



## To DEET or Not to DEET

By Steven F. Hirsch, MD, FAAP

Summer is well underway and the mosquitoes are out in full force. Unfortunately, our children are often so sweet that insects seem immediately attracted to them. Each season brings its own set of challenges, and one question that frequently comes up in my office this time of year is whether or not you should use insect repellants on your children. And if so, which repellant and beginning at what age?

In general, I do recommend the use of insect repellants on children. Understandably, many parents question the need for an insect repellant asking, "What's so bad about an occasional bug bite?" It is true that most of the time an insect bite is simply a nuisance, causing some localized itching and swelling that can be easily managed with over the counter products.

However, when normal bacteria that lives on our skin is introduced under the skin during the actual bite or from scratching, secondary complications such as impetigo and abscesses can develop. Insects can also transmit diseases such as Lyme Disease and Rocky Mountain Spotted Fever.

Note: Though West Nile gets a lot of media attention, fortunately children only have mild illnesses when infected. For example, in 2002 only 130 (about 3% of cases) of the 4156 human West Nile Virus cases were in children and there were no deaths in children.)

For the greatest protection, I recommend using an insect repellant that contains DEET. Developed by the U.S. Department of Agriculture in 1946, DEET products are used by an estimated 200 million people per year. Based on all studies to date, I am confident that, when used appropriately, the benefits of using an insect repellant containing DEET outweigh any potential risks or side effects.

Unlike a conventional pesticide that works by killing an insect or its larvae, DEET is a repellant in that it works by confusing the insect making it unable to land on the host and bite successfully. Female mosquitoes bite people because they need a protein found in your blood to help develop

their eggs. Mosquitoes are attracted to you by your natural skin odors and the carbon dioxide from your breath. DEET works by blocking the insects' smelling sensors. Thus, when you apply DEET, you may notice that the mosquitoes still fly around you but do not land on you.

The American Academy of Pediatrics recommends using DEET products on children over 2 months of age. However, because most infants under 6 months are generally content to stay in their strollers while outdoors, at this age, I prefer to use an inexpensive mosquito net that surrounds the entire stroller during walks rather than an insect repellent. If, however, despite the mosquito net your baby is still getting insect bites, then I will recommend an insect repellent with DEET.

DEET comes in multiple strengths from 5% to 100%. The higher concentrations offer protection for a longer period of time and thus require fewer applications. It is recommended that adults use a repellent with less than 40% DEET and that children use a concentration of less than 20% (preferably under 10%). I usually suggest starting with a lower concentration and then going higher if needed.

Here are some tips for safer and more effective use of repellents:

- Avoid the eyes and mouth. You should also avoid applying repellent to the hands of children who are likely to put their fingers in their mouths.
- Wash off the repellent with soapy water when you return indoors.
- Do not use combined insect repellents and sunscreen products. With a combination product, you will apply either too much repellent to get adequate sun protection or too little sunscreen to limit repellent exposure.
- Do not spray on cuts or wounds.
- Spray repellents in open areas to avoid breathing it in.
- Use just enough to cover your child's clothing and exposed skin.
- Do not spray directly onto your child's face. Spray it on your hands first and then on to the face, avoiding the eyes and mouth.

For parents who are still uncomfortable with DEET, there are other repellent alternatives. In 2005, the CDC recommended other repellents including those with the chemical picardin or with oil of lemon eucalyptus. Though they are thought to be safe and work as well as 10% DEET, long-term follow-up studies are not yet available. Other "natural" insect repellent products include products made from essential oils of plants such as citronella, cedar, eucalyptus, and soybean. These more natural options are less effective than DEET products and work for a

shorter duration of time (less than 2 hours).

Have a safe and relaxing summer, and we'll see you at the park!

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