

KIDS HEALTH ZONE

WHAT ARE TICKS AND WHAT KINDS OF DISEASES CAN THEY TRANSMIT?

What do we know about Lyme Disease?

Lyme disease is a tick-borne disease caused by the bacteria *Borrelia burgdorferi* that affects adults and children. In the US, the blacklegged tick or deer tick is the main tick that causes Lyme disease. Deer ticks have recently been found in eastern Nebraska. You can prevent Lyme disease by wearing long clothing outside, avoiding tall grasses and carefully checking for ticks.

Borrelia are spiral-shaped bacteria that can cause serious diseases in humans. The bacteria cause an inflammatory response in infected humans, resulting in tissue damage. Left untreated, Lyme disease can cause a wide range of symptoms, commonly involving skin, joints (particularly the knee), heart, and/or central nervous system. Early treatment is key. If you think you or your child may have been bitten by a tick, get evaluated as soon as possible.

WHAT DOES THE TICK LOOKS LIKE!	NAME OF THE TICK	WHERE FOUND	TRANSMITS
	BLACKLEGGED TICK (<i>Ixodes scapularis</i>)	Widely distributed across the northeastern and upper Midwest, mid-Atlantic US	<i>Borrelia burgdorferi</i> and <i>B. mayonii</i> (which causes Lyme disease), <i>Anaplasma phagocytophilum</i> (anaplasmosis), <i>B. miyamotoi</i> disease (a form of relapsing fever), <i>Ehrlichia muris euclairensis</i> (ehrlichiosis), <i>Babesia microti</i> (babesiosis), and Powassan virus (Powassan virus disease)
	LONE STAR TICK (<i>Amblyomma Americanum</i>)	Widely distributed in the eastern United States, but more common in the South	<i>Ehrlichia chaffeensis</i> and <i>E. ewingii</i> (which cause human ehrlichiosis), <i>Francisella tularensis</i> (tularemia), Heartland virus (Heartland virus disease), Bourbon virus (Bourbon virus disease), and Southern tick-associated rash illness (STARI)
	AMERICAN DOG TICK (<i>Dermacentor variabilis</i>)	Widely distributed east of the Rocky Mountains. Also occurs in limited areas on the Pacific Coast	<i>Francisella tularensis</i> (tularemia) and <i>Rickettsia rickettsii</i> (Rocky Mountain spotted fever)
	BROWN DOG TICK (<i>Rhipicephalus sanguineus</i>)	Worldwide	<i>Rickettsia rickettsii</i> (Rocky Mountain spotted fever). Primary vector for <i>R. rickettsii</i> transmission in the southwestern United States and along the U.S.-Mexico border
	GROUNDHOG TICK (<i>Ixodes cookie</i>)	Throughout the eastern half of the United States	Powassan virus (Powassan virus disease)
	GULF COAST TICK (<i>Amblyomma maculatum</i>)	Southeastern and mid-Atlantic states and southern Arizona	<i>R. parkeri</i> (<i>R. parkeri</i> rickettsiosis), a form of spotted fever
	ROCKY MOUNTAIN WOOD TICK (<i>Dermacentor andersoni</i>)	Rocky Mountain states	<i>Rickettsia rickettsii</i> (Rocky Mountain spotted fever), Colorado tick fever virus (Colorado tick fever), and <i>Francisella tularensis</i> (tularemia)
	SOFT TICK (<i>Ornithodoros</i> spp)	Throughout the western half of the United States, including Texas	<i>Borrelia hermsii</i> , <i>B. turicatae</i> (tick-borne relapsing fever [TBRF])
	WESTERN BLACKLEGGED TICK (<i>Ixodes pacificus</i>)	In the Pacific Coast states	<i>Anaplasma phagocytophilum</i> (anaplasmosis), <i>B. burgdorferi</i> (Lyme disease), and very likely <i>B. miyamotoi</i> (<i>Borrelia miyamotoi</i> disease, a form of relapsing fever)

SOURCE: [CDC- Tick ID](#)

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SOURCE: [CDC](#) – (left to right) Larvae, Nymph, Adult Male, Adult Female

CURRENT TRENDS OF LYME DISEASE

Lyme disease is widespread in the Northern Hemisphere, most cases reported in the Northeast and Upper Midwest. Lyme diseases cases are on the rise in the US.

