any area of the body. It sometimes clears as it enlarges, resulting in a target or “bulls-eye” appearance. Diagnoses is confirmed by a two-step blood test designed to be done together using the same blood sample. The first step uses a testing procedure called “EIA” (enzyme immunoassay) or rarely, an “IFA” (indirect immunofluorescence assay). If this first step is negative, no further testing of the specimen is recommended. If the first step is positive or indeterminate (sometimes called "equivocal"), the second step should be performed. The second step uses a test called an immunoblot test, commonly, a “Western blot” test. Results are considered positive only if the EIA/IFA and the immunoblot are both positive.

Patients treated with appropriate antibiotics in the early stages of Lyme disease usually recover rapidly and completely. Antibiotics commonly used for oral treatment include doxycycline, amoxicillin, or cefuroxime axetil. Certain patients may require intravenous treatment with drugs such as ceftriaxone or penicillin. If left untreated, infection may spread to joints, the heart, and the nervous system. This can result in complications such as severe headaches and neck stiffness, facial or Bell's palsy (loss of muscle tone or droop on one or both sides of the face), heart palpitations, episodes of dizziness or shortness of breath, and arthritis with intermittent pain in tendons, muscles, joints, and bones. Rarely, inflammation of the brain and spinal cord can occur.(1)

In **2012** the CDC confirmed 22,014 cases of Lyme disease nationwide. 204 of these cases occurred Illinois, and **8 of these were in Jo Daviess County**. In **2013** there were 27,203 confirmed cases in the U.S. with 337 of these occurring in Illinois and **15 in Jo Daviess County**. There were 25,359 cases nationally in **2014**, 233 cases in Illinois, and **8 confirmed cases in Jo Daviess County**. (1) In **2015** there were **12 confirmed cases in Jo Daviess County**; state and national statistics are not yet available.

Lyme disease prevention begins with avoiding contact with ticks. Avoid wooded and brushy areas with high grass and leaf litter, or use repellents that contain 20 to 30% DEET (N, N-diethyl-m-toluamide) (1) on exposed skin and clothing April through September when ticks are most active. Bathe or shower as soon as possible after coming indoors (preferably within 2 hours) to wash off and more easily find ticks that are crawling on you. Carefully examine children, gear and pets after they spend time outdoors and talk with your veterinarian about using tick preventives on your pet. Mow the lawn frequently, keep the leaves raked, and clear tall grasses and brush around homes and at the edge of lawns.(2) Taking these simple, easy precautions can greatly reduce your risk of getting Lyme disease.

References

(1) www.cdc.gov/lyme;

(2) <http://www.mayoclinic.org/diseases-conditions/lyme-disease/basics/symptoms/con-20019701>