



## ***Biting Insects and Ticks Can Impact Health and Comfort***

***Take Personal Protection Measures To Help Reduce The Risk Of Contracting Insect- And Tick-Borne Diseases***

**WHAT YOU NEED TO KNOW ABOUT:  
Insect Repellent Selection  
Proper Use of Repellents  
Reducing Exposure to  
Insect- and Tick-Borne Diseases**

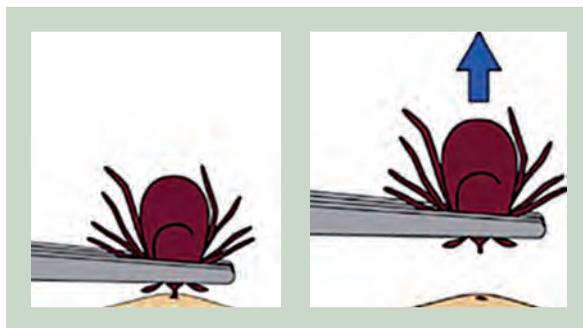
*A public education program of the  
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## Biting Insects and Ticks Are Just About Everywhere

You don't have to travel abroad, trek deep into the woods or go fishing in Alaska to come into contact with biting insects and ticks. Mosquitoes, ticks, fleas and chiggers can be found much closer to home. Backyards, playgrounds, neighborhood parks, recreation areas, athletic fields, the beach, and tennis courts—all are prime locations for close encounters of the "biting" kind.

**To help reduce the incidence of insect and tick bites and potential exposure to disease-causing germs they may carry, experts suggest the following:**

- Use insect repellent containing an EPA-registered active ingredient like DEET, carefully following all label directions.
- Avoid heavily wooded, high-grass areas and standing water.
- Dress in light-colored clothes to discourage mosquitoes and to enable you to spot ticks more easily.
- For additional protection against ticks:
  - Wear collared, long-sleeved shirts and long pants with cuffs. Tuck your shirt into your pants and the pant cuffs into your socks or boots.
  - Products available for application specifically to clothing are effective but should *never* be used on your skin. Follow label directions for their use as these are insecticides, not repellents. They kill insects and ticks on contact.
  - Look for ticks before you return indoors. Some are only the size of a pinhead. Check your clothing and around the scalp, nape of the neck, behind ears and knees, groin, and armpits. Once inside, shower as soon as possible and do another tick check.
  - Immediately put your clothing in the clothes dryer on "high" for 10-20 minutes to kill hitchhiking ticks. Ticks will survive a trip through the washing machine but not through the dryer.
  - Remove ticks with tweezers (see illustration). DO NOT use petroleum jelly, hot matches, dishwashing liquid or other improper methods. Kill ticks by putting them in a small container with alcohol.
- Treat insect and tick bites with a topical first aid product. If rashes or flu-like symptoms occur within 14 days, seek medical attention.



## Frequently Asked Questions

### What is DEET?

DEET (N, N-diethyl-m-toluamide) is the active ingredient in the most widely-available insect repellents. It is registered for use by the U.S. Environmental Protection Agency (EPA). It has been used in repellent products for 60+ years and is one of the most thoroughly-researched consumer product active ingredients on the market today.

### What does EPA registration mean?

Registration occurs only after the EPA determines that the active ingredient in the repellent product meets standards for effectiveness and is unlikely to affect human health or the environment when the product is used according to label directions.

### How widely is DEET used?

Consumers have used DEET-based products for decades, with billions of applications. About 30% of Americans use DEET repellents annually.

## Applying Insect Repellents

### DO:

- Apply repellent evenly to all exposed skin and, for ticks, to clothing as directed on the product label. Use aerosols or pump sprays for skin and for treating clothing. Direct sprays onto the skin—don't randomly spray around yourself. Use liquids, creams, lotions, towelettes or sticks to apply more precisely to exposed skin.
- Smooth products evenly over exposed skin to assure coverage.
- After your outdoor activity, wash repellent-treated skin with soap and water.
- Always keep insect repellents out of the reach of young children.
- Apply to children by putting the repellent on your own hands, then smoothing it evenly onto the child's exposed skin.

### How can I determine what the concentration is?

Each product has a list of ingredients that shows the percentage ("concentration") of DEET it contains. This is on the front of each product.



