

Insect Repellent

For Older 4-H'ers



Picking the right insect repellent could protect your health! Mosquitoes, biting flies, and ticks can be annoying and sometimes pose a serious risk to public health (as seen with West Nile Virus and Lyme disease).

Forms and Concentrations:

- ◆ Aerosol and pump-spray products are intended for skin applications as well as for treating clothing.
- ◆ Liquid, cream, lotion, spray, and stick products enable direct skin applications.
- ◆ Products with a low concentration of active ingredient may be appropriate for situations where exposure to insects is minimal.
- ◆ Higher concentrations of active ingredient may be useful in highly infested areas or with insect species that are more difficult to repel.
- ◆ Repellents containing a higher concentration of active ingredient (such as deet) provide longer-lasting protection.

Use the Following Precautions When Using Insect Repellent

Check the container to ensure that the product bears an EPA-approved label and registration number. Never use a product that has not been approved by the EPA!

Read the entire label before using an insect repellent. Even if you have used it before, read the label again—don't trust your memory.

Follow the directions carefully; use only the amount directed, at the time under the conditions specified, and for the purpose listed.

Store insect repellent away from children's reach—in a locked utility cabinet or garden shed.

Using Insect Repellents Safely:

- ◆ Read and follow all directions and precautions on the product label.
- ◆ Do not apply over cuts, wounds, or irritated skin.
- ◆ Do not apply to the hands or near the eyes and mouth of young children.
- ◆ Do not allow young children to apply this product, and do not apply to children's hands. When using on children, apply to your own hands and put it on the child.
- ◆ Do not spray repellent in closed areas. Avoid breathing a repellent spray.
- ◆ Do not use spray repellent near food.
- ◆ Use just enough repellent to cover exposed skin and/or clothing.
- ◆ Do not use under clothing.
- ◆ Avoid over-application of the product.
- ◆ After returning indoors, wash treated skin with soap and water.
- ◆ Wash treated clothing before wearing it again.
- ◆ Wash hands after application.





Consumer Reports Rankings

“Mosquito” indicates the minimum and maximum hours a product kept two *Aedes* mosquito species from biting testers.

“Tick” indicates minimum and maximum times a product kept deer ticks from moving from untreated skin onto treated skin.

Product	Type	Cost per Use	Mosquito	Tick	Comments
Amway Hour Guard 12	Cream, 33% deet	\$2.08	12–13 hours	9–11 hours	Now sold as 3M Ultrathon
Avon Skin-So-Soft Bug Guard	Pump spray, .1% citronella	0.67	n/a	Not labeled for ticks	
Avon Skin-So-Soft Guard Plus IR 3535 with Sunblock	Lotion, 7.5 IR 3535	1.00	1–3 hours	3 hours	Includes SPF 30 sunscreen
Ben’s Backyard Formulas	Lotion, 25% deet	0.75	5–7 hours	5–7 hours	Reformulated (20% deet); tested version may still be available
Bite Blocker Light Country Scent	Lotion, 2% soybean oil	0.46	2–4 hours	Not labeled for ticks	Renamed <i>Blocker</i>
BugOut	Aerosol, 15% deet	0.11	3–7 hours	1–4 hours	
Cutter Skinsations	Pump spray, 7% deet	0.22	1–3 hours	2–4 hours	
Cutter Unscented	Aerosol, 10% deet	0.19	2–5 hours	1–7 hours	
Muskol Ultra 6 Hours	Aerosol, 40% deet	0.24	7 hours	3 hours	
Natrapel	Pump spray, 10% citronella	0.27	1–2 hours	Not labeled for ticks	Reformulated (with aloe); tested version may still be available
Off! Deep Woods for Sportsmen	Pump spray, 100% deet	1.77	9–13 hours	3–8 hours	
Off! Skintastic with Sunscreen	Lotion, 10% deet	0.67	3–4 hours	Not labeled for ticks	Includes SPF 30 sunscreen
Sawyer Controlled Release Deet Formula	Lotion, 20% deet	0.36	4–8 hours	Not labeled for ticks	





DEET

Most repellents rely on some percentage of N, N-diethyl-metatoluamide, called **deet**, a chemical developed more than 50 years ago by the U.S. Army and the Department of Agriculture. Deet doesn't kill bugs, but its vapors discourage them from landing or climbing on you. It's generally acknowledged to be the most effective mosquito repellent available. *Consumer Reports* found that a product's hours of effectiveness generally increase with its percentage of deet. <http://www2.epa.gov/insect-repellents/deet>

Deet is available in many different concentrations, ranging from 4 to 100 percent. It is the active ingredient in most insect repellents. Approximately 230 products containing deet are currently registered with the United States Environmental Protection Agency (EPA). Most insect repellents that are available in stores are labeled with the chemical name for deet. Choose a repellent that offers appropriate protection for the amount of time you will be outdoors. A higher percentage of deet should be used if you will be outdoors for several hours, while a lower percentage of deet can be used if time outdoors will be limited.

Are there health concerns about the use of deet? The EPA states "as long as consumers follow label directions and take proper precautions, insect repellents containing deet do not present a health concern." The EPA is no longer allowing child safety claims on product labels. These claims currently appear on certain products containing a deet concentration of 15 percent or less. The scientific data on deet do not support product label claims of child safety based on the percentage of active ingredient.

The Centers for Disease Control and Prevention (CDC) recommend adults use an insect repellent that contains less than 35 percent deet, while children should use a product that contains no more than 10 percent deet. Repellents with deet should be used sparingly on children 2 through 6 years of age and not at all on infants younger than 2 years of age. <http://www.cdc.gov/travel>

NON DEET

Although deet is generally considered safe when used according to directions, some people prefer not to use it. For that reason, *Consumer Reports* tested several products that use plant oils instead. It is important to remember that essential oils, while derived from plants that grow naturally, are chemicals too. Some are potentially hazardous if ingested, applied over wounds, cuts, irritated skin, or mucus membranes such as the eyes.

<http://www.consumerreports.org>

Some non-deet repellent products, which are intended to be applied directly to skin, also provide some protection from mosquito bites. However, studies have suggested that other products do not offer the same level of protection, or that protection does not last as long as products containing deet. A soybean-oil-based product has been shown to provide protection for a period of time similar to a product with a low concentration of deet (4.75 percent).

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