



California Environmental Protection Agency

Department of Pesticide Regulation

Using Insect Repellents Safely

Mosquitoes, biting flies, and ticks are annoying and can pose a serious health risk. Mosquitoes can transmit diseases like Western equine encephalitis and St. Louis encephalitis. Biting flies can inflict a painful bite that can swell and become infected. Ticks can transmit Lyme disease and other serious ailments. When properly used, insect repellents can discourage biting insects from landing on treated skin or clothing.

Choosing Insect Repellents

Insect repellents are available in various concentrations and formulations--aerosol and pump-spray products, liquids, creams, lotions, and sticks. An extra-strength product may not provide extra protection. Although you may need to apply it more often, a lower-strength product lessens your chances of an adverse reaction to a chemical. You may also want to consider nonchemical ways to deter biting insects--screens, netting, long sleeves, closed shoes, and slacks.

Check the container to ensure that the product bears a U.S. EPA-approved label and registration number. This means the U.S. Environmental Protection Agency has approved the product for safe and effective use. Follow label directions carefully, use no more than the amount directed, under the conditions specified, and for the purpose listed. For example, if you need a tick repellent, make sure that the product label lists this use. If ticks are not listed, the product may not work well against them.

Using Insect Repellents Safely

The California Department of Pesticide Regulation recommends the following precautions when using insect repellents:

- You should read all label directions before using the product and follow them carefully.
- Not all repellents are intended to be applied to the skin. If application is allowed, you should apply repellents only to exposed skin and/or clothing (as directed on the product label). You shouldn't use them under clothing. Read the label carefully. Some repellents damage certain fabrics and plastics (including vinyl car seats).
- You shouldn't use repellents over broken or irritated skin, or apply to eyes and mouth. With young children, do not apply to their hands, which often end up in their mouths. You should avoid breathing a repellent spray. Do not use near food.
- Although reactions to repellents are rare, it is always best to use them sparingly. Heavy application and saturation are unnecessary for effectiveness.
- Start with a low-concentration product and reapply if necessary. Better to build up to an effective level of protection than to start with more than you need.
- Once you're back indoors, wash treated skin with soap and water. This is particularly important when you use repellents repeatedly in a day or on consecutive days.

- If you suspect that you or your child are reacting to an insect repellent, wash treated skin and then call your local poison control center. If you go to a doctor, *take the repellent container with you.*

Avoiding Ticks and Lyme Disease

Lyme disease has become the leading tick-borne illness in the U.S. Although it is a more serious problem in the Northeast, there were 436 cases of Lyme disease reported in California from 1992 through 1994. The Western black-legged tick, the species that most often transmits the disease, is found in 55 of California's 58 counties. This species commonly bites people as well as animals. With proper precautions, Lyme disease is preventable.

- Adult ticks are found on grasses and other low vegetation from October through June. Immature nymph ticks are found in leaf litter from February through August.
- When in an infested area, tick repellents can help. Their effectiveness is greatly increased if you also use a permethrin-containing insecticide designed to be applied to clothing rather than your skin. Follow label instructions carefully--for example, wait to let the product dry before you wear the clothes.
- Tuck pants cuffs into boots or socks.

Wear long sleeves and light-colored clothing which makes it easier to spot ticks.

- Stay to the center of hiking paths, and avoid grassy and marshy woodland areas.
- Inspect yourself, your children, and your pets for clinging ticks after leaving an infested area. Ticks are hard to see. Nymphs are the size of a sesame seed, adults about 1/8 inch long. If you discover a tick feeding, do not panic. Studies show that an infected tick does not usually transmit the Lyme organism during the first 24 hours. Even in heavily infested areas, only 1 to 2 percent of biting ticks carry the disease.
- Remove the tick with tweezers, grasping it close to the skin and applying steady upward pressure to make sure you remove all parts of the tick. Then disinfect the area.
- If you suspect Lyme disease or its symptoms (a rash that sometimes looks like a "bull's-eye" of red circles, and flu-like symptoms), contact your doctor immediately.