

Merlin disease code: 06959 Lyme Disease

[Paper case report form](#)
Merlin extended data required

Background

This surveillance case definition was developed for national reporting of Lyme disease; it is not intended to be used in clinical diagnosis.

Lyme disease is a systemic, tick-borne disease with protean manifestations, including dermatologic, rheumatologic, neurologic, and cardiac abnormalities. The most common clinical marker for the disease is erythema migrans (EM), the initial skin lesion that occurs in 60%-80% of patients.

If **either** of the following are true, see ***acute Lyme disease***:

- Symptom onset was within 30 days of laboratory testing
- **Or** a health care provider-diagnosed EM was observed.

If **either** of the following are true, see ***late-manifestation Lyme disease***:

- Symptom onset was more than 30 days prior to laboratory testing and no health care provider-diagnosed EM was observed
- **Or** any of the following are reported: recurrent joint swelling, lymphocytic meningitis, cranial neuritis including Bell's palsy, radiculoneuropathy (radiating pain along a nerve, e.g., sciatica, symmetric or asymmetric numbness or tingling), encephalomyelitis, or second or third degree atrioventricular conduction defects.

Acute Lyme disease

For purposes of surveillance, EM is defined as a skin lesion that typically begins as a red macule or papule and expands over a period of days to weeks to form a large round lesion, often with partial central clearing. A single primary lesion must reach ≥ 5 cm in size across its largest diameter. Secondary lesions also may occur. Annular erythematous lesions occurring within several hours of a tick bite represent hypersensitivity reactions and do not qualify as EM. For most patients, the expanding EM lesion is accompanied by other acute symptoms, particularly fatigue, fever, headache, mildly stiff neck, arthralgia, or myalgia. These symptoms are typically intermittent. **The EM diagnosis must be made by a health care provider.** Laboratory confirmation is recommended for persons with no known exposure.

Late-manifestation Lyme disease

For purposes of surveillance, late manifestations include any of the following when an alternate explanation is not found:

- ***Musculoskeletal system:*** Recurrent, brief attacks (weeks or months) of objective joint swelling in one or a few joints, sometimes followed by chronic arthritis in one or a few joints. Manifestations not considered as criteria for diagnosis include chronic progressive arthritis not preceded by brief attacks and chronic symmetrical polyarthrititis. Additionally, arthralgia, myalgia, or fibromyalgia syndromes alone are not criteria for musculoskeletal involvement.
- ***Neurological system:*** Any of the following, alone or in combination: lymphocytic meningitis; cranial neuritis, particularly facial palsy (may be bilateral); radiculoneuropathy; or, rarely, encephalomyelitis. Headache, fatigue, paresthesia, or mildly stiff neck alone, are not criteria for neurologic involvement.

- *Cardiovascular system:* Acute onset of high-grade (second degree or third degree) atrioventricular conduction defects that resolve in days to weeks and are sometimes associated with myocarditis. Palpitations, bradycardia, bundle branch block, or myocarditis alone are not criteria for cardiovascular involvement.

Clinical criteria for case classification

Acute Lyme disease

Confirmatory:

Health care provider-diagnosed EM \geq 5 cm.

Presumptive:

All of the following:

- Health care provider-diagnosed Lyme disease in the absence of EM,
- **And** symptom onset within 30 days of laboratory testing,
- **And** no late clinical manifestations.

Late-manifestation Lyme disease

Confirmatory:

At least one musculoskeletal, neurological, or cardiovascular system late manifestation.

Presumptive:

Both of the following:

- Health care provider-diagnosed Lyme disease in the absence of late clinical manifestations
- **And** laboratory testing more than 30 days after symptom onset.

Unknown Lyme disease

No clinical information available (no medical record or patient interview).

Not a case

Either of the following:

- Person is asymptomatic
- **Or** patient's physician specifically stated that this is not a Lyme disease case.

Laboratory criteria for case classification

Acute Lyme disease

One or more of the following:

- Culture positive for *B. burgdorferi*;
- **Or** IgG western blot is positive for 5 or more of the following bands: 18 kDa, 21-25 kDa (OspC), 28 kDa, 30 kDa, 39 kDa (BmpA), 41 kDa (Fla), 45 kDa, 58 kDa (not GroEL), 66kDa, or 93 kDa;
- **Or** all of the following:
 - Antibody positive or indeterminate for *B. burgdorferi* by enzyme immunoassay (EIA) or immunofluorescent (IF) assay,
 - **And** IgM western blot is positive for 2 or more of the following bands: 21-25 kDa (OspC), 39 kDa (BmpA), or 41 kDa (Fla),
 - **And** symptom onset within 30 days of laboratory testing.

Late-manifestation Lyme disease

Either of the following:

- Culture positive for *B. burgdorferi*
- **Or** IgG western blot is positive for 5 or more of the following bands: 18 kDa, 21-25 kDa (OspC), 28 kDa, 30 kDa, 39 kDa (BmpA), 41 kDa (Fla), 45 kDa, 58 kDa (not GroEL), 66kDa, or 93 kDa.

Epidemiological criteria for case classification

Exposure is defined as having been in wooded, brushy or grassy areas (i.e., potential tick habitats) in a county in which Lyme disease is endemic in the 30 days prior to symptom onset. A history of tick bite is not required. For surveillance purposes, Lyme disease is considered to be endemic in Florida.

Epidemiological criteria for classification for acute Lyme disease vary by whether exposure occurred in a state with high or low Lyme incidence. **Florida is considered a low incidence state.** Three-year average Lyme disease incidence by state can be obtained at www.cdc.gov/lyme/stats/tables.html.

Low incidence state:

States with a 3-year average incidence of <10 cases per 100,000 persons.

High incidence state:

States with a 3-year average incidence of ≥ 10 cases per 100,000 persons.

Case classification

Acute Lyme disease

Confirmed:

Either of the following:

- A person with confirmatory acute clinical criteria and exposure in a high incidence state
- **Or** a person with confirmatory acute clinical criteria, acute laboratory criteria, and exposure in a low incidence state (such as Florida).

Probable:

A person with presumptive acute clinical criteria and acute laboratory criteria.

Suspect:

A person with confirmatory acute clinical criteria in the absence of laboratory testing without known exposure.

Late-manifestation Lyme disease

Confirmed:

A person with confirmatory late-manifestation clinical criteria and late-manifestation laboratory criteria.

Probable:

A person with presumptive late-manifestation clinical criteria and late-manifestation laboratory criteria of infection.

Unknown Lyme disease

Suspect:

A person with laboratory criteria but no clinical information available.

Criteria to distinguish a new case from previous reports

If a person is experiencing symptoms from a previous Lyme infection for more than 30 days and is then re-infected through a new exposure, develops a new EM, and has a positive IgG Western blot (5 or more bands are positive), then the person should have two cases in Merlin, one for the chronic infection and one for the acute infection.

Comments

Lyme disease reports will not be considered cases if the medical provider specifically states this is not a case of Lyme disease, or the only symptom listed is "tick bite" or "insect bite."

Lyme disease can be acquired abroad in Europe and Asia. Incidences rates are available through some government agencies within these continents. If an infection is acquired abroad, please contact the case reviewer, who will determine if the exposure location is classified as high incidence or low incidence.

Lyme disease case classification charts:

www.floridahealth.gov/diseases-and-conditions/lyme-disease/documents/lyme-disease-case-classification-chart-vertical.pdf

www.floridahealth.gov/diseases-and-conditions/lyme-disease/documents/lyme-disease-case-classification-chart-horizontal.pdf