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THE NEXT STEP

Toward a Healthier Future

A BI-MONTHLY NEWSLETTER OF THE SEBASTOPOL TOXICS EDUCATION PROGRAM

Preventing Those Neurotoxic Blues

When challenged by an insect problem (like ants!), it can be tempting to just reach for a can of that toxic bug spray.

However, doing so can put your own health at risk. That's because many insecticides work by harming an insect's neurological systems — and our systems are similar to insects' in some essential ways.

For instance, one class of commonly-used insecticides, organophosphates (or OPs), works by blocking the enzyme acetylcholinesterase (AChE). Key to the transmission of nerve signals, this enzyme keeps the neuron pathways clear. When AChE is blocked in an insect, nerve function gets stopped and the insect has a seizure and dies.

Unfortunately, the human nervous system use this same enzyme, so **our exposure to OPs can also result in a wide range of acute (immediate) health effects**, including: headaches, dizziness, nausea, excessive sweating, twitching, tremors, muscle weakness, incoordination, cramping, blurred vision, heart irregularities, convulsions, paralysis, and respiratory failure.

OPs can also produce effects that one might not expect from a pesticide, **including emotional and cognitive changes**, memory impairment, confusion, lethargy, anxiety, irritability, depression, symptoms that resemble alcohol intoxication — even uncharacteristic aggression and violence!

Children are especially vulnerable to OPs, which can harm their development, hand/eye coordination, short-term memory, learning ability, and physical stamina.

Studies have also found correlations between pesticide exposure and **chronic neurological diseases like Parkinson's Disease** (see previous TNS issues). Health effects can be the result of one exposure or ongoing exposures. OPs can also be stored in body fat and released later.

OPs are also often toxic to non-target vertebrate animals including fish, birds, lizards, and mammals — like household pets.

Unfortunately, because these pesticides are so commonly used, **we can be exposed in a variety of settings and not even know it**, including at work, shops, and parks, and through our food. People can have health problems as a result but not realize that there's a connection.

To protect yourself and your family, avoid using toxic insecticides in your home and work; eat organic food; and encourage reduced use of toxics in your community, including in shared spaces and local farms.

If you're having neurological symptoms, see if they occur soon after being in a certain place. **If poisoning is suspected, and you want to work with a doctor, find one trained in pesticide diagnosis.** (Most doctors are not and thus can inadvertently misdiagnose and mistreat a patient's symptoms.)

For more information, see the resources listed below. The first two items are free reference books for health professionals.

~ Patricia Dines

SOURCES: Recognition and Management of Pesticide Poisonings (Environmental Protection Agency. Free. Call (800) 490-9198 and ask for 735-R-98-003.) Pesticides & Human Health: A Resource for Health Care Professionals (Physicians for Social Responsibility. Free. <www.pesticidereform.org/article.php?id=7>). Toxics A to Z (John Harte, et al). Staying Well in a Toxic World (Lynn Lawson).

Green Air Fresheners

Green plants in your house can be more than natural decoration. They can help clean your air!

Extensive tests by Bill Wolverton, a retired NASA researcher, show that certain **plants can help reduce the toxics in the air**, including formaldehyde, benzene, and trichloroethylene.

Our houses can contain pollutants from a wide variety of sources, including cleaning products, carpeting, furniture, dry-cleaned clothes, and chemicals we bring in on our shoes and other clothing. EPA studies show that pollutant levels indoors are often 5-70 times higher than outdoors.

Certain plants naturally absorb and break down these pollutants. In one of Wolverton's studies, plants removed 99% of a room's formaldehyde in just four hours.

The best pollution-busting plants include **Boston fern, date palm**, **bamboo palm**, **English Ivy**, **weeping fig**, **peace lily**, **areca palm**, **corn plant**, **the lady palm**, **spider plants**, and **philodendron**. Wolverton recommends about two to three plants per 100 square feet. Try placing them where air circulates.

You might want to avoid plants with flowers, since the pollen might trigger allergies. Also, damp dirt can breed mold and mildew, so consider sprinkling some aquarium gravel onto the soil to keep the air even cleaner.

SOURCE: Alternative Medicine, June 2003, Page 136.

Is Toxic Wood Lurking in Your Back Yard?

