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## Maine Health Alert Network (HAN) System

### PUBLIC HEALTH ADVISORY

**To:** Health Care Providers  
**From:** Dr. Isaac Benowitz, State Epidemiologist  
**Subject:** **2023 Lyme and Other Tickborne Disease Information**  
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## 2023 Lyme and Other Tickborne Disease Information

### Background

Ticks are already active this year. As the weather continues to get warmer into the spring and summer months, Maine expects the number of Lyme and other tickborne disease case reports to increase. The purpose of this advisory is to provide healthcare providers with useful information on how to assess and care for patients with possible tickborne disease infections. **May is Lyme Disease Awareness Month** in Maine and Maine CDC encourages all Mainers to stay “**Tick Free ME.**”

The burden of human tickborne illnesses in Maine continues to increase every year. While Lyme disease is still the most common tickborne disease reported in Maine, the rate of many other tickborne illnesses also continues to increase. In 2022, Maine CDC preliminarily reported 2,636 Lyme disease cases (a new annual record), 824 anaplasmosis cases, 192 babesiosis cases, 12 Hard Tick Relapsing Fever (HTRF, formerly *Borrelia miyamotoi* disease) cases, 7 ehrlichiosis cases, 4 Powassan cases, and one case each of ehrlichiosis/anaplasmosis (undetermined), Spotted Fever Rickettsiosis (SFR), and tularemia. In recent years, Maine CDC also reported cases of Alpha-Gal Syndrome (AGS, also called alpha-gal allergy or red meat allergy) and Southern Tick-Associated Rash Illness (STARI), which are not notifiable conditions, in Maine residents.

The deer tick (*Ixodes scapularis*) is the primary vector of most tickborne diseases reported in Maine. Deer ticks can carry the pathogens that cause anaplasmosis, babesiosis, HTRF, Lyme disease, and Powassan. Maine CDC considers these pathogens endemic in Maine. Individuals bitten by a deer tick can acquire more than one infection simultaneously. Most infections occur during peak deer tick activity in the spring and summer months, but **ticks can be active any time the temperature is above freezing** including fall and winter months. Given the ability for ticks to be active during mild winter weather, health care providers should **consider testing for tickborne diseases year-round**. The milder temperatures so far this year allowed deer ticks to remain active through much of the winter. Maine

CDC already received several hundred reports of tickborne illnesses in 2023. Current year (2023) case count data for anaplasmosis, babesiosis, and Lyme disease can be found on the [Maine Tracking Network Near Real-Time dashboard](#).

All other tickborne illnesses like AGS, Bourbon Virus, Ehrlichiosis, Heartland Virus, SFR, and STARI are not currently considered endemic to Maine, but people can acquire these illnesses while traveling to another state. Maine CDC conducts surveillance for AGS in Maine. Healthcare providers are encouraged to report cases of Alpha-Gal Syndrome to Maine CDC.

Alpha-Gal Syndrome is a serious and potentially life-threatening allergic reaction. People can become sensitized to alpha-gal through lone star tick (*Amblyomma americanum*) bites. Some people who become sensitized have an allergic reaction after exposure to red meat, dairy products, or other products containing alpha-gal. Symptoms occur 2-10 hours after exposure. While lone star ticks are not considered endemic to Maine, they are endemic in parts of Massachusetts. The UMaine Tick Lab reports a small number of lone star tick submissions from Maine yearly.

## Symptoms

The most common early symptom of Lyme disease is an expanding red rash (*erythema migrans*) that occurs 3-30 days after a bite. Fever, headache, joint pain, or muscle pain may also occur. Some of these non-specific symptoms are similar to the symptoms of COVID-19, influenza, and other infections. Untreated infections can lead to rheumatologic, cardiac, and neurologic manifestations like Lyme carditis and meningoencephalitis. Lyme disease is treatable, and most patients recover after receiving appropriate therapy.

Symptoms of other tickborne diseases of concern in Maine include:

- Anaplasmosis: fever, headache, malaise and body aches.
- Babesiosis: extreme fatigue, aches, fever, chills, sweating, dark urine, and possibly anemia.
- HTRF: fever, chills, headache, body and joint pain, and fatigue.
- Powassan virus disease: fever, headache, vomiting, weakness, confusion, loss of coordination, speech difficulties, seizures, and encephalitis and meningitis.
- AGS: hives, anaphylaxis, gastrointestinal symptoms, and hypotension.

## What to do after a tick bite

- Remove the tick properly using tweezers or a tick spoon.
- Clean the area around the bite.
- Instruct the patient to watch for signs and symptoms for 30 days.
- Identify the tick and the [engorgement level](#) (the amount of time the tick was attached).

## Prophylaxis

- Prophylaxis after a tick bite for Lyme disease is **not** routinely recommended, but can be considered under specific circumstances including:
  - Tick is identified as an engorged deer tick that was attached for at least 24 hours.
  - Exposure occurred in an area where there is a high rate of infected ticks.
- Prophylaxis can be started within 72 hours of tick removal. There are no data showing if prophylaxis is effective in preventing other tickborne bacterial illnesses like anaplasmosis or HTRF. A single dose of doxycycline will not have an effect on babesiosis or Powassan virus disease. Therefore, **even if prophylaxis is used, Maine CDC recommends monitoring for symptoms of these diseases for 30 days.**

## Testing

Preferred testing for Lyme disease is a two-tier test (TTT). The standard TTT is an EIA or IFA followed by a Western Blot for both IgG and IgM. The modified TTT is an EIA or IFA followed by another EIA. IgM is only considered reliable in the first month after exposure.

Preferred testing for anaplasmosis, babesiosis, ehrlichiosis, HTRF, Powassan, and SFR is by PCR. Many reference and commercial laboratories offer testing for these diseases. Testing for Powassan can be performed at Maine's Health and Environmental Testing Laboratory (HETL). If providers suspect Powassan infection based on clinical evidence, they should submit serum samples and CSF for arboviral testing. A HETL requisition form and an arboviral submission form are required for arboviral testing. Diagnostics for AGS include testing for alpha-gal sIgE antibodies, available at several large commercial laboratories and some academic institutions.

## Reporting

Anaplasmosis, babesiosis, ehrlichiosis, HTRF, Lyme disease, Powassan, SFR (including Rocky Mountain spotted fever), and tularemia are all reportable in Maine ([State of Maine Control of Notifiable Diseases and Conditions Rule](#)). AGS is not currently a reportable condition in the state of Maine, however healthcare providers are encouraged to report cases of alpha-gal syndrome to Maine CDC.

*Effective January 2, 2022*, the Council of State and Territorial Epidemiologists (CSTE) modified the Lyme disease surveillance case definition. This **DOES NOT** reflect a change in Lyme disease diagnosis or treatment recommendations. Under the new surveillance case definition, Maine CDC now only reports Lyme disease cases that meet laboratory evidence and no clinical information is required. As a result, Maine CDC no longer collects reports of erythema migrans rashes or clinical information from healthcare providers.

## Tick identification and tick testing

- The University of Maine Tick Lab offers:
  - Tick identification for free.
  - Tick testing for \$20 to Maine residents with a three-day turnaround time.
- The lab tests deer ticks for *A. phagocytophilum*, *B. burgdorferi*, *B. miyamotoi*, *B. microti*, and Powassan virus.
- The lab tests non-Ixodes ticks for *Ehrlichia spp.*, *F. tularemia*, *R. rickettsia*, and Heartland virus.
- Clinical decisions **should not** be made based off the results of this testing service.
- While testing ticks for clinical purposes is not recommended, data from tick testing is very helpful for surveillance purposes and determining tick infection rates in the state.

## Additional information

- Maine CDC tickborne diseases website: [www.maine.gov/dhhs/vectorborne](http://www.maine.gov/dhhs/vectorborne)
- Maine Tracking Network data dashboard: <https://data.mainepublichealth.gov/tracking>
- HETL forms: [www.maine.gov/dhhs/microforms](http://www.maine.gov/dhhs/microforms)
- Tickborne reference manual for healthcare providers: [www.cdc.gov/ticks/tickbornediseases](http://www.cdc.gov/ticks/tickbornediseases)
- IDSA treatment guidelines: [www.idsociety.org/practice-guideline/alphabetical-guidelines](http://www.idsociety.org/practice-guideline/alphabetical-guidelines)
- University of Maine Tick Lab: [www.ticks.umaine.edu](http://www.ticks.umaine.edu)
- Maine CDC disease reporting & consultation line: 1-800-821-5821 (**available 24/7**)
  - Fax: 1-800-293-7534
  - Email: [disease.reporting@maine.gov](mailto:disease.reporting@maine.gov)