

A Parent's Guide to Insect Repellents



Mosquitoes, biting flies, and tick bites can make children miserable. While most children have only mild reactions to insect bites, some children can become very sick. Some insects carry dangerous illnesses such as West Nile virus, Lyme disease, and Rocky Mountain spotted fever.

One way to protect your child from biting insects is to use insect repellents. However, it's important that insect repellents are used safely and correctly.

Read more to learn about types of repellents, DEET, using repellents safely, and other ways to protect your child from insect bites. Also, read about West Nile virus, Lyme disease, and Rocky Mountain spotted fever.

Types of repellents

Insect repellents come in many forms including aerosols, sprays, liquids, creams, and sticks. Some are made from chemicals and some have natural ingredients. (See "Available Repellents.")

The following are types of repellents that are **not** effective:

- Wristbands soaked in chemical repellents
- Garlic or vitamin B₁ taken by mouth
- Ultrasonic devices that give off sound waves designed to keep insects away
- Bird or bat houses
- Backyard bug zappers (Insects may actually be attracted to your yard.)

Keep in mind that insect repellents prevent bites from biting insects but not stinging insects. Biting insects include mosquitoes, ticks, fleas, chiggers, and biting flies. Stinging insects include bees, hornets, and wasps.

About DEET

DEET is a chemical used in insect repellents. The amount of DEET in insect repellents varies from product to product, so it's important to read the label of any product you buy. The amount of DEET may range from less than 10% to more than 30%.

Studies show that products with higher amounts of DEET protect people longer. For example, products with amounts around 10% may repel pests for about 2 hours, while products with amounts of about 24% last an average of 5 hours. But studies also show that products with amounts of DEET greater than 30% don't offer any extra protection.

The American Academy of Pediatrics (AAP) recommends that repellents should contain *no more than 30% DEET* when used on children. Insect repellents also are **not** recommended for children younger than 2 months.

Tips for using repellents safely

The following are guidelines on how to use insect repellents safely.

Dos

- Read the label and follow all directions and precautions.
- Only apply insect repellents on the outside of your child's clothing and on exposed skin.
- Spray repellents in open areas to avoid breathing them in.
- Use just enough repellent to cover your child's clothing and exposed skin. Using more doesn't make the repellent more effective. Avoid reapplying unless necessary.
- Assist young children when applying insect repellents on their own. Older children also should be supervised when using these products.
- Wash your children's skin with soap and water to remove any repellent when they return indoors, and wash their clothing before they wear it again.

Don'ts

- Never apply insect repellent to children younger than 2 months.
- Repellents should not be sprayed directly onto your child's face. Instead, spray a little on your hands first and then rub it on your child's face. Avoid the eyes and mouth.

Available Repellents

What to Look For	How Well It Works	How Long It Lasts	Other Notes
Chemical repellents with DEET (N,N-diethyl-3-methylbenzamide)	Considered the best defense against biting insects.*	3 to 8 hours depending on how much DEET is in the product.	Caution should be used when applying DEET to children (see "Tips for using repellents safely").
Repellents made from essential oils found in plants such as citronella, cedar, eucalyptus, and soybean	Generally much less effective repellents; most give short-term protection only.	Usually less than 2 hours.	Allergic reactions are rare, but can occur.
Chemical repellents with permethrin	These repellents kill ticks on contact.	When applied to clothing, it lasts even after several washings.	Should only be applied to clothing, not directly to skin. May be applied to outdoor equipment such as sleeping bags or tents.

*In April 2005 the Centers for Disease Control and Prevention (CDC) recommended other repellents that may work as well as DEET: repellents with a chemical called picaridin and repellents with oil of lemon eucalyptus or 2% soybean oil. Currently these products have a duration of action that is comparable to that of about 10% DEET. Although these products are considered safe when used as recommended, long-term follow-up studies are not available. Also, more studies need to be done to see how well they repel ticks.

