

PUBLIC HEALTH ALERT

EMERGING TICK-BORNE DISEASES IN CHILDREN BEYOND LYME DISEASE

Tick-borne diseases are an increasing public health concern in many parts of Canada. As climate and environmental conditions change, tick populations are increasing in abundance and expanding into regions where they were previously uncommon. *Ixodes scapularis* (the black-legged or deer tick), the primary vector for Lyme disease, is now established in many parts of Nova Scotia, New Brunswick, Quebec, Ontario, and Manitoba while *Ixodes pacificus* is established in British Columbia. At the same time, other tick species are being recognized as potential vectors of human disease. For example, *Rickettsia rickettsii*, the bacterium that causes Rocky Mountain spotted fever, was recently identified in the American dog tick (*Dermacentor variabilis*) in Ontario for the first time in more than 50 years.

As a result, an increasing number of Canadians are being exposed to ticks that may carry different pathogens. While Lyme disease remains the most common tick-borne disease in Canada, other tick-borne diseases are increasingly being recognized including anaplasmosis, babesiosis, Powassan virus disease, tick-borne relapsing fever, Rocky Mountain spotted fever, and tick paralysis. Children may be particularly vulnerable because tick attachment can go unnoticed and early symptoms are often non-specific, leading to delayed diagnosis and treatment.

KEY POINTS TO HEALTHCARE PROVIDERS

- **Anaplasmosis** may present with fever, headache, myalgias, gastrointestinal symptoms, and laboratory abnormalities, often without a rash.
- Consider **babesiosis** in children with fever and hemolytic anemia, especially in areas where black-legged ticks are established.
- Consider **Powassan virus** disease when evaluating a patient with meningitis and encephalitis during tick season and where black-legged ticks are established.
- **Tick-borne relapsing fever** typically presents with recurrent febrile episodes separated by periods of clinical improvement and should be considered in children with unexplained relapsing fever during tick season.
- **Rocky Mountain spotted fever**, although rare in Canada, can be life-threatening. Symptoms include fever, headache, myalgia, and rash. Early treatment with doxycycline at any age should not be delayed while awaiting laboratory confirmation when clinical suspicion is high.
- **Tick paralysis** should be considered in children presenting with acute ascending weakness or paralysis during tick season. Prompt identification and removal of the attached tick is curative.
- Counsel families on tick-bite prevention measures, including use of insect repellents, wearing protective clothing, performing tick checks after outdoor activities, and prompt tick removal.



SURVEILLANCE AND REPORTING

In January 2024, anaplasmosis, babesiosis, and Powassan virus disease became nationally notifiable diseases in Canada. Increased recognition, testing, and reporting are important to improve understanding of the epidemiology of these emerging infections in children.

In addition, the Canadian Paediatric Surveillance Program is conducting national surveillance of tick-borne diseases (excluding Lyme disease) in children from May 2026 to April 2029.

Clinicians are encouraged to look out for suspected and confirmed cases of the following tick-borne diseases in children and participate in reporting efforts:

- Anaplasmosis
- Babesiosis
- Powassan virus disease
- Hard-tick relapsing fever (*Borrelia miyamotoi*)
- Soft-tick relapsing fever (*Borrelia hermsii*)
- Rocky Mountain spotted fever
- Tick paralysis



For more information:

-  <https://cpsp.cps.ca/surveillance/study-etude/tick-borne-diseases-excluding-lyme-disease>
-  <https://www.canada.ca/en/public-health/services/diseases/ticks-tick-borne-diseases.html>
-  <https://health-infobase.canada.ca/zoonoses/ticks/about.html>