



# Just the Facts: YOUR CHILDREN AND DEET



## *Is DEET in insect repellents safe for children?*

**T**he American Academy of Pediatrics (AAP) Committee on Environmental Health has recently updated their recommendation for use of DEET products on children, citing:

“ Insect repellents containing DEET (*N,N*-diethyl-*m*-toluamide, also known as *N,N*-diethyl-3-methylbenzamide) with a concentration of 10% appear to be as safe as products with a concentration of 30% when used according to the directions on the product labels.

“DEET is not recommended for use on children under 2 months of age.

“The efficacy of DEET plateaus at a concentration of 30%, the maximum concentration recommended for infants and children. The major difference in the efficacy of products relates to their duration of action. Products with concentrations around 10% are effective for periods of approximately two hours. A concentration of about 24% has been shown to provide an average of five hours of protection.

“A prudent approach would be to select the lowest concentration effective for the amount of time spent outdoors. It is generally agreed that DEET should not be applied more than once a day. ”

*(Source: AAP News, June 2003)*

However, 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 the product recommendations.

The AAP and other experts suggest that it is acceptable to apply repellent with low concentrations of DEET to infants over 2 months old. Other guidelines cite that it is acceptable to use repellents containing DEET on children over 2 years of age.

Repellent products that do not contain DEET are not likely to offer the same degree of protection from mosquito bites as products containing DEET. Non-DEET repellents have not necessarily been as thoroughly studied as DEET, and may not be safer for use on children.



*see inside for more information* 

# Just the Facts:

## USE OF INSECT REPELLENTS

### Q. *Why should I use insect (or mosquito) repellent?*

A. Insect repellent helps reduce a person's exposure to mosquito bites that may carry potentially serious viruses such as West Nile virus, and allows a person to continue to play and work outdoors.

### Q. *When should I use insect repellent?*

A. Apply repellent when you are going to be outdoors and will be at risk for getting bitten by mosquitoes. Many of the mosquitoes that carry West Nile virus are especially likely to bite around dusk and dawn. If you are outdoors around these times of the day, it is important to apply repellent. In many parts of the country, there are mosquitoes that also bite during the day. The safest decision is to apply repellent whenever you are outdoors.

### Q. *Which mosquito repellent works the best?*

A. The most effective repellents contain DEET (*N,N*-diethyl-*m*-toluamide), which is an ingredient used to repel pests like mosquitoes and ticks. DEET has been tested against a variety of biting insects and has been shown to be very effective. The more DEET a repellent contains, the longer time it can protect you from mosquito bites. A higher percentage of DEET in a repellent does not mean that your protection is better—just that it will last longer. Choose a repellent that provides protection for the amount of time that you will be outdoors.

| DEET Concentration | Hours of Protection |
|--------------------|---------------------|
| 23.8%              | Average of 5 hours  |
| 20%                | About 4 hours       |
| 6.65%              | About 2 hours       |

### Q. *Why does Fairfax County recommend using DEET?*

A. DEET is the most effective and best-studied insect repellent available. Studies using humans and mosquitoes report that only products containing DEET offer long-lasting protection after a single application.

### Q. *How often should repellent be re-applied?*

A. Follow the directions on the product you are using in order to determine how frequently you need to re-apply

repellent. Sweating, perspiration or getting wet may mean that you need to re-apply repellent more frequently. If you are not being bitten, it is not necessary to re-apply repellent. Repellents containing a higher concentration of active ingredient (*such as DEET*) provide longer-lasting protection. Product labels often indicate the length of time that protection that can be expected from a product.

### Q. *Can I use an insect repellent containing DEET and sunscreen at the same time?*

A. Yes. People can and should use both sunscreen and DEET when they are outdoors to protect their health. Follow the instructions on the package for proper application of each product. Apply sunscreen first, followed by repellent containing DEET. To protect from sun exposure and insect bites, you can also wear long sleeves and long pants. You can also apply insect repellent containing DEET or permethrin to your clothing, rather than directly to your skin.

### Q. *Should I use a combination sunscreen/DEET-based insect repellent?*

A. Because the instructions for safe use of DEET and safe use of sunscreen are different, CDC does not recommend using products that combine DEET with sunscreen. You do not need to re-apply insect repellent every time you re-apply sunscreen. Sunscreen often requires frequent reapplication, so using a combined product is not recommended. Follow the instructions on the package for each product to get the best results.

### Q. *Where can I get more information about repellents?*

A. For more information about using repellents safely please consult the EPA Web site: <http://www.epa.gov/pesticides/citizens/insectrp.htm> or consult the National Pesticide Information Center (NPIC), which is cooperatively sponsored by Oregon State University and the U.S. EPA. NPIC can be reached at: [npic.orst.edu](http://npic.orst.edu) or 1-800-858-7378.

### Q. *Where can I get more information about mosquitoes and West Nile virus in Fairfax County?*

A. County residents can also call the Environmental Health Division of the Fairfax County Health Department at 703-246-2300, TTY 703-591-6435.