### Which DEET concentration should I use for mosquitoes?

DEET-based insect repellents are available in concentrations from 5% to 100%. Higher concentrations typically provide longer periods of protection. Use a concentration that matches your anticipated time outdoors. A 5% product lasts an hour or so, while a 30% product lasts up to eight hours, based on many factors.

### Which DEET concentration should I use for ticks?

Generally, the higher the concentration of active ingredient in the product, the longer the protection time. So, more is not "better", it's "longer". The CDC recommends using products with at least a 20% concentration to help repel ticks. Keep in mind, however, that protection times may be shorter for repelling ticks than for mosquitoes.

### Can I use a DEET insect repellent and sunscreen at the same time?

Yes. The CDC suggests applying sunscreen first. Once it dries on the skin, apply repellent. Reapply sunscreen lavishly and often. Reapply repellent only when bugs start biting you again.

### DON'T:

- Don't apply to eyes, lips or mouth or over cuts, wounds or irritated skin.
- Don't overapply or saturate skin or clothing.
- Don't apply to skin underneath clothing unless mosquitoes can bite through the fabric.
- Don't apply more frequently than directed on the product label.
- Don't apply repellent on the hands of young children who put their fingers in their mouths and/or rub their eyes.



## Tips For Parents

- Do not randomly spray repellent around your child. Instead, apply repellent to your hands, then smooth it evenly onto your child's exposed skin. Follow label directions.
- Do not apply repellent to your child's mouth, hands or eyes.
- Children should not apply repellent to themselves or others until they can read and understand product label instructions.
- Do not assume that insects are not biting your children just because they are not biting you. You may need to reapply repellent to your youngsters, as needed.
- Always check children for ticks and insect bites after time spent outdoors.
- Apply repellent sparingly and take additional bite-preventing measures. (See tips in this brochure under "Biting Insects and Ticks are Just About Everywhere.")

## What Experts Say

- Experts recommend using repellents formulated with DEET to help protect against bites that can lead to insect-and tick-borne disease such as West Nile fever, Zika, Lyme disease, Rocky Mountain Spotted fever and Powassan.
- The American Academy of Pediatrics issued guidance in 2003, noting that products containing up to and including 30% DEET can be used on children as young as two months of age.



Bites from infected ticks, mosquitoes and other insects can inject dangerous viruses, bacteria and parasites into your body. These disease-causing organisms can cause symptoms such as rashes, fever, vomiting, seizures, paralysis, permanent brain damage, and sometimes death. In the case of Zika virus, preventing bites is crucial for helping to avoid devastating outcomes to babies whose mothers are infected during pregnancy. So, using the personal protection strategies suggested in this brochure is an important first step in helping to keep your family healthy and happy.



## ***Mosquito-Borne Diseases***

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Mosquitoes can transmit an array of serious, sometimes deadly diseases — among them West Nile fever, Zika, malaria, eastern equine encephalitis, dengue fever and yellow fever. The Centers for Disease Control and Prevention (CDC) reports that West Nile virus is now found in all of the “lower 48” states in the U.S., Zika virus is found in tropical and subtropical parts of the world, with travel-related cases being reported in the U.S. Except for yellow fever, there are no approved human vaccines to help prevent mosquito-borne illnesses. There are no cures, so taking personal responsibility for your protection and protection of your family is important.

## ***Tick-Borne Diseases***

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Ticks can transmit serious diseases that can cause permanent (chronic) health problems and can sometimes be fatal without prompt treatment. According to the Centers for Disease Control and Prevention (CDC), nearly 300,000 cases of Lyme disease are suspected every year in the U.S. Lyme disease, anaplasmosis, Powassan and babesiosis can be transmitted by the deer tick. Other ticks can transmit Rocky Mountain spotted fever, ehrlichiosis, tularemia and/or several newly-identified tick-borne diseases. Detected early, many tick-borne diseases can be treated effectively with antibiotics, but health experts suggest prevention as a first line of defense for you and your family.

## ***Travel Outside the U.S.***

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Travelers outside the U.S. may be exposed to a variety of insect- and tick-borne diseases including malaria, chikungunya, dengue fever and other illnesses transmitted by mosquitoes and ticks. Zika virus is particularly dangerous for unborn children. Travel clinic sites offer valuable destination-based disease-prevention information. Travelers are encouraged to take DEET-based repellents along on their trip and to follow other CDC guidance for personal protection measures.



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