

July 16, 2007

Laboratory Testing for Lyme Disease



Lyme disease is caused by *Borrelia burgdorferi* in N. America and by *B. burgdorferi*, *B. afzelii* and *B. garinii* in Europe and Asia. Lyme disease is not considered to be endemic to Alberta, and all confirmed cases to date have a history of travel to other endemic areas. The arthropod vectors, *Ixodes scapularis*, *I. pacificus* or *I. ricinus* ticks, are not thought to be established in Alberta, but this is under surveillance. These ticks may be seen occasionally on travelers or their pets, and are thought to be imported periodically on migrating birds.



Diagnosis of Lyme disease is not straight-forward, and requires thorough clinical review, including consideration of alternate diagnoses, travel history, season, and tick exposure, in addition to laboratory testing. Patients without a realistic likelihood of Lyme exposure should not be "screened", as occasional false-positive results will lead to inappropriate management.

If Lyme disease testing is required, please submit the following:

Submit:	Comments:
ProvLab requisition: Request "Lyme", and indicate onset of illness, clinical features and travel history.	<ul style="list-style-type: none"> Specimens received without a history will be stored. A history form will be faxed to the physician.
Serum: One serum separator (gold top) tube.	<ul style="list-style-type: none"> Screened for antibody at ProvLab by enzyme immunoassay. Often antibody-negative in early infection (e.g. erythema migrans). Consider repeat in 4 weeks if characteristic illness or high risk exposure. Positives are confirmed at the National Microbiology Lab, Winnipeg, by Western Blot. IgM-positive, IgG-negative results should be interpreted with caution due to the risk of false-positives. Send convalescent specimen to confirm IgG seroconversion.
Ticks: Removed from humans, <u>NOT</u> pets.	<ul style="list-style-type: none"> Store in pill vial. Only submit if patient becomes symptomatic. Vast majority in Alberta are <i>Dermacentor spp.</i> which do NOT carry Lyme disease. <i>Ixodes spp.</i> will be forwarded to the National Microbiology Lab for confirmation and testing for <i>Borrelia spp.</i>
Joint fluid, for Lyme PCR	<ul style="list-style-type: none"> Investigational only. Limited clinical utility as patients with Lyme arthritis are essentially always seropositive. Page the Virologist-on-call*
CSF for Lyme PCR <u>NOT</u> recommended.	<ul style="list-style-type: none"> Investigational only. CSF has very low sensitivity. Page the Virologist-on-call*

*Virologist-on-call; Calgary (403) 944-1200, Edmonton (780) 407-7121

Please contact Dr. Peter Tilley with any questions.

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