

---

## LYME DISEASE

---

### Confirmed Case

One of the following:

1. Isolation of *Borrelia burgdorferi* from tissue or body fluid by a laboratory of demonstrated competence.

**OR**

2. History of exposure in an endemic area<sup>1</sup> and either of the following:
  - A. erythema migrans<sup>2</sup> observed by a physician;
  - B. At least one clinically compatible late manifestation<sup>3</sup> and laboratory evidence of *B. burgdorferi* infection<sup>4</sup>.

**OR**

3. No history of exposure in an endemic area<sup>1</sup> and both of the following:
  - A. erythema migrans<sup>2</sup> observed by a physician;
  - AND**
  - B. laboratory evidence of *B. burgdorferi* infection<sup>4</sup>.

### Probable Case

One of the following:

1. History of exposure in an endemic area<sup>1</sup> and physician recognition of erythema migrans<sup>2</sup> as reported by the patient.

**OR**

2. No history of exposure in an endemic area<sup>1</sup> and both of the following:
  - A. At least one clinically compatible late manifestation<sup>3</sup>;
  - AND**
  - B. Laboratory evidence of *B. burgdorferi* infection<sup>4</sup>.

**Notes:**

(1) Exposure in an endemic area.

Living in, or visiting, an endemic area(a). Such exposure should have occurred no more than 30 days prior to onset of erythema migrans or no more than 1 year before the onset of late manifestations. A history of tick bite is NOT required.

a) Endemic area:

One in which the risk of transmission of Lyme disease to humans is supported by either of the following:

(i) The presence of an established vector population (*Ixodes angustus* or *I. pacificus*) known to be infected with *B. burgdorferi*. Currently in B.C. this includes:

- the Gulf Islands,
- Vancouver Island,
- the Sunshine Coast,
- the Lower Mainland,
- the Fraser Valley as far east as Hope,
- the East Kootenays (Cranbrook).

Infected ticks are probably also distributed in other parts of the province. Efforts to isolate *B. burgdorferi* from the vector population are ongoing and may result in more areas being added to this list.

(ii) The occurrence of at least 3 confirmed human cases, with adequate histories, for whom there are no histories of exposure in previously identified endemic areas. (This is a provisional definition of an endemic area in the absence of appropriate tick studies).

There is no time limit within which cases must occur or infected vectors be identified for an area to be declared endemic. The geographic limits of the endemic area will be defined by the Ministry of Health.

(2) Erythema migrans (EM)

An erythematous expanding lesion, at least 5 cm in diameter, with central clearing. The lesion occurs within 30 days of exposure. Annular erythematous lesion occurring within 48 hours of a tick bite may represent hypersensitivity reaction and do not qualify as EM.

- (3) Late manifestations  
These include any of the following when all other known causes have been ruled out:
- a) Musculoskeletal system  
Recurrent, brief attacks (lasting weeks or months) of physician-observed large joint swelling in one or a few joints or chronic progressive arthritis preceded by brief attacks. Chronic progressive arthritis NOT preceded by brief attacks, chronic symmetric polyarthritis, arthralgias, myalgias, or fibromyalgia syndromes are NOT accepted as criteria for musculoskeletal involvement.
  - b) Nervous system  
Lymphocytic meningitis, cranial neuritis, facial palsy, radiculoneuropathy, or rarely, encephalomyelitis. Headache, fatigue, paresthesias, or stiff neck are NOT accepted as criteria for neurologic involvement.
  - c) Cardiovascular system  
Acute onset atrioventricular conduction defects that resolve in days to weeks. Palpitations, bradycardia, bundle branch block or myocarditis are NOT accepted as criteria for cardiovascular involvement.
- (4) Laboratory evidence of *B. burgdorferi* infection.  
Any one of the following findings, determined in a laboratory of demonstrated competence, provides laboratory evidence of *B. burgdorferi* infection:
- a) immunospecific staining of the spirochete in tissue or body fluid;
  - OR**
  - b) significant changes in confirmed antibody response to *B. burgdorferi* in sequential serum samples;
  - OR**
  - c) serum positive by enzyme-linked immunosorbent assay (ELISA) serology according to recognized cutoff values and also positive by Western blot.
  - OR**
  - d) detection of spirochete DNA in body fluids or tissue using polymerase chain reaction with Lyme Disease specific primers.