# Just the Facts:

## DEET SAFETY

### Q. *Is DEET safe?*

A. Yes, products containing DEET are very safe when used according to the directions. Because DEET is so widely used, a great deal of testing has been done. When manufacturers seek registration with the U.S. Environmental Protection Agency (EPA) for products such as DEET, laboratory testing regarding both short-term and long-term health effects must be carried out. Over the long history of DEET use, very few confirmed incidents of toxic reactions to DEET have occurred when the product is used properly. The rare adverse reactions to DEET have generally occurred in situations where people do not follow the product instructions.

### Q. *What are some general considerations to remember in order to use products containing DEET safely?*

A. Always follow the recommendations appearing on the product label.

- Use enough repellent to cover exposed skin or clothing. Don't apply repellent to skin that is under clothing. Heavy application is not necessary to achieve protection.
- Do not apply repellent to cuts, wounds, or irritated skin.
- After returning indoors, wash treated skin with soap and water.
- Do not spray aerosol or pump products in enclosed areas.
- Do not apply aerosol or pump products directly to your face. Spray your hands and then rub them carefully over the face, avoiding eyes and mouth.

### Q. *Is DEET safe for children?*

A. **YES.** The American Academy of Pediatrics (AAP) Committee on Environmental Health has recently updated their recommendation for use of DEET products on children, citing: "Insect repellents containing DEET (*N,N*-diethyl-*m*-toluamide, also known as *N,N*-diethyl-3-methylbenzamide) with a concentration of 10% appear to be as safe as products with a concentration of 30% when used according to the directions on the product labels." The AAP says insect repellents containing up to 30 percent DEET are safe for use on anyone older than 2 months age.

### Q. *What should parents do?*

A. Parents should choose the type and concentration of

repellent to be used on their children 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. Always follow the recommendations appearing on the product label when using repellent.

- When using repellent on a child, apply it to your own hands and then rub them on your child. Avoid children's eyes and mouth and use it sparingly around their ears.
- Do not apply repellent to children's hands. (*Children may tend to put their hands in their mouths.*)
- Do not allow young children to apply insect repellent to themselves; have an adult do it for them. Keep repellents out of reach of children.
- Do not apply repellent to skin under clothing. If repellent is applied to clothing, wash treated clothing before wearing again.

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 (*don't use permethrin on skin*), as mosquitoes may bite through thin fabric. Mosquito netting can be used over infant carriers.

### Q. *Is DEET safe for pregnant or nursing women?*

A. There are no reported adverse events following use of repellents containing DEET in pregnant or breast-feeding women.

### Q. *Are there any risks due to using repellents containing DEET?*

A. Use of these products may cause skin reactions in rare cases. If you suspect a reaction to this product, discontinue use, wash the treated skin, and call your local poison control center. There is a new national number to reach a Poison Control Center near you: **1-800-222-1222**. If you go to a doctor, take the product with you. Cases of serious reactions to products containing DEET have been related to misuse of the product, such as swallowing, using over broken skin, and using for multiple days without washing skin in between use, for example. Always follow the instructions on the product label.

### Q. *What if I still have concerns about DEET?*

A. Persons who are concerned about using DEET may wish to consult their health care provider for advice. The National Pesticide Information Center (NPIC) can also provide information through a toll-free number, **1-800-858-7378** or **npic.orst.edu**.

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## What should parents do?

**P**arents should choose the type and concentration of repellent to be used on their children 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. Persons who are concerned about using DEET or other products on children may wish to consult their health care provider for advice. The National Pesticide Information Center (NPIC) can also provide information through a toll-free number, **1-800-858-7378** or [npic.orst.edu](http://npic.orst.edu).

Always follow the recommendations appearing on the product label when using insect repellent.

- ✔ When using repellent on a child, apply it to your own hands and then rub them on your child. Avoid children's eyes and mouth and use it sparingly around their ears.
- ✔ Do not apply repellent to children's hands. (*Children may tend to put their hands in their mouths.*)
- ✔ Do not allow young children to apply insect repellent to themselves; have an adult do it for them. Keep repellents out of reach of children.
- ✔ Do not apply repellent to skin under clothing. If repellent is applied to clothing, wash treated clothing before wearing again.

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 (*don't use permethrin 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 the mosquitoes.

### ***If you still have concerns about DEET...***

Persons who are concerned about using DEET may wish to consult their health care provider for advice. The National Pesticide Information Center (NPIC) can also provide information through a toll-free number, **1-800-858-7378** or [npic.orst.edu](http://npic.orst.edu). Parents can also consult a pediatrician, or visit the American Academy of Pediatrics Web site at [www.aap.org](http://www.aap.org).

For more information on mosquitoes and West Nile virus in Fairfax County, call the Environmental Health Division of the Fairfax County Health Department at **703-246-2300**, TTY **703-591-6435**.



**FAIRFAX COUNTY HEALTH DEPARTMENT**  
Division of Environmental Health

**703-246-2300** • TTY 711 • [www.fairfaxcounty.gov/fightthebite](http://www.fairfaxcounty.gov/fightthebite)