NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE
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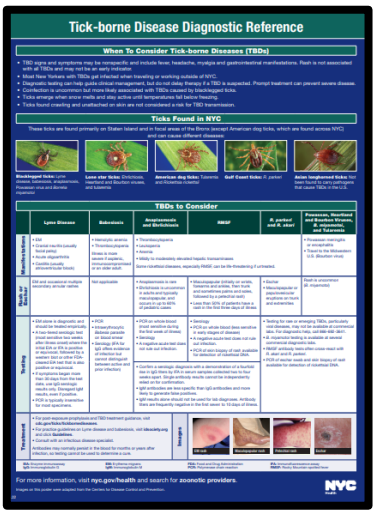
Commissioner

2026 Health Advisory #14: Tick-borne Diseases in New York City

Please distribute to all emergency medicine, infectious disease, internal medicine, family medicine, and pediatric medicine staff in your facility.



- New York City (NYC) healthcare providers should remain vigilant for tick-borne diseases (TBDs) among New Yorkers during summer months.
    - Lyme disease, babesiosis, and anaplasmosis are the most common TBDs.
    - Laboratory-based reporting suggests a growing number of New Yorkers may suffer from alpha-gal syndrome.
    - New Yorkers are usually infected while outside of NYC, although locally acquired cases of Lyme disease, babesiosis, anaplasmosis, and ehrlichiosis have been reported from Staten Island and, rarely, the Bronx.
- This Health Advisory summarizes TBDs in NYC as follows: 1. Epidemiology; 2. Clinical Presentation; 3. Diagnostic Testing and Treatment; 4. Tick Surveillance and Testing; and 5. Reporting Cases
- For a quick summary of TBD clinical manifestations, testing, and treatment, see TBD Diagnostic Reference Flyer for Providers

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June 2, 2026

With the warming weather, New York City (NYC) providers should remain vigilant for tick-borne diseases (TBDs) as people spend more time outside in tick habitats. This advisory summarizes NYC TBD epidemiology, clinical presentation, diagnostic testing and treatment, tick surveillance, and case reporting.

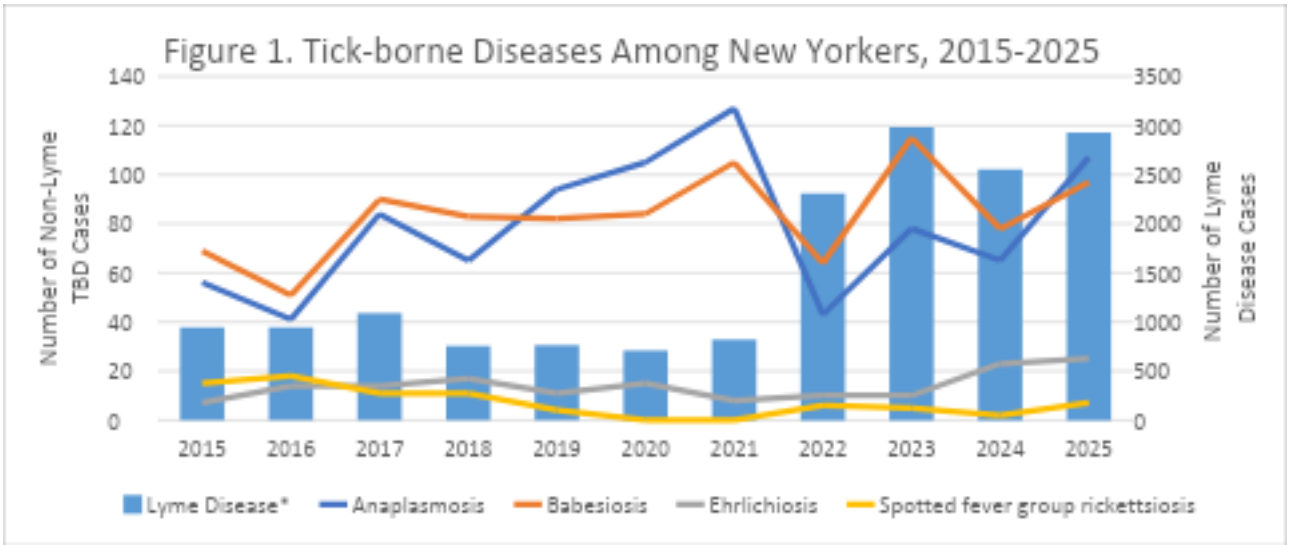
Epidemiology

TBD incidence by borough: Manhattan and Brooklyn have the highest number of TBD reports in NYC, with most people reporting a history of travel outside NYC during the exposure period. Local transmission of TBDs is reported in Staten Island and, rarely, in the Bronx.

