

DEET FACTSHEET

There are so many insect repellents out there. What kind is best for my children?

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

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.

What's Available	How Well It Works	How Long it Protects	Special Precautions
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.
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.

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.)

Q. Can insect repellents be used on children?

Repellent products must state any age restriction. If there is none, EPA has not required a restriction on the use of the product.

According to the label, oil of lemon eucalyptus products should NOT be used on CHILDREN UNDER 3 YEARS.

In addition to EPA's decisions about use of products on children, many consumers also look to the opinion of the [American Academy of Pediatrics](#) (AAP). The AAP does have an opinion on the use of DEET in children (see below). AAP has not yet issued specific recommendations or opinion concerning the use of picaridin or oil of lemon eucalyptus for children. CDC will post a link to such information from the Academy when/if it becomes available.

Since it is the most widely available repellent, many people ask about the use of products containing DEET on children. No definitive studies exist in the scientific literature about what concentration of DEET is safe for children. No serious illness has been linked to the use of DEET in children when used according to manufacturer's recommendations.

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.

Parents should choose the type and concentration of repellent to be used by taking into account the amount of time that a child will be outdoors, exposure to mosquitoes, and the risk of mosquito-transmitted disease in the area.

If you are concerned about using repellent products on children you may wish to consult a health care provider for advice or contact the National Pesticide Information Center (NPIC) through their toll-free number, 1-800-858-7378 or <http://npic.orst.edu/>.

Q. What guidelines are available for using a repellent on children?

DOS

- Read the label and follow all directions and precautions.
- Avoid children's eyes and mouth and use it sparingly around their ears.
- Do not apply repellent to children's hands. (Children tend to put their hands in their mouths.)
- 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.

- Do not apply repellent under clothing. If repellent is applied to clothing, wash treated clothing before wearing again. (May vary by product, check label for specific instructions.)
- 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.
- Keep repellents out of reach of children.

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.
- 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.

Q. How else can I protect children from mosquito bites?

A. Using repellents on the skin is not the only way to avoid mosquito bites. Children (and adults) can wear clothing with long pants and long sleeves while outdoors. DEET or other repellents such as permethrin can also be applied to clothing (but is not registered for use on skin), as mosquitoes may bite through thin fabric.

Mosquito netting can be used over infant carriers.

Finally, it may be possible to reduce the number of mosquitoes in the area by getting rid of containers with standing water that provide breeding places for mosquitoes.

Q. Can insect repellents be used by pregnant or nursing women?

Other than the routine precautions noted earlier, EPA does not recommend any additional precautions for using registered repellents on pregnant or lactating women. Consult your health care provider if you have questions.

Q. What are the recommendations for combination sunscreen/insect repellent products?

It is recommended NOT to use a single product that combines insect repellent containing DEET and sunscreen, because the instructions for use of insect repellents and use of sunscreen are different. In most situations, insect repellent does not need to be reapplied as frequently as sunscreen. While no recommendations are available at this time regarding products that combine other active ingredients and sunscreen, it is important to always follow the label on whatever product you are using.

Helpful Links:

<http://www.cdc.gov/westnile/faq/repellent.html>

<http://www.healthychildren.org/English/safety-prevention/at-play/Pages/Insect-Repellents.aspx>