



A BI-MONTHLY NEWSLETTER OF THE SEBASTOPOL TOXICS EDUCATION PROGRAM

Mosquito Protection Without Toxics

With summer comes warnings about the risks of **West Nile Virus** (WNV), a mosquito-transmitted disease that, in the past few years, has come from Africa to North America.

A very small number of people in the U.S. are infected with WNV each year. Most of these don't develop any symptoms. Those who do usually just experience flu-like symptoms. Less than 1% will develop severe illness. In 2005, there were 3,000 human cases of WNV disease reported, with 119 deaths. No cases of human, animal, or mosquito infection were detected in Sonoma County in 2005.

To avoid this low risk of WNV, people are often advised to use **toxic DEET-based insect repellants**.

But are these toxics really necessary to protect ourselves and our families? Or are they actually risking more harm than WNV? Is this really the best solution?

The Problems with DEET

DEET (N,N-diethyl-meta-toluamide) is the most commonly-used active ingredient in commercial insect repellants. Developed in 1946 by the U.S. Army, about 4 million pounds of DEET are used in the U.S. each year. DEET



is available in many forms, including sprays and lotions, in concentrations from 4% to 100% DEET. Most commercial repellents are 20% DEET.

The EPA says they consider DEET safe for humans, when used according to label directions. Yet even they give serious warnings, such as not spraying it in enclosed areas, near food, on cuts, or on the face; and washing it off when back inside.

These warnings are given because DEET has been linked to skin, eye, and neurological problems. Studies show that DEET can be absorbed through skin and cause toxic reactions, even at relatively low concentrations. It can harm the brain, especially in developing fetuses and young children. Acute reactions can include rashes, blistering, reduced pulse rate, slurred speech, seizures, and DEET-related encephalopathy, a potentially-fatal brain disorder causing convulsions and other neurological reactions. DEET was one of the products linked to veterans' Gulf War Illness in the 1990s.

DEET contains methyl-benzene, a flammable organic solvent which is a form of toluene. DEET is so strong that it dissolves or damages many synthetic plastics and fabrics, including plastic watches and synthetic clothing materials. It was banned, for instance, at Peru's Amazonian Center for Environmental Education and Research, because it speeds the deterioration of the synthetic fibers that hold up the canopy walkway high above the forest floor.

Alternative Repellents

Luckily, there are alternatives without the downsides of DEET.

THANK YOU, CRAIG!

Craig Litwin has supported *The Next STEP* as a member of the Editorial Team since the project debuted in 2001. Sadly, his plate is just too full now and he'll be moving on from his role here. Thanks, Craig, for all your contributions to this community project for a healthier world!

■ **Make your own repellent.** Add essential oils to a carrier oil, lotion, or sunblock. (Most essential oils are too strong to apply to skin undiluted.) Choose eucalyptus essential oil (proven to protect from mosquitoes for 2 hours) or neem oil or extract (proven up to 12 hours; used in India for thousands of years). These are available at Rosemary's Garden and Whole Foods. Or try catnip essential oil (available online); it's shown to be 10 times more effective than DEET. You can also **grow your own catnip** and rub it on your skin.

■ **Buy natural repellents.** The stores above also offer two products based on essential oils: Buzz Away ("Original", shown to work 2.5 hours) and Herbal Armor (proven for 2-3 hours). Also look for these products, based on oils and essential oils: The new Buzz Away Extreme (works for up to 8 hours; judged the most effective natural repellent in a New England Journal of Medicine study); Bite Blocker (effective for 3.5 hours); Botanical Outdoor Gel (with neem and aloe vera) <www.mercola.com/forms/botanical_gel.htm>; and Skeeter-Free (based on catnip) <www.insectrepel.com>.

■ **Avoid wrist bands**, with DEET or citronella; this form is not effective.

Other Preventative Measures

To avoid breeding mosquitoes and help protect birds and other animals:

■ **Remove standing water**, where mosquitoes breed. Unclog gutters, change birdbath water, and clear out buckets, pots, old tires, and ditches.

■ **Keep window screens** in good condition. Replace outdoor lighting with yellow "bug" lights. Improve drainage in areas that hold water.

■ **Encourage mosquito-eating bats and birds** (like swallows) to visit your property by installing appropriately-designed houses. A single

See Mosquitoes, over

Mosquitoes, continued

brown bat nabs 1,200 insects every hour, and assists in plant pollination.

■ **Reduce mosquito larvae in water** with Mosquito Dunk (based on organic-certified and natural Bt).

