Lyme Disease

Lyme disease is a Class C Disease and must be reported to the state within five business days.

Lyme disease is the most common tick-borne illness in the United States. More than 30,000 cases are reported annually in recent years. CDC now estimates that more than 476,000 Americans are diagnosed and treated for Lyme disease every year. The disease is caused by a bacterial spirochete, *Borrelia burgdorferi*. In the northern and central U.S., the primary vector is *Ixodes scapularis*, the deer tick, while on the Pacific coast, the most common vector is *Ixodes pacificus*, the western black-legged tick. Other species of ixodid ticks have also been implicated in transmission.

Symptoms include fever, headache, fatigue, and an expanding skin rash called erythema migrans. Infections that are not treated can spread to joints, the heart, and the nervous system. However, most cases can be successfully treated with a few weeks of antibiotics.

Lyme disease is geographically concentrated, with the majority of cases reported in the northeastern and north-central regions of the United States. The risk of infection in endemic areas is dramatically greater than the risk in non-endemic areas. In 2021, state 3-year average incidence rates varied widely from 0.01 cases or less per 100,000 population in 8 states to 110 cases per 100,000 population in Maine. The consistently low number of cases reported each year in Louisiana suggests that it is not an area of high transmission.

People who spend time in wooded areas, overgrown brush, or residential areas near these environments are at the highest risk for Lyme disease in endemic regions. While Louisiana is not considered a high-risk area, it's still important to avoid tick-infested areas and use personal protective measures to prevent Lyme disease and other tick-borne illnesses. Most infections occur when a tick remains attached for more than 24 hours, so performing regular skin checks and promptly removing any attached ticks can also help reduce the risk of infection.

The case definition of Lyme disease is based on either the isolation of Borrelia burgdorferi (a practice rarely performed in Louisiana) or a combination of clinical symptoms and serologic testing. Serologic testing is widely available but must be interpreted with caution. An early IgM response typically develops and peaks between three to six weeks after exposure. In rare cases (1–2%), IgM antibodies may persist for two to three years after infection. An IgG response begins after several weeks and can remain detectable for years, even following successful treatment.

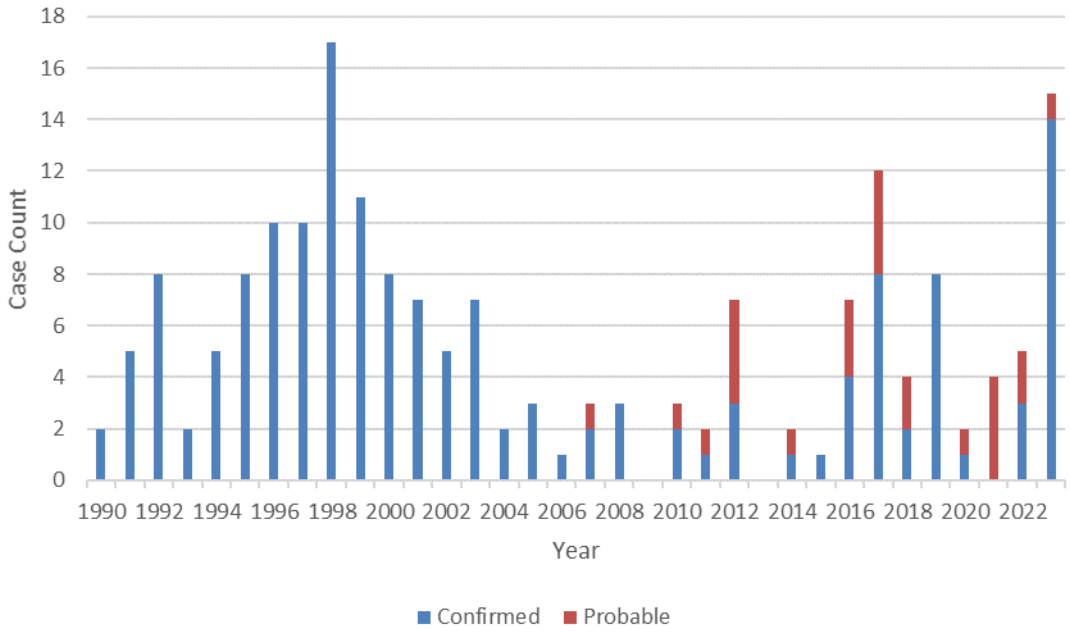
The preferred diagnostic approach is a two-step process: a sensitive enzyme immunoassay (EIA) or immunofluorescence assay (IFA), followed by confirmation with a Western blot. Using EIA, IFA, or ImmunoBlot alone—especially IgM—can lead to false positives. Combining both tests helps improve accuracy and reduce the likelihood of misdiagnosis.

Cases and Trends

During the period of 1990 to 2023, the number of cases per year reported in Louisiana have varied from 0 to a high of 17 cases in 1998 (Figure 1). These numbers are extremely low in comparison to areas of the United States with high transmission.

Reported cases are classified according to CDC's surveillance case definition, which requires both clinical compatibility and laboratory confirmation. Confirmed cases must have specific clinical symptoms, such as the characteristic EM rash or latent complications, along with lab evidence like a two-tier positive serologic test or detection of the bacteria itself. Probable cases may meet only partial criteria.

