

Insect Repellents: What Parents Need to Know

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.

Mosquito, biting fly, 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 germs such as West Nile virus, Zika virus, Lyme disease bacteria, and Rocky Mountain spotted fever bacteria.

Read on for more information from the American Academy of Pediatrics (AAP) about insect repellents, using repellents safely, and other ways to protect your child from insect bites. Also, read about diseases spread by insects.

About Insect Repellents

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.

Insect repellents come in many forms, including aerosols, sprays, liquids, creams, and sticks. Some are made from chemicals such as DEET, picaridin, IR3535, and permethrin. Others are made from natural ingredients, such as oil of lemon eucalyptus.

Here are some things to keep in mind.

- Always use an insect repellent registered by the US Environmental Protection Agency (EPA). Visit the US EPA website at www.epa.gov/insect-repellents for more information.
- Always follow the directions.
- Repellents containing 20% to 30% DEET are safe and effective when used as directed for infants and children.
- If you use repellents containing oil of lemon eucalyptus, the Centers for Disease Control and Prevention (CDC) and the AAP recommend that you do not use them on children younger than 3 years. Oil of lemon eucalyptus may cause allergic skin reactions.
- Repellents containing permethrin can be used to treat clothing and gear, but they should not be applied to skin.
- The following types of products offer minimal protection or no protection:
 - 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, which may attract insects to your yard
 - Essential oils (cedar, cinnamon, citronella, clove, geranium, lemongrass, and others) other than oil of lemon eucalyptus

Tips for Using Insect Repellents Safely

- Read the label and follow all directions and precautions.
- Apply insect repellents only on the outside of your child's clothing and on exposed skin. Never spray an insect repellent directly onto

your child's face. Instead, spray a little on your hands first and then rub it onto your child's face. Avoid your child's eyes and mouth. (Permethrin should not be applied to skin.)

- Do not spray an insect repellent on cuts, wounds, or irritated skin.
- Use just enough of the repellent to cover your child's clothing and exposed skin.
- Avoid reapplying the repellent unless needed. Using more doesn't make the repellent more effective.
- Spray repellents in open areas to avoid breathing them in.
- Apply an insect repellent on young children. Supervise older children 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.
- Do not use products that combine DEET with sunscreen. 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.

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 Poison Help at 1-800-222-1222 or your child's doctor. If you go to your child's doctor's office, take the repellent container with you.

Other Ways to Protect Your Child From Insect Bites

Here are ways to help reduce insect bites.

- Tell your child to avoid areas that attract flying insects, such as garbage cans, stagnant pools of water, and flower beds or orchards.
- Dress your child in lightly colored clothing from head to toe, such as long pants, a lightweight long-sleeved shirt, socks, and closed shoes, when you know your child will be exposed to insects. A hat with a wide brim can help keep insects away from your child's face. Mosquito netting may be used over baby carriers or strollers in areas where your baby may be exposed to 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.
- 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.

Diseases Spread by Insects and Ticks

Infectious diseases spread by insects are a major cause of illnesses to children and adults worldwide. Here are 4 diseases spread by insects.

West Nile virus is spread by mosquitos.

In the United States, West Nile virus and outbreaks of various types of encephalitis get plenty of media coverage.

Symptoms

- Most cases of West Nile virus infection are mild. People may have no symptoms or mild symptoms such as fever, headache, and body aches.
- Less common symptoms, occurring mostly in older adults, may include a severe headache, a high fever, a stiff neck, confusion, seizures, sensitivity to light, muscle weakness, and loss of consciousness.

Zika virus is primarily spread by mosquitoes.

Zika virus infection during pregnancy can cause fetuses to have a birth defect of the brain called *microcephaly*. Zika virus outbreaks are currently happening in many countries and territories. For up-to-date information about the virus and outbreaks, go to www.cdc.gov/zika.

Symptoms

- Many people won't have symptoms or will have only mild symptoms.
- Symptoms may include fever, rash, joint pain, or red eyes.

Lyme disease is spread by deer ticks.

Deer ticks are tiny, black-brown arachnids about the size of a poppy seed. They are not insects because they have 8 legs (like spiders). Lyme disease is an important health concern in certain regions of the country; the following areas are where most infections occur: Northeast, from Virginia to Maine; north-central states, mostly Wisconsin and Minnesota; and West Coast, particularly northern California.

Symptoms

Often the first and most obvious symptom of Lyme disease is a localized rash that begins as a pink or red circle at the site of tick attachment. This circle expands over time and may become several inches or larger. A classic bull's-eye appearance, with concentric rings, appears in some people. The rash generally occurs 1 to 2 weeks after the tick bite but ranges from 3 days to 30 days.

A rash may occur without any other symptoms or may be associated with

- Headache
- Chills
- Fever
- Fatigue
- Swollen glands, usually in the neck or groin
- Aches and pains in the muscles or joints

If you live in an area of the country endemic to Lyme disease and your child develops a suspicious rash with or without any of these symptoms, call your child's doctor.

Rocky Mountain spotted fever is spread by ticks.

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.

Symptoms

- Most people get a red, dot-like rash that begins on the wrists and ankles and spreads toward the center of the body. The illness may be severe or fatal in some people.
- Other symptoms may include severe headache, fever, muscle aches, nausea, or vomiting.

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

Remember

Children need and love to be outdoors. The chance of your children becoming infected by insects and ticks is quite low. The best way to protect yourself and your children is to follow the guidelines in this publication. If you have any concerns about insect or tick bites, talk with your child's doctor.

From Your Doctor



The American Academy of Pediatrics (AAP) is an organization of 67,000 primary care pediatricians, pediatric medical subspecialists, and pediatric surgical specialists dedicated to the health, safety, and well-being of all infants, children, adolescents, and young adults.

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