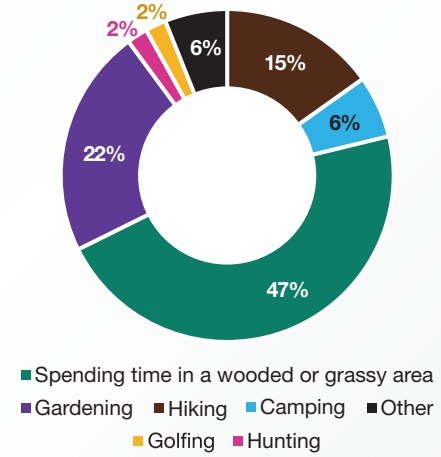
NYC Health

Tick and Tick-Borne Disease Surveillance Summary, NYC, 2023

- Most New Yorkers diagnosed with a tick-borne disease (TBD) are infected while outside NYC. However, there are ticks that carry pathogens that cause TBDs in NYC, primarily on Staten Island and in the North Bronx.
- In 2023, almost half of New Yorkers with a TBD spent time in a wooded or grassy area (Figure 1). Gardening, hiking, and camping were also common activities.
- Most people are bitten by ticks during the spring, summer, and fall, but ticks can be active whenever the temperature is above freezing.
- TBDs can be very serious and require medical care. Common symptoms of TBDs include headache, fever, tiredness, swollen glands, and muscle and joint pain. People with Lyme disease may also have an erythema migrans (bull's-eye) rash.

Figure 1. Reported Outdoor Activities by New Yorkers With a Tick-Borne Disease, 2023



Tick Surveillance

Ticks are small.
Here are ticks shown in actual size.

Ticks are very small and can be hard to see; some are the size of a poppy seed or sesame seed. Ticks avoid heat and direct sunlight and prefer cooler, damp areas where trees, brush, leaf litter, and tall grasses provide cover and shade from the sun. The NYC Health Department monitors tick populations in select NYC parks, primarily on Staten Island and in the North Bronx, to identify the number and species of ticks. Ticks are tested at the NYC Public Health Laboratory for pathogens that cause TBDs.

Blacklegged ticks are found on Staten Island and in the North Bronx. The bacteria that cause Lyme disease and anaplasmosis were detected in ticks on Staten Island and in the Bronx, the parasite that causes babesiosis was detected in ticks on Staten Island, and the virus that causes Powassan virus disease was detected in a small number of ticks in the Bronx.

Lone star ticks are found on Staten Island and in the North Bronx. The bacteria that cause ehrlichiosis were detected in a small number of ticks. Bourbon and Heartland viruses have not been detected.

American dog ticks are found in all five boroughs. Historically, a small number have been found to carry the bacteria that cause Rocky Mountain spotted fever.

Gulf Coast ticks are found on Staten Island. Testing detected the bacteria that cause *Rickettsia parkeri* rickettsiosis.

Asian longhorned ticks are widespread on Staten Island and in the North Bronx but have not been found to spread diseases to humans in the U.S.

Tick-Borne Disease Surveillance

- Lyme disease was reported among 3,317 New Yorkers in 2023 (Figure 2). The surge of cases since 2022 is due to a change in the criteria used to define Lyme disease cases, leading to more people being counted.
- TBDs other than Lyme disease were reported among 208 New Yorkers (Figure 2). The most common were babesiosis (115), anaplasmosis (78), and ehrlichiosis (10).
- Most New Yorkers with a TBD were infected while spending time outside NYC, including on Long Island and in upstate New York, Connecticut, New Jersey, Pennsylvania, and Massachusetts.
- Most New Yorkers with a TBD were from Brooklyn and Manhattan; however, Queens had the second highest count of people with babesiosis (Figure 3).
- Most New Yorkers with a TBD were male (53.2% for Lyme disease and 62.5% for other TBDs). Among New Yorkers with a TBD and a known race or ethnicity, non-Hispanic white individuals had the highest incidence rate (29.8 cases per 100,000 people) (Figure 4).
- New Yorkers with a TBD ranged from ages 1 to 95, with an average age of 42 years for Lyme disease and 61 years for other TBDs.

Figure 2. Tick-Borne Diseases in NYC, 2013-2023

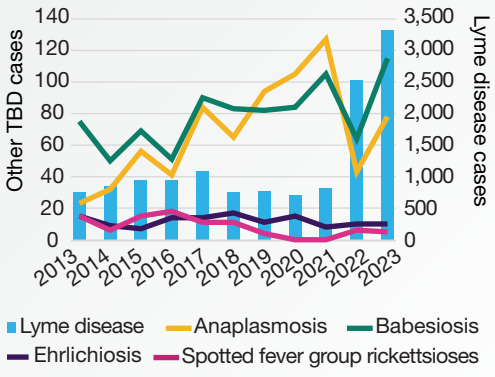


Figure 3. Tick-Borne Disease by Borough, 2023

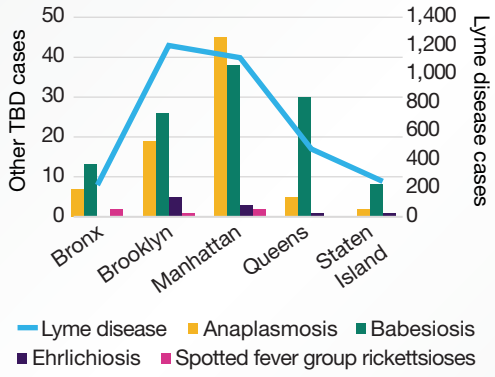
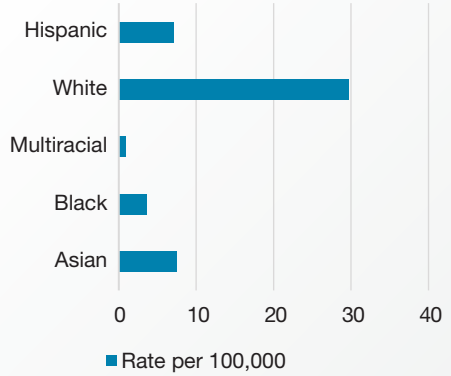


Figure 4. Rate of Tick-Borne Diseases in NYC by Race and Ethnicity, 2023



Local Transmission of Tick-Borne Diseases

- Local transmission of TBDs is assessed by interviewing people and determining where and when they were bitten by a tick. For Lyme disease, interviews are limited to people reported by their health care provider as having an erythema migrans (bull's-eye) rash.
- In Staten Island, two people with Lyme disease and erythema migrans (bull's-eye) rashes, five with babesiosis, and one with ehrlichiosis had no history of travel outside NYC.
- In the Bronx, one person with anaplasmosis and two with babesiosis had no history of travel outside NYC.
- Two New Yorkers with spotted fever group rickettsiosis, one from Manhattan and one from Brooklyn, had no history of travel outside NYC.

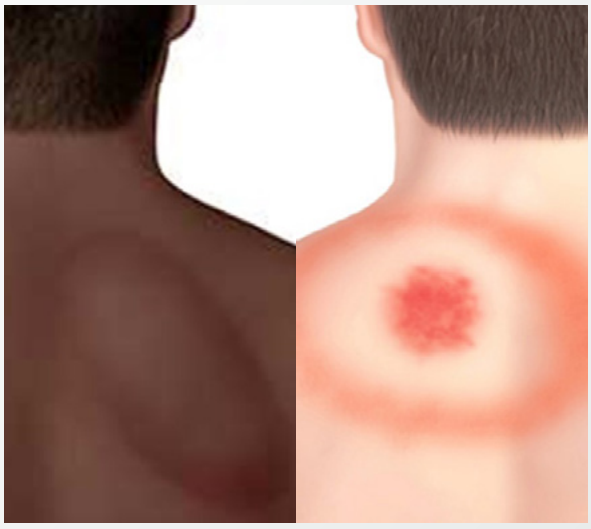


Illustration of erythema migrans rashes

For more information on ticks, including tick bite prevention, visit **nyc.gov/health/ticks**.
For information on Lyme disease, visit **nyc.gov/health** and search for **Lyme disease**.

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