Protect Yourself from Ticks Where You Work!

This article is specifically for outdoor workers, their supervisors, and workplace safety personnel.

If your job involves working outdoors where ticks are found (grassy, brushy areas; mixed hardwood forest), you may be at risk for tick bites and the diseases ticks carry. In California, common ticks include the western black-legged tick (*Ixodes pacificus*) which may transmit Lyme disease, the Pacific coast tick (*Dermacentor occidentalis*), and the American dog tick (*D. variabilis*) which may spread Rocky Mountain spotted fever among other diseases. These diseases can be serious.

It is important that you and your employer know how to prevent tick bites while working outdoors, and what to do if you are bitten.

This article focuses on the kinds of ticks most likely to be encountered in the outdoor workplace. There are also soft ticks that could pose some risk in the indoor rural workplace that are not discussed in this article. For more information on soft ticks, please visit the [California Department of Public Health’s webpage on Tick-Borne Relapsing Fever](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/TBRF.aspx).

What types of workers are at risk for tick bites? At-risk occupations and job duties include, but are not limited to, the following:

- Brush clearing
- Construction
- Farming
- Forestry
- Irrigation worker
- Land surveying
- Park or wildlife management
- Utility line work
- Trail construction/management

Worksites with high, wild grass, mixed hardwood forests, bushes, and leaf litter are likely to have ticks. Ticks can also be found on wood products in campgrounds and parks, and it is advised to be aware of ticks when sitting on logs, picnic benches, and even rocks.

**Tick season.** In California, adult ticks are most common in fall and winter. Small immature, nymphal ticks are common in spring into summer and are the primary vector of Lyme disease to people.

**Types of tick-borne diseases.** Ticks may carry bacteria, viruses, or parasites and pass them to humans and other warm-blooded mammals when they attach themselves for a blood meal. Lyme disease is the most commonly reported tick-borne disease in California with approximately 100 cases reported each year. Other tick-borne diseases in California include: babesiosis, ehrlichiosis, Rocky Mountain spotted fever, anaplasmosis (HGA), and tularemia.
How to prevent tick bites. When working in tick habitat, you should:

- Wear a long-sleeved shirt and long pants and tuck in your shirt. Since ticks are usually brown, reddish, or black, wearing light-colored clothing can help you notice ticks.
- Wear an EPA-registered insect repellent containing 20-30% DEET or Picaridin on exposed skin. Another effective technique is to spray DEET on your clothing to repel ticks or spray permethrin on clothing to kill ticks. Be sure to follow the label instructions carefully.
- Check yourself and others for ticks regularly while you are outdoors. Ticks can be seen crawling on clothing, but they can also find their way into less visible places.
- Take a shower soon after you return from a tick-infested area. Check for ticks everywhere, including behind the knees, under the arms, and in the hairline and groin areas. Make additional checks for several days after being in tick habitat.
- Wash and dry work clothes in a hot dryer
- If you take your pet into tick habitat, conduct several tick checks on your pet as well.

How to identify a tick. Adult ticks are less than 1/4 of an inch long and about 1/8 inch wide. The early life stage, called a nymph, is smaller and harder to see than the adult tick, and is about the size of a poppy seed. (Photo shows two adults [left] and one nymph [right]). Adult and nymphal ticks have 8 legs and a teardrop body shape.

What if you find a tick biting you? Timing is crucial! Remove the tick as soon as possible. Depending on the disease agent, it takes several hours to two days for an attached tick to infect a person with a disease-causing organism.

How to remove a tick. The best method to remove a tick is to manually pull it out using tweezers.

- Cleanse the area around the tick with soap and water or antiseptic.
- Grasp the tick’s mouthparts with the tweezers close to the skin.
- Using a gentle, straight-up motion, pull the tick slowly upwards. Do not twist or jerk the tick while pulling.
- Occasionally during removal, the embedded mouthparts may break off and stay in the skin. If this happens, remove the mouth parts with tweezers as you would
a splinter. If you cannot remove the mouthparts, clean the wound, apply antibiotic ointment, and see your health care provider if the bite site becomes infected.

- Apply an antiseptic to the bite site and wash your hands with soap and water.

Some commercially available tick-removal devices can be effective. These devices usually have a beveled edge to make it easier to grasp the tick, are handy to carry, and may be easier to use than tweezers. The same principle of pulling the tick up and out slowly without twisting applies. Tick removal techniques such as applying nail polish, lighting the tick with a match, or swabbing it with liquid soap are not effective and can be dangerous.

Some people develop a painful red reaction at the tick bite site within 24 hours of the bite. This reaction to the saliva of the tick goes away within days and does not mean a disease agent has been transmitted.

Dispose of the tick in the trash, or save it for identification by the local vector control agency by placing it in alcohol.

Documentation of a tick bite while on the job should be discussed with your supervisor and/or safety officer. The safety officer may want to note the date of the tick bite and the work location at the time of the bite in case symptoms of a tick-borne illness begin within one month after the bite.

Testing a tick for presence of a disease-causing agent is not recommended because test results may not be accurate, may take too long for medical decision-making, and a positive result does not necessarily indicate transmission has occurred. It is more important to monitor yourself for symptoms of a tick-borne disease after a tick bite.

**Symptoms of a tick-borne disease.** Some of the most common symptoms of tick-borne diseases are:

- Body/muscle aches
- Fever
- Headaches
- Fatigue
- Joint pain
- Rash (for Lyme disease the rash is a spreading painless reddened area, sometimes with “bullseye” appearance; the Rocky Mountain spotted fever rash is a red spotted rash beginning on the palms and soles of the feet)
- Stiff neck
- Facial paralysis

These symptoms can develop up to 30 days after the tick bite.

**What if you develop symptoms of a tick-borne disease?** If you develop symptoms of a tick-borne disease, notify your employer and seek medical attention promptly. Be sure to tell your health care provider that you work outdoors in an area where ticks may be present.

**Diagnosis and treatment.** Tick-borne diseases are diagnosed based on symptoms
and the possibility that the worker has been exposed to infected ticks. Most cases can be successfully treated with specific types of antibiotics, especially if treatment is started early.

**Recommendations for employers.** Employers can take proactive steps to help prevent tick bites to their employees by providing them with knowledge and protection:

- When possible, have workers avoid sites with woods, bushes, tall grass, and leaf litter.
- Be aware of when and where ticks are present.
- Suggest the use of protective clothing: long-sleeved shirts, long pants, and socks. If uniforms are provided, provide light-colored long-sleeved shirts and long pants as clothing options.
- Train employees to know what a tick looks like and how to remove a tick if one attaches.
- Inform employees about how tick-borne diseases are spread, and risks of exposure and infection.
- Provide EPA-registered repellents (containing 20% to 30% DEET) for use on skin and clothing for protection against tick bites. Permethrin, which kills ticks on contact, can be also provided for use on clothing. Commercially available permethrin-impregnated work clothes may also be an option. Be sure repellent label instructions are read prior to application.
- Stress the importance of timely reporting of workplace illnesses and injuries, including tick bites or symptoms of tick-borne disease.

For more information about tick-borne diseases in California visit the [California Department of Public Health’s Tick-Borne Diseases Website](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Tick-Borne-Diseases.aspx)

See the [CDPH Workplace Tick-bite Prevention poster](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/TickBorneDiseasesLargePoster.pdf)

For information on repellents visit: [The National Pesticide Information Center](http://npic.orst.edu/)

[The CDC’s West Nile virus Prevention page](https://www.cdc.gov/westnile/prevention/index.html)

For information on workplace hazards call the CDPH Occupational Health Branch Workplace Hazard Helpline at: (866) 282-5516.

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