Note: Some experts recommend mosquito fish to help control mosquitoes. However, others caution that these also eat native mosquito predators, such as larval and adult forms of the chorus frog and dragonflies.

■ **Avoid mosquitoes** by wearing long-sleeves and pants and staying inside around dawn and dusk, when mosquitoes are most active. Consider mosquito netting for infant carriers.

If You're Considering Using DEET

■ **Only use DEET** when there's a known insect problem nearby and you feel its use is worth the risks.

■ **Read and follow all product directions strictly.** Don't overapply.

■ **Don't allow children to apply.** Swallowing DEET-based repellants can be fatal, and if they get it on their hands, they can put it in their mouths.

■ **Use products with lower DEET concentrations.** Keep children's under 15% DEET.

■ **Apply cautiously.** Use modest amounts. Only apply to exposed skin, not under clothes. Don't apply to cuts or irritated skin. Don't spray near food, in enclosed areas, or directly on your face. (Spray on hands and rub on face, avoiding eyes and mouth.)

■ **Wash repellent off with soap after returning inside.** It accumulates on skin, increasing the dose; remains on clothing for up to two weeks after use; and can be absorbed from clothing back onto the skin.

~ Patricia Dines

SOURCES: West Nile Virus <www.sonoma-county.org/health/ph/phpreparedness/wnv> and <<http://westnile.ca.gov>> • Centers for Disease Control <www.cdc.gov/NCIDOD/DVBID/westnile/qa/insect_repellent.htm> • "Bug Off", *Natural Taste*, Aug. 2004 • "Gulf War Syndrome Linked to Flea Collars, Deet," *Global Pesticide Campaigner*, March 1997 <www.panna.org/resources/pestis/PESTIS.1997.35.html> • "Ways to Beat DEET," *Pesticide Action Network* <www.panna.org/resources/documents/waysToBeatDEET.dv.html>

Natural Cleaners Go Mainstream

Natural home cleaners are not just at health food stores any more. As happened with organic foods, mainstream stores have seen consumer demand for healthier cleaners and are increasingly bringing them onto their own shelves. This includes non-toxic and environmentally-safe laundry detergents, dishwashing liquids, and general home cleaners.

"If you're in any industry and one segment of that industry is growing at double digits and the rest of the industry is flat, then it's only a matter of time before people start to pay attention," said Rick Werner, director of grocery at Wild Oats.

Cleaning product sales at Wild Oats are up 20% since last year, according to Werner. John Vlahakis, President of Earth Friendly Products (which makes products such as Ecos laundry detergent), says interest from traditional retailers has risen substantially, as consumers focus more on health and wellness.

"Perceptions are changing... You're not just getting the granola eaters," he says. Also, "price points are coming down that are making it a lot more accessible for the majority of Americans."

While this increased popularity is good in many ways, it does bring added risks of "greenwashing," where products represent themselves as more "green" than they really are.

So, especially if you buy products at a mainstream store, be sure to read the back label to clarify what the product actually offers. Is it specific about what makes it healthy or environmental? Does it list the ingredients? Do they seem natural? This can help you be sure you really are buying something healthier for your family and the earth.

SOURCE: "Natural Household Items Get Mainstream Attention," *Jessica Wohl*, Reuters, June 2, 2006



What's Hiding Inside?

Want to know more about what's in your mainstream household cleaning product – and its toxicity?

Unfortunately, even though ingredients can be quite toxic, they're not required to be listed on the label.

However, you can find out more on a handy website from the National Institutes of Health <www.HouseholdProducts.nlm.nih.gov>. Enter your product name and get a list of the ingredients. Click on each to find out more, including warnings, usage instructions, and health risks. You can also access information by entering a particular ingredient and/or health symptom. (The latter is under the "MSDS" tab.)

Note that this website's information is based on Materials Safety Data Sheets (MSDS), so it only includes acute (immediate) health problems, not chronic (long-term) ones, like cancer. Still, it can get you started on knowing what's inside.

Or, you can keep things simple and buy the many natural products available – or make your own. For more about common household toxics and alternatives, see <<http://es.epa.gov/techinfo/facts/safe-fs.html>>. For more about homemade cleaners, see <www.healthyworld.org/STEPIndex.html>

ABOUT STEP

The Next STEP (TNS) is published six times a year by the **Sebastopol Toxics Education Program** (STEP). **STEP is a project of the City of Sebastopol**, implemented by local citizen volunteers. **STEP's mission** is to support city residents in reducing their toxic use and exposure, creating a healthier and safer Sebastopol for everyone.

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