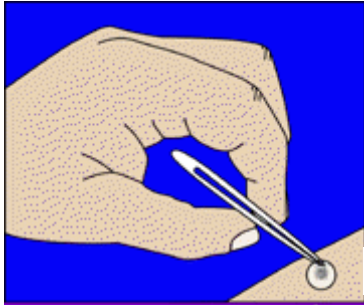
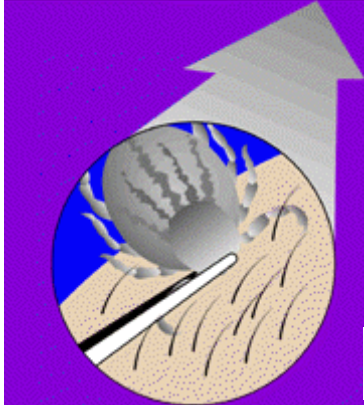


HOW SHOULD A TICK BE REMOVED?



Use fine-tipped tweezers.



Grasping tick as close to the skin as possible.

Image courtesy FDA.

Grasp the embedded tick with fine-tipped tweezers (never with bare hands) as close to your skin as possible. With a steady motion, pull the tick's body away from the skin.

Do not jerk or twist the tick as you extract it. Do not apply alcohol, fingernail polish, heat from a lit match, or petroleum jelly to the tick.

These methods are not effective and can increase the chances of the tick transmitting the disease. If the tick cannot be removed or part of it is left in the skin, consult your physician. If the tick's mouthparts remain in the skin, do not be alarmed. The bacteria that cause Lyme disease are contained in the tick's midgut. *Wash hands with soap and water and cleanse the area with an antiseptic.*

You may want to have the tick identified to find out if it is the Western Black-legged tick. Of the 48 tick species found in California, ONLY the WBLT vectors (transmits) Lyme disease. Place the tick in a zip-lock

bag along with a moistened napkin, tissue, or cotton ball. Contact your local vector control district, mosquito abatement district, or health department to have the tick identified. If it is a WBLT, there are several laboratories that can test the tick, normally for a small fee, to determine if it harbors the Lyme disease spirochete. Tick testing may help your physician evaluate if you were exposed to the Lyme disease agent. No matter what the testing result, you should monitor yourself for the signs and symptoms of Lyme disease after being bitten by a tick.

CAN PETS GET LYME DISEASE?

Pets and other animals can get Lyme disease, showing signs such as swollen joints and lameness. Contact your veterinarian if your pet exhibits symptoms such as arthritis or nervous system abnormalities and has been in an area where ticks occur. Your veterinarian can provide information on the vaccine and tick repellent strategies appropriate for pets.

For more information on ticks and Lyme disease call:

**Alameda County Vector Control
Services District
1131 Harbor Bay Pkwy, STE 166
Alameda, CA 94502
(510) 567-6800**



MVCAC Public Information Committee: December 2001
D. Bass, D. Boronda, C. Canterbury, K. Costa, A. Devencenzi, J. Francisco, A. Hom,
S. Maggy, K. Middleton, S. Miladin, C. Smith, and D. Wilson

Lyme Disease (Lyme Borreliosis)



"Questing" Tick

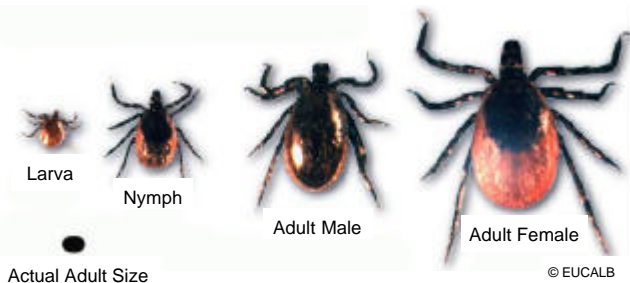
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WHAT IS LYME DISEASE?

Lyme disease is a preventable bacterial infection transmitted to humans in California by the bite of the Western Black-legged tick (WBLT), *Ixodes pacificus*. Lyme disease was named for Old Lyme, Connecticut where it was first recognized in 1975. The first cases of the disease in California were diagnosed in 1978, and it has since become the most reported vector-borne disease in California as well as in the United States.

WHAT CAUSES LYME DISEASE?

Lyme disease is caused by a corkscrew-shaped bacterium (spirochete) identified in 1982, and named *Borrelia burgdorferi*. This bacterium mainly inhabits the digestive tract of deer ticks of the genus *Ixodes*. The tick acts as a vector transmitting the Lyme disease bacterium to humans when the tick feeds on a person.



WHAT ARE TICKS?

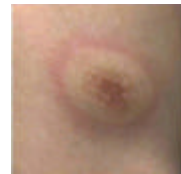
Ticks are small, spider-like creatures that have eight legs attached to a flattened body and can be found on grasses, shrubs and leaf litter. After they hatch from eggs, all ticks have three stages (larva, nymph, and adult) that feed on the blood of vertebrates. The adult female is about 1/8-inch long and has a dark head and reddish brown hind parts. The males are smaller and entirely brownish-black. The eight-legged nymphs are less than 1/16-inch long, and the six-legged larvae are slightly larger than the period at the end of this sentence.

HOW DO TICKS BECOME INFECTED WITH LYME DISEASE?

Lyme disease is maintained in wild rodent populations, on which the larvae and nymphs feed. The larval or nymphal ticks pick up the disease organism when they feed on the blood of infected rodents. The adult ticks then look for larger hosts, such as deer or the incidental human, to get their final blood meal.

WHAT ARE THE EARLY SIGNS AND SYMPTOMS OF LYME DISEASE?

Within 30 days of when a tick became attached, an expanding rash may appear (not always at the bite site) known as *erythema migrans* (EM). Flu-like symptoms may also develop that often include fatigue, headache, stiff neck, muscle aches and joint pains. Some individuals will have neither recognized illness nor classical (EM) rash. For these patients, the physician will have greater difficulty making the correct diagnosis.



Erythema Migrans (EM) Rash

WHAT ARE THE ADVANCED SYMPTOMS OF LYME DISEASE?

Possible complications include chronic arthritis, nervous system abnormalities, and cardiac disease. These symptoms may develop if the disease is not properly or promptly treated.

DOES TREATMENT EXIST FOR LYME DISEASE?

Once diagnosed, Lyme disease can be treated by taking certain antibiotics. Treatment during the early stage of the disease can cure the infection and prevent complications that can occur in the advanced stage. Treatment during the advanced stage is more difficult and not always successful. Therefore, it is important to obtain early diagnosis and therapy.

WHAT PREVENTATIVE MEASURES CAN AN INDIVIDUAL TAKE AGAINST LYME DISEASE?

The best prevention against Lyme disease is to avoid being bitten by ticks. Whenever possible, persons should avoid entering areas that are likely to be infested with ticks. Individuals who venture into these areas should be aware of the hazard associated with tick bites and make it a habit to regularly check their bodies for ticks. Other personal protective measures should include:

- Wear light colored clothing so ticks can be seen and removed before they become attached to skin.
- Wear long pants and long-sleeved clothing.
- Tuck pants into socks or boots, and shirt into pants.
- Use approved repellents around shoes, ankles and on exposed skin. Be sure to follow the manufacturers instructions carefully!
- Choose wide trails and walk in the center. Avoid brushy and grassy areas as well as off-the-trail hikes.
- Inspect yourself and others (including pets) thoroughly for ticks at least once an hour while walking in suspected tick infested areas.



Tucking Pants into Socks