Diseases spread by insects

Diseases spread by insects are a major cause of illness to children and adults worldwide. Following is information about West Nile virus, Lyme disease, and Rocky Mountain spotted fever.

West Nile virus. In the United States, West Nile virus and outbreaks of various types of encephalitis get plenty of media coverage. These illnesses are carried by mosquitoes and transmitted to humans when the insects bite.

Most cases of West Nile virus are mild, with people showing no symptoms or having a fever, headache, and body aches. Other symptoms include the following:

- A mild rash
- Swollen lymph glands
- Severe headache
- High fever
- Stiff neck
- Confusion
- Seizures
- Sensitivity to light
- Muscle weakness
- Loss of consciousness

Lyme disease. In some areas of the United States, Lyme disease has been a major health problem. Deer ticks spread the disease. Deer ticks are tiny, black-brown, biting insects about the size of a poppy seed. The first and most obvious symptom of Lyme disease is a rash. It is a red spot surrounded by a light red ring that looks like a target.

Other symptoms include the following:

- Headache
- Chills
- Fever
- Fatigue
- Swollen glands
- Aches and pains in the muscles or joints

Rocky Mountain spotted fever. Despite the name, Rocky Mountain spotted fever currently occurs mostly in other regions of the United States, including North and South Carolina, Oklahoma, and Tennessee. Ticks spread the disease. This is a serious disease in which patients develop the following symptoms:

- Fever
- Severe headache
- Confusion
- Nausea
- Vomiting
- Rash—Most also get a rash that starts as flat red spots that become purple over time. It begins on the palms and soles and then spreads to the arms and legs and then the trunk.

You don't need to be afraid to take your children outdoors. The chance of your children becoming infected with these diseases is quite low. The best way to protect yourself and your children is to follow the guidelines in this brochure for using repellents safely and avoiding areas where there may be a lot of biting insects.

If your child has been bitten by an insect and shows any of the above symptoms of West Nile virus, Lyme disease, or Rocky Mountain spotted fever, call your pediatrician.

- Insect repellents should not be applied on cuts, wounds, or irritated skin.
- Don't buy products that combine DEET with sunscreen. The DEET may make the sun protection factor (SPF) less effective. These products can overexpose your child to DEET because the sunscreen needs to be reapplied often.

- Check your child's skin at the end of the day if you live in an area where ticks are present and your child has been playing outdoors.
- Remember that the most effective repellent for ticks is permethrin. It should not be applied to skin but on your child's clothing.

Other ways to protect your child from insect bites

While you can't prevent *all* insect bites, you can reduce the number your child receives by following these guidelines.

- Tell your child to avoid areas that attract flying insects, such as garbage cans, stagnant pools of water, and flowerbeds or orchards.
- Dress your child in long pants, a lightweight long-sleeved shirt, socks, and closed shoes when you know your child will be exposed to insects. A broad-brimmed hat can help to keep insects away from the face. Mosquito netting may be used over baby carriers or strollers in areas where your baby may be exposed to insects.
- Avoid dressing your child in clothing with bright colors or flowery prints because they seem to attract insects.
- Don't use scented soaps, perfumes, or hair sprays on your child because they may attract insects.
- Keep door and window screens in good repair.

Remember

Children need and love to be outdoors. You can make their time outdoors safer by reducing their exposure to biting insects that can carry dangerous diseases. If an insect bites your child and you are concerned about it, talk with your pediatrician.

The information contained in this publication should not be used as a substitute for the medical care and advice of your pediatrician. There may be variations in treatment that your pediatrician may recommend based on individual facts and circumstances.

Reactions to insect repellents

If you suspect that your child is having a reaction, such as a rash, to an insect repellent, stop using the product and wash your child's skin with soap and water. Then call your local poison control center at 1-800-222-1222 or pediatrician for help. If you go to your pediatrician's office, take the repellent container with you.

From your doctor

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