Do you have a picnic table, deck, play structure, fence, garden bed, or other structure made from **pressure-treated wood**? If it was made before January 2004, it was likely treated with the toxic **Chromated Copper Arsenate** (CCA).

Two key components of CCA, arsenic and chromium, are on the U.S. EPA's Top 20 Hazardous Substances list. Arsenic is a potent skin, bladder, and lung carcinogen. It's also been linked to immune system suppression and cardiovascular disease.

Unfortunately, CCA leaches when exposed to sun and moisture, thus risking exposing any people or animals who touch the wood or the soil below it. Amazingly, a 2"x6"x12" CCA-treated board contains enough arsenic to kill 250 adults!

After CCA's liabilities became evident, **CCA was pulled from residential use** as of Jan. 2004. Still, the risks remain at existing installations.

Luckily, there are ways you can protect yourself and your family, including sealing the wood before the rainy season.

Is Your Wood CCA?

CCA wood has a greenish-grey color and, on thicker boards, puncture marks to help the CCA's absorption. To confirm it's CCA, and identify the levels, you can buy inexpensive wood and soil test kits (for instance, at <www.safe2play.org>.)

Who's At Risk?

■ **Anyone** who touches CCA-treated wood, or the soil below it, is likely to be exposed to arsenic.

■ **Children** are especially at risk. They can play on CCA decks and play sets then put their hands (and arsenic) into their mouths. This adds up over time, leading to possible health problems now and later in life.

■ **Pets** basking in the sun on their CCA decks (or sheltering underneath) will likely get CCA on their fur, then ingest it when grooming themselves.

■ **Anyone who is near the sawing or sanding** of CCA wood risks exposure by breathing particles or having them enter the eye or mouth.

■ **Anyone breathing smoke from burning CCA lumber** is inhaling toxic fumes; this has been associated with serious arsenic poisoning.

■ **The environment at large** is receiving tons of this toxic as it leaches out of the wood and into the ground. From there it disperses into the groundwater, surface waters, vegetation, and animals. Groundwater contamination is a major concern.

How to Minimize Your Risk

■ **Wash your hands** after touching CCA wood, especially before eating or smoking. Make sure kids wash up and minimize their hand-to-mouth behavior after any contact.

■ **Use a tablecloth** on CCA-treated tables. Never let food come in contact with the wood.

■ **Seal the wood** to reduce the amount of dislodgeable arsenic on the surface and slow its release into the environment. The EPA suggests resealing every year. You might seal more frequently in high-traffic areas like stairs.

In 2006, the EPA will release the findings of a two-year study to determine the best sealants. From their preliminary findings, they recommend using a product that penetrates (like a water-based or oil-based acrylic) and *not* one that creates a film (like a paint), because the arsenic can rise into the film and move when chipped. Do not use acid-based washes.

■ **Work with CCA wood outside and wear gloves**. Use goggles and a dust mask when sawing and sanding. Dispose of sawdust and leftover scraps in the municipal waste. Don't burn, compost, or use scraps in mulch. Wash clothes separately.

■ **For garden beds of CCA** lumber, put a plastic sheeting barrier between the wood and soil, and plant food crops at least 15" from the wood, to reduce the arsenic absorbed.

■ **Protect your pets.** Don't use CCA wood for their sleeping area, scratching post, or to store or serve pet food.

■ **Consider replacing heavily-used pieces**, such as stairs, with a safer material.

CCA Alternatives

When choosing wood for playgrounds, decks, picnic tables, or similar structures, **avoid those with toxic treatments**, including creosote and pentachlorophenol (PCP).

Instead, **choose less-toxic treatments**, like ammoniacal copper quaternary (ACQ) or copper boron azole (CBA). Also consider **naturally decay-resistant woods** (like redwood, cedar, hemlock, and juniper), and composite lumbers, concrete, metal, and (non-PVC) plastics.

For More Information

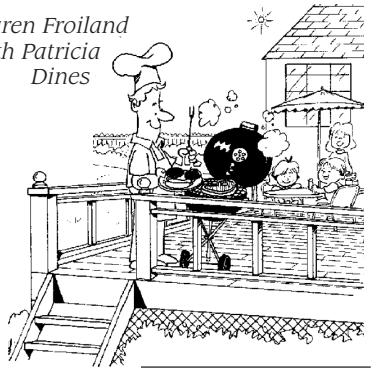
Online health resource