Nebraska reported 9 (6 confirmed, 3 probable) cases in 2021 and 5 (4 confirmed, 1 probable) cases in 2020. [NE-DHHS](#), [HAN- Lyme Disease](#)

In 2019, there were [5,440 confirmed cases](#) of Lyme disease among age group 0-19 years, and 2,001 probable cases in the US.

QUICK LINKS

[CDC - Lyme disease](#)

[Lyme Disease charts and figure: Most recent year](#)

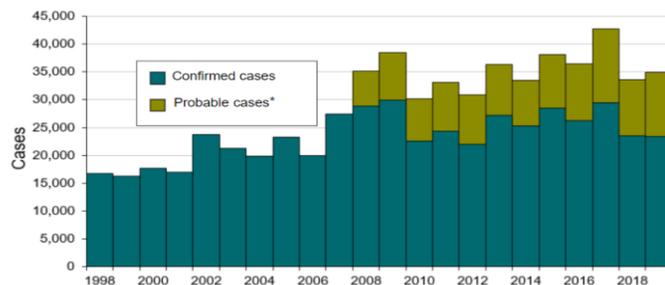
[Tickborne diseases of the United States](#)

[Lyme disease: Diagnosis and Treatment](#)

[CDC- Data and Surveillance of Lyme Disease](#)

[How to remove a tick safely](#)

Reported Cases of Lyme Disease by Year, United States, 1998-2019



Source: [Lyme- Stats](#)

WHAT ARE THE SYMPTOMS, DIAGNOSIS AND TREATMENT FOR LYME IN KIDS?

SYMPTOMS: Bulls-eye rash (shown in pictures below), facial palsy, headache/meningitis, swelling of tissues around brain & spinal cord, arthritis with severe joint pains.

DIAGNOSIS: [Erythema migrans \(EM\)](#) rash is highly suggestive of early Lyme. Antibody testing is not recommended in such patients, as single EM lesion are often false-negative. Blood test detecting antibodies can be used; however, you might get a false-positive if you have had Lyme disease before or a false-negative if tested too soon. Enzyme immunoassay is highly sensitive. Culture, PCR or antigen tests are not reliable and not recommended.

TREATMENT: Antibiotics such as Penicillin G, doxycycline, ceftriaxone and cefotaxime are all effective in early stages. Other treatment are intravenous ceftriaxone.

HOW TO PREVENT LYME DISEASE

- Avoid tick “playgrounds”:** Ticks like low-level shrubs and grasses, so avoid these areas. Walk on cleared paths or pavement.
- Dress appropriately:** Wear long pants and shoes that cover your feet. Tuck your pants into your socks.
- Use insect repellent:** Products that contain DEET repel ticks but DO NOT KILL them. You must still check for ticks.
- Check and shower after all outdoor activities:** Search your children’s clothing and body very thoroughly. Showering helps remove unattached ticks.



Centers for Disease Control and Prevention, <http://phl.cdc.gov/phl> "Classic" Lyme disease rash



© Bernard Cohen, Dermatologist: <http://www.dermatlas.org> "Expanding" Lyme disease rash

Tularemia, also known as ‘rabbit fever’ is another tick-borne disease. It’s caused by the bacterium *Francisella tularensis*.

Possible signs include skin ulcers, inflamed eyes, swollen and painful lymph glands, muscle aches, fever, joint pain, and dry cough.

Tularemia is treatable with certain [antibiotics](#). Find out more about [Tularemia in Kids](#).