



ADVISORY

Tick-Borne Disease Added to Diseases of Public Health Significance

July 31, 2023

On July 1st, 2023, the Ministry of Health officially declared Anaplasmosis, Babesiosis, and Powassan Virus as Diseases of Public Health Significance (DoPHS). Like Lyme Disease, these new DoPHS are tick-borne diseases (TBDs) and are transmitted through the bites of infected ticks. The risk of TBDs is increasing as infected blacklegged ticks can now be [found almost anywhere in the province](#).

Anaplasmosis

Clinical symptoms of anaplasmosis may include fever, chills, severe headache, myalgia, abdominal pain, nausea, vomiting, diarrhea, and/or loss of appetite. These symptoms will usually present within 1-2 weeks after being bitten by an infected tick. Risk of severe illness is higher when treatment is delayed, when the patient is an older adult, has a weakened immune system or has an underlying medical condition. Timely treatment of Doxycycline, the most common and most effective antibiotic, is important in preventing severe illness for all patients.

Babesiosis

Most patients who are infected with babesiosis are asymptomatic. If symptoms are present, they may include fever, chills, sweats, headache, body aches, loss of appetite, nausea or fatigue. Additionally, hemolytic anemia may be caused by Babesia parasites attacking red blood cells and result in fatigue, jaundice, and dark urine. The incubation period is 1-4 weeks after the initial tick bite and 1-9 weeks following a contaminated blood transfusion. Asymptomatic cases often do not require treatment. If treatment is needed, antibiotics and/or antiparasitic drugs are used.

Powassan Virus

Although less common, Powassan virus can also be transmitted by the groundhog or squirrel tick. Similar to babesiosis, most infected individuals will not experience symptoms. When symptoms are present, they may include fever, headache, nausea, vomiting, weakness or muscle and joint pain. Severe disease may result in meningitis and/or encephalitis with symptoms that may include confusion, loss of coordination, difficulty speaking, paralysis, seizures or coma. The incubation period for Powassan virus ranges from 1-4 weeks after an infected tick bite. Treatment options for infected patients include rest, fluids, and over the counter pain medications to help relieve some symptoms.

Lyme Disease

Lyme disease occurs in three stages: early localized, early disseminated, and late. Symptoms will often overlap between each stage and will vary from person to person. In some individuals, Lyme disease will present at a later stage without previous history of any signs and symptoms. Typically, symptoms will appear between 3 and 30 days after an infected tick bite. The most commonly reported sign of Lyme disease is erythema migrans, a growing rash that begins at the site of the tick bite. Other signs and symptoms include fever, chills, fatigue, headache, swollen lymph nodes and

muscle/joint aches. If left untreated, the infection can make patients feel tired and weak and may even spread to the joints, heart and nervous system.

Doxycycline should be used for post-exposure prophylaxis in adults and children of all ages if it is not contraindicated - it is the recommended if the tick has been attached for more than 24 hours and can be administered up to 72 hours after tick removal. [Public Health Ontario guidance](#) recommends Doxycycline as first line for both adults (200mg PO x 1) and children (4mg/kg PO x 1). There is [no evidence](#) that short-term courses of Doxycycline lead to dental staining, enamel hypoplasia or tooth discolouration among children. It is an important preventative measure after tick attachment and Health Care Providers are encouraged to prescribe it when needed, particularly given increasing Lyme Disease prevalence.

Testing for TBDs

A test collected early after the onset of symptoms (acute) and 2-3 weeks later (convalescent) may be required for laboratory diagnosis. When submitting a [general test requisition](#) for diagnostic testing, be sure to include symptoms and date of onset, exposure to tick bite and travel history.

The following resources can assist with testing information:

- Anaplasmosis
 - [Anaplasma \(Anaplasma phagocytophilum\) – Serology | Public Health Ontario](#)
 - [LAB-SB-008, Blood Collection using Serum Separator Tubes](#)
- Babesiosis
 - [Babesia – Serology | Public Health Ontario](#)
 - [Babesia – Microscopy and PCR | Public Health Ontario](#)
- Powassan Virus
 - [Powassan Virus | Public Health Ontario](#)
 - [Arbovirus \(Non-Zika\) Testing Intake Form](#) completing this form is a mandatory requirement for Powassan virus testing as of October 3, 2022
 - Molecular testing is not a routine test and must be preapproved by the PHO laboratory microbiologist.
- Lyme Disease
 - [Lyme Disease – Serology | Public Health Ontario](#)
 - [Lyme Disease - PCR | Public Health Ontario](#)

Timely reporting of any confirmed or suspected cases is important for preventative action to support the health of the community. In accordance with Ontario Regulation 569 under the Health Protection and Promotion Act, all probable and confirmed cases must be reported to Peterborough Public Health. You can issue a report by calling 705-743-1000, ext. 131 during service hours or by calling 705-760-8127 after hours to speak to on-call staff.