TBD case counts: Cases of Lyme disease, anaplasmosis, and babesiosis have been trending upwards in NYC, while cases of ehrlichiosis and spotted fever group rickettsiosis have remained steady (see Figure 1; more data available on EpiQuery). In 2025, preliminary data show:

- **Lyme disease:** 2,928 cases
- **Babesiosis:** 98 cases

- **Anaplasmosis:** 107 cases
- **Ehrlichiosis:** 25 cases
- **Spotted fever group rickettsiosis:** 7 cases
- **Rickettsialpox**: 1 case



*In 2022, the Lyme disease surveillance case definition expanded to include cases based on laboratory evidence alone, without need for additional clinical information, in high-incidence jurisdictions. Individuals with multiple positive test results are counted as distinct cases only if their positive test results occur more than 365 days apart.

Incidence of rare and emerging TBDs and conditions in NYC:

- **Powassan virus disease** has been reported in two NYC residents, both of whom were infected outside of NYC (the Hudson Valley in 2018 and New Jersey in 2025).
- ***Borrelia miyamotoi* disease** is not reportable, though the number of human infections in NYC is believed to be low as it has only been detected in a small number of blacklegged ticks from Staten Island and the Bronx.
- ***Rickettsia parkeri* rickettsiosis** has not been reported among NYC residents.
- **Heartland and Bourbon viruses** have been detected in lone star ticks collected in parts of New York State but have not been detected in ticks in NYC or among NYC residents.
- **Alpha-gal syndrome (AGS)** is associated primarily with the bite of a lone star tick. AGS can be a serious and potentially life-threatening allergic reaction to the alpha-gal molecule found in meat and other mammalian products, with symptoms ranging from mild to severe. Delayed symptoms are a hallmark of AGS and appear about 2-6 hours after consumption of foods or exposure to products containing alpha-gal. Laboratory-based reporting began in 2024 in NYC; over 140 reports were received in 2025.

Clinical Presentation

TBD symptoms may be nonspecific and include fever, headache, myalgia, and gastrointestinal manifestations. Some people with TBDs also present with a rash. An erythema migrans rash occurs in 70-80% of Lyme disease cases; find images here.

More detailed information about signs and symptoms associated with specific TBDs can be found in the NYC Health Department's TBD Diagnostic Reference Flyer for Providers.

Recent travel to tick endemic areas (such as upstate New York, Long Island, other parts of the

northeast, the mid-Atlantic region, and the upper Midwest) or residency in Staten Island should prompt consideration of TBDs in people with a compatible clinical presentation. A known history of a tick bite is not a prerequisite for consideration, as only a small proportion of people with TBDs recall being bitten by a tick.

Diagnostic Testing and Treatment

Testing: Diagnostic testing guidelines for specific TBDs are described in the TBD Diagnostic Reference Flyer for Providers. Preferred testing methodologies include:

- **Lyme disease**: Modified two-tier test (MTTT) is now the preferred method instead of standard two-tier testing.
- **Human anaplasmosis** and **babesiosis**: Obtain PCR (and blood smear for babesiosis) on whole blood within the first week of illness.
- Testing for **rare or emerging TBDs**, such as Heartland, Bourbon and Powassan viruses, and *R. parkeri* rickettsiosis, may not be widely available. For diagnostic assistance, call the NYC Health Department Provider Access Line at 866-692-3641.
- **AGS**: Diagnosis requires a combination of patient history, physical examination, and laboratory testing. The primary diagnostic test for AGS is a blood test that identifies alpha-gal-specific immunoglobulin-E (IgE) antibodies.

Treatment: Diagnostic testing can help guide clinical management, but in order to prevent severe disease, do not delay treatment if a TBD is suspected.

- Doxycycline is appropriate for empiric treatment of most TBDs, except for babesiosis and alpha-gal syndrome.
- The Infectious Disease Society of America provides detailed treatment guidelines for Lyme disease and babesiosis.
- Allergic reactions caused by AGS can be minimized by avoiding exposure to the alpha-gal molecule.
- Consult with an infectious disease specialist for additional treatment guidance.

