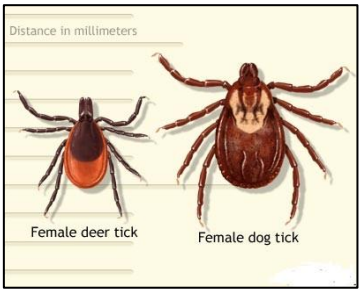
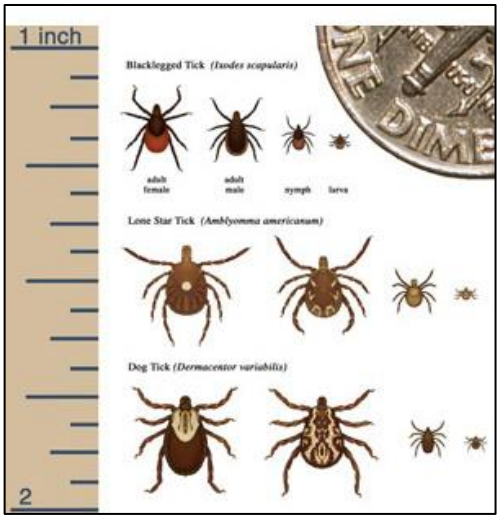
Tick Information and Safety Tips



Not all deer ticks are infected with the Lyme disease bacterium. "In areas where [Lyme disease] is very common, one out of every four or five ticks might be infected," says Paul Mead, M.D., MPH, chief of epidemiology and surveillance activity at the CDC. "In other areas where it's much rarer, that may be more like one in 100." More than 97% of all cases of Lyme occur in the northeastern and north-central parts of the country, says Mead. Your chances of being bitten by an infected tick outside of those areas are very small.

If a tick is removed within 24 hours of biting, risk of infection drops dramatically. "It's important to take a definitive step quickly," says Mead. Obvious engorgement of the tick indicates a sufficiently long attachment for infection to happen. "If you look for ticks every day and [if you] find them remove them, you aren't likely to get Lyme disease." **Use tweezers to remove the tick** as quickly as possible. Mead explains that the CDC recommends grasping the tick with the tweezers as close to the skin as possible, then pulling upward without twisting. Be sure to clean the area after -- and your hands!



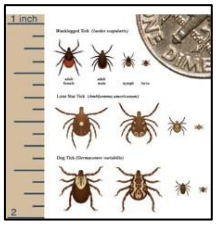
Within 3 days of being bitten by a tick, many people will develop a red spot that never expands to bigger than a dime. This is just an allergic reaction to the saliva that the tick is spitting into you. Watch the site, however. The Lyme rash grows larger than 5 cm (2 in) in diameter and does not usually appear before 5-7 days after the tick bite. If the red spot grows in size over a period of a week or so, to bigger than 2 inches, then it is likely to be a sign that you are infected with the Lyme disease agent.

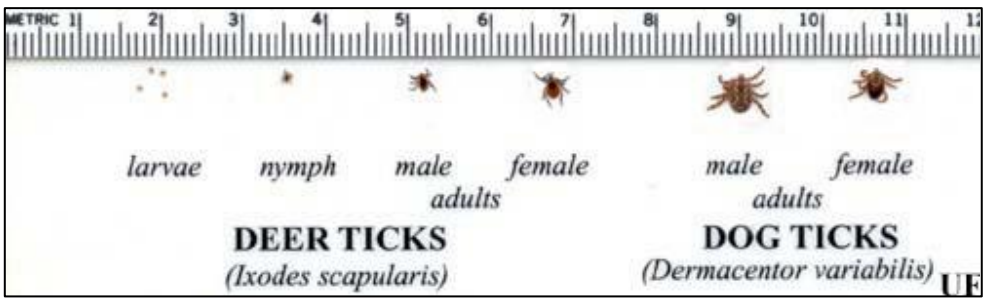
Not everyone develops the characteristic "bull's eye" rash. It shows up in about 80 to 90 percent of people, according to the American Lyme Disease Foundation (ALDF), and usually appears as a red blotch with a red ring emanating from the site of the tick bite. If you've been bitten by a tick and notice other possible symptoms, like fevers, headaches and muscle pain, consult a doctor as soon as possible. The longer Lyme disease goes undiagnosed and, therefore, untreated, the more severe the symptoms can become. Untreated infection can cause a paralysis to facial muscles called Bell's palsy, irregular heartbeats, arthritis and short-term memory problems, says Mead. When treated with antibiotics in the early stages of the disease, Lyme disappears in almost all people -- and quickly, too. But in a small number, symptoms like muscle/joint pain or memory problems persist.

"The most widely-used test for Lyme disease doesn't test for the organism itself, but for antibodies that your immune system makes," Mead says. "When you are first infected, your body hasn't had time to make those antibodies, and you can test negative in the early stages of the disease." **Test results for Lyme disease are unlikely to be positive until about 4 weeks AFTER the known tick bite.** It takes our bodies that long to mount a measurable antibody response. Approximately 20% of people with well-characterized Lyme disease may have a negative test.

If you and your doctor do choose to watch and wait, you must be attentive to the subtle and variable symptoms that can occur and be ready to treat aggressively if they do. Choosing to treat patients with 1 dose of doxycyline is becoming very common. The one dose of Doxycycline may prevent an antibody response, and may prevent the rash from appearing, but may not prevent disease dissemination. Opting for watch and wait may be the better choice. Some physicians treat tick bite as if it were early Lyme disease with 3-6weeks of antibiotic.

Actual Sizes





How can one prevent Lyme disease? The best way to prevent Lyme disease is to prevent tick bites.

While outdoors:

- Avoid high grass and bushy areas as much as possible.
- Wear long pants and long-sleeved shirts to minimize skin exposure to ticks.
- Tuck your pants into your socks to form a barrier to keep ticks out.
- Wear light-colored clothing so you can easily see ticks on your clothing.
- Check for ticks, looking particularly for what may look like nothing more than a new freckle or speck of dirt, and remove ticks promptly.
- Use effective tick repellents on your skin or on your clothing.
    - On skin:
        - DEET (N,N-diethyl-meta-toluamide) is effective against ticks and has been used safely for many years. A higher percentage of DEET in a repellent does not mean that the protection is better—just that it will last longer.
            - Do not use DEET on infants younger than 2 months old.
            - Do not use DEET in concentrations greater than 30%.
            - DEET is safe for children in concentrations up to 30%.
        - Picaridin (KBR 3023)
        - Oil of lemon eucalyptus or its synthesized version, p-Mentane-3,8-diol
        - IR3535 (3-[N-Butyl-N-acetyl]-aminopropionic acid, ethyl ester)
    - On clothing: Permethrin is an insecticide and insect repellent that can be used on clothing, shoes, bed nets, and camping gear. Permethrin should never be applied to skin. Permethrin-treated clothing repels and kills ticks, mosquitoes, and other insects and retains this effect after laundering. Treated shoes and socks are particularly helpful, offering much greater protection than untreated footwear.
    - For more information, go to EPA's website: http://cfpub.epa.gov/oppref/insect/index.cfm

When you come indoors:

- Check your body for ticks, and check your children. Pay special attention to the head, armpits, and groin area.
- Remove ticks promptly.
- Showering within a few hours of being outside may be helpful.
- Examine your gear and clothing. Put your clothes in the dryer on high heat for 15-30 minutes, even before washing. Any remaining ticks will dessicate.

In the United States, some ticks carry pathogens that can cause human disease, including:

- **Anaplasmosis** is transmitted to humans by tick bites primarily from the blacklegged tick (Ixodes scapularis) in the northeastern and upper-midwestern U.S. and the western blacklegged tick (Ixodes pacificus) along the Pacific coast.
- **Babesiosis** is caused by microscopic parasites that infect red blood cells. Most human cases of babesiosis in the U.S. are caused by Babesia microti. Babesia microti is transmitted by the blacklegged tick (Ixodes scapularis) and is found primarily in the northeast and upper midwest.
- **Ehrlichiosis** is transmitted to humans by the lone star tick (Ambylomma americanum), found primarily in the southcentral and eastern U.S.
- **Lyme disease** is transmitted by the blacklegged tick (Ixodes scapularis) in the northeastern U.S. and upper midwestern U.S. and the western blacklegged tick (Ixodes pacificus) along the Pacific coast.
- **Powassan disease** is transmitted by the blacklegged tick (Ixodes scapularis) and the groundhog tick (Ixodes cookei). Cases have been reported primarily from northeastern states and the Great Lakes region.
- **Tularemia** is transmitted to humans by the dog tick (Dermacentor variabilis), the wood tick (Dermacentor andersoni), and the lone star tick (Amblyomma americanum). Tularemia occurs throughout the U.S.