Figure 1: Lyme disease cases - Louisiana, 1990-2023



Infection Location

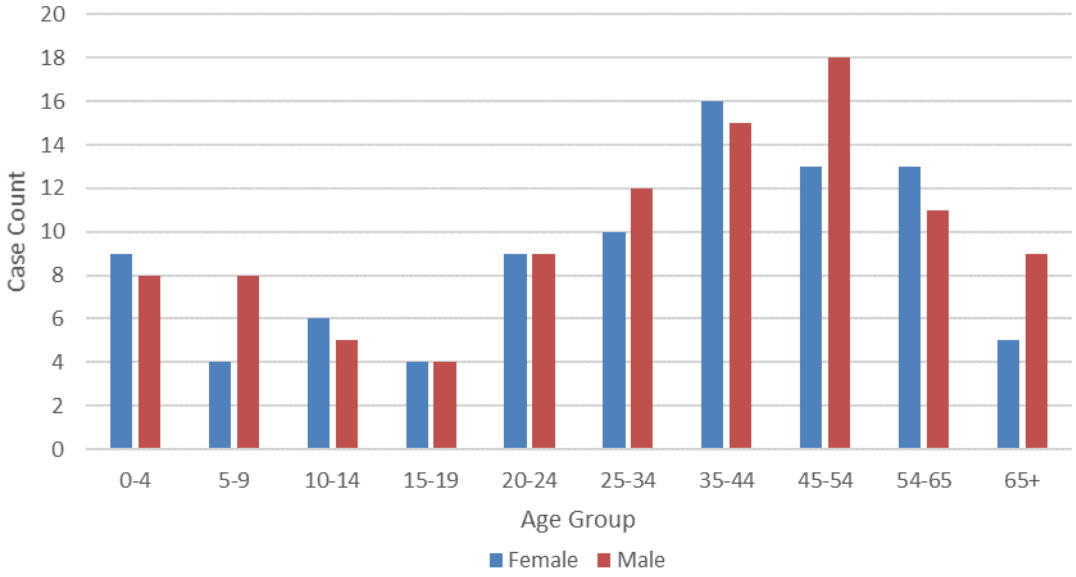
It is important to note that a majority of cases reported in Louisiana were individuals who had travelled out of state prior to developing symptoms, and they likely became infected outside of Louisiana. These travel-associated cases are still counted when their home residence is listed as Louisiana. Even though it is rare that cases report no travel out of the state, it is still important to keep track of how many Louisiana residents acquire the disease. This helps understand the burden of the disease within the state and helps encourage healthcare providers to consider Lyme disease as a possible diagnosis and to ask about recent travel when seeing patients.

Many individuals diagnosed with Lyme disease are unable to be contacted for interview to determine infection location. Out of confirmed and probable cases between 2011 and 2023, only 10% reported no recent travel history, indicating they may have acquired Lyme disease locally.

Age, Sex and Race Distribution

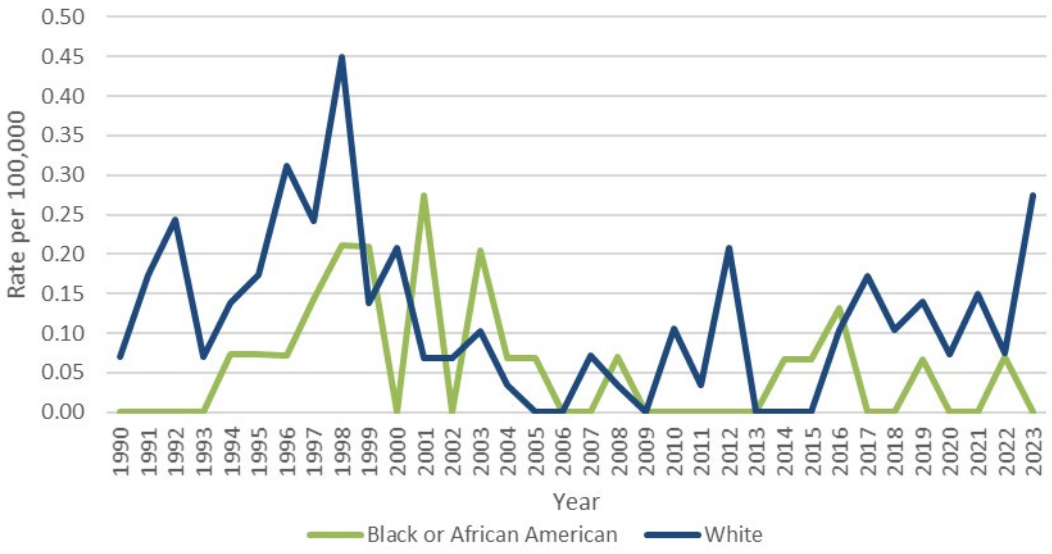
In Louisiana from 1990 to 2023, 47% of the cases were reported in females and 53% were reported in males (Figure 2). For both males and females, more cases occurred among people ages 25-years to 64-years old.

Figure 2: Lyme disease cases by gender and age - Louisiana, 1990-2023



Race data is commonly missing from Lyme disease reports. Among cases where race was reported, from 1990 to 2023 in Louisiana, the rate of cases per 100,000 has been higher in White individuals most years (Figure 3).

Figure 3: Lyme disease cases by race and age - Louisiana, 1990-2023



Seasonality

The seasonal distribution shows a peak in cases occurring in June; then case numbers slowly decrease into the winter months (Figure 4).

Figure 4: Lyme disease number of cases by month - Louisiana, 1990-2023