Lyme Disease Prophylaxis: A single prophylactic dose of doxycycline (200 mg for adults or 4.4 mg/kg for children of any age weighing less than 45 kg) given **within 72 hours of removing an engorged blacklegged tick** (typically attached for at least 36 hours) may be used to reduce the risk of Lyme disease for people bitten **while in a highly endemic area** (including Staten Island and the surrounding northeastern states). Prophylaxis has not been shown as effective in preventing other tick-borne diseases.

Testing Ticks: Testing ticks for pathogens is generally not recommended. Ticks with a positive test result may not have been attached long enough to transmit the pathogens, and even with a negative test result the individual might have unknowingly been bitten by a different tick.

Tick Surveillance and Testing

TBD seasonality: Ticks are most active in spring, summer, and fall. Warmer average temperatures driven by climate change have led to longer summers, earlier springs, and shorter and milder winters, extending the geography and seasonality of ticks. However, dry conditions can negatively impact tick survival leading to fluctuations in annual tick-borne disease burden.

Tick surveillance and testing by the NYC Health Department:

Tick Species	Associated Diseases & Conditions	Where Found in NYC	Tick-borne Pathogen Testing Results**
Blacklegged Tick	Lyme disease, anaplasmosis, babesiosis, and Powassan virus	Staten Island and focal areas of the Bronx (Pelham Bay Park and Hunter Island)*	Most commonly detected pathogen is *Borrelia burgdorferi* (30-50%), followed by *Babesia microti* (5-10%), *Anaplasma phagocytophilum* (1-5%), *Borrelia miyamoto*i (1-7%), and Powassan virus (1-7%)
Lone Star Tick	Ehrlichiosis and alpha-gal syndrome	Staten Island and rarely Queens	*Ehrlichia ewingii* (1-3%) and *E. chaffeensis* (1%)
American Dog Tick	Rocky Mountain spotted fever	Historically all five boroughs, but rarely detected in recent years except for parts of Brooklyn	*Rickettsia rickettsii* has not been detected in any NYC ticks
Gulf Coast Tick	*Rickettsia parkeri rickettsiosis*	Staten Island	*Rickettsia parkeri* (50%)
Asian Longhorned Tick	No known disease risk to humans in the US to date	All five boroughs	No pathogens detected to date

*Recent surveillance found a very small number of adult blacklegged ticks in focal areas of northern Manhattan, eastern Queens, and Brooklyn, and may be a result of migrating birds. Additional tick surveillance is being done in 2026 to assess whether blacklegged ticks are becoming established in new areas.
**Percentages shown reflect positivity among tested ticks from 2022-2025.

Reporting Cases

Cases of TBDs are required to be reported to the NYC Health Department. Laboratories automatically report all positive results for Lyme disease, babesiosis, spotted fever group rickettsioses, ehrlichiosis, anaplasmosis, and alpha-gal syndrome. **Healthcare providers** should also report the following:

- Suspected cases of rickettsialpox based on clinical suspicion.
- Cases of transfusion-associated TBDs, which must be reported to the NYS Department of Health Blood Resources Program by completing an Incident Form and submitting it via email to brp@health.ny.gov.

References

- Association of Public Health Laboratories (APHL): Lyme Disease Serologic Testing
- American Academy of Family Physicians: Tickborne Diseases: Diagnosis and Management | AAFP
- New York State Department of Health:
  - Tick Removal Tutorial
  - Alpha-gal Syndrome (AGS) for Providers
- Centers for Disease Control and Prevention (CDC):
  - TBD Continuing Education (free)
  - Lyme Disease Rashes
- Infectious Disease Society of America (IDSA):

    - Lyme Disease Practice Guidelines
    - Babesiosis Practice Guidelines
- NYC Department of Health and Mental Hygiene (NYC Health Department):
    - TBD Diagnostic Reference Flyer for Providers
    - Ticks (information, materials and resources for the general public)
    - TBD Disease Pages: Lyme Disease, Anaplasmosis, Babesiosis, Ehrlichiosis, Alpha-gal syndrome, Rocky Mountain spotted fever, Rickettsia parkeri rickettsiosis
    - Reporting Diseases to the Health Department