LYME DISEASE
Reportable Disease

CAUSE
Borrelia burgdorferi, bacteria

SYMPTOMS
Early: About three-fourths of Lyme disease cases experience an expanding rash (usually 2 or more inches across) which looks like a **bull's-eye**, with a red outer rim and central clearing, called erythema migrans. Occasionally the rash does not look like a bull's-eye. A rash from Lyme disease will not be itchy, painful, or swollen. This rash first occurs at the site of the tick bite and may occur elsewhere on the body. It may not be noticed because of the location of the tick bite. Sometimes the rash is not present. A person with early Lyme disease may also have fever, malaise, fatigue, headache, stiff neck, joint pains, or muscle aches.
Late: Weeks or months later, the joints, nervous system, and heart may be affected. Late symptoms can include arthritis, facial palsy, and meningitis.

SPREAD
Lyme disease bacteria are spread through the bite of an infected blacklegged tick (deer tick) or western blacklegged tick. The tick is usually attached and feeding for at least one or two days before transmission can occur. Not all ticks carry the bacteria. Of the three common ticks found in Contra Costa County, only the Western black-legged tick (*Ixodes pacificus*) is capable of transmitting Lyme disease. Adult females are about 1/8 of an inch long and are reddish-brown in color, while males are slightly smaller and are brownish-black in color. Because they are so small, they often feed undetected long enough to transmit the disease. In California, the temperate climate allows the adults of these ticks to be active during the cooler months of the year, between October and March, not just during the warm summer months.

INCUBATION (time from exposure to onset of symptoms)
3 to 30 days, usually 7 to 14 days, for early symptoms to develop. Late symptoms may appear weeks to months, or even years, later.

CONTAGIOUS PERIOD
None. It is not spread from person-to-person.

EXCLUSION
Child care and School: None.

DIAGNOSIS
Recommend parents/guardians call their healthcare provider if symptoms of Lyme disease are present. It is often difficult to diagnose, since the rash is not always noticed or present. Blood tests are available, but are not always specific for diagnosing Lyme disease. The Centers for Disease Control and Prevention recommends that confirmation testing be done in addition to the screening test to ensure more accurate results.

TREATMENT
Lyme disease can be treated with antibiotics. Treatment works best if it is started early. Discuss treatment options with the healthcare provider.

PREVENTION/CONTROL

- Avoid tick-infested areas, especially from mid-May through mid-July (risk is present but lower earlier in the spring and in September to October). Deer ticks prefer wooded or brushy habitats and are not typically found in grassy fields or lawns. They are sometimes found in thick brush directly adjacent to wooded areas. Stay on paved or well-mowed paths and avoid contact with tall vegetation and shrubbery.
- Wear proper clothing when in endemic areas (areas where ticks carrying the Lyme disease bacteria are commonly found) that are wooded or brushy. Wear long pants, tuck pants into socks, wear a long sleeved shirt tucked into pants, and wear light-colored clothing so ticks are easier to see.
- Use a repellent. The most effective repellents for deer ticks contain DEET or permethrin. Repellents containing DEET (up to 30% concentration for both adults and children; do not use DEET on infants less than 2 months of age) may be used on clothing or skin, but permethrin should be used only on clothing. **ALWAYS FOLLOW THE LABEL DIRECTIONS.** If used properly, most repellents are very safe.
- Check for ticks on clothing and entire body while outdoors and when returning indoors. Check pets for ticks before letting them indoors.
- **Remove ticks promptly.** Ticks attached for fewer than 24 hours are not likely to transmit the bacteria. Grasp the tick at the mouth parts with a tweezers and pull gently but steadily straight back. DO NOT use petroleum jelly, nail polish, or burning matches to remove ticks.

A message from Contra Costa Mosquito and Vector Control on tick removal:

Removing an attached tick within 24 hours reduces the risk of contracting Lyme disease. To remove an attached tick:
* Use fine or blunt-tipped tweezers to grab the mouthparts as close to the skin as possible and gently, but steadily, lift the tick up and out of the skin. If tweezers are not available, fingers may be used. * Clean the area with soap and warm water. * Do not squash the tick while it is still attached to the skin. * Use an antiseptic at the bite location once the tick is removed. * Do not use a hot match, petroleum jelly, or other products to coax the tick out of the skin. Do not twist or attempt to unscrew the tick from the skin. Doing so may increase the risk of contracting Lyme disease.

Lyme disease in Contra Costa County is fairly rare. On average there are two to four human cases reported per year. The District monitors the risk of Lyme disease by collecting and testing Western black-legged ticks found in the County. We also identify and test ticks brought in by members of the public who have been bitten. If ticks are reasonably intact and not dried out, we may be able to test them in our own laboratory free of charge. If they are in poor condition, a more sensitive test is required and county residents have the option of sending ticks to a private laboratory for a fee of $65. If interested in our services, ticks may be mailed or brought to our office. We also identify ticks brought in by members of the public who have been bitten.

For more information please contact Contra Costa Public Health at 925-313-6740 and visit our website at http://cchealth.org/cd/ or Mosquito and Vector Control at http://www.contracostamosquito.com/ticks.htm

For a map of the tick distribution and infection rate in California, visit: http://cdphgis.maps.arcgis.com/apps/SocialMedia/index.html?appid=8d99fb1135d1424f9d8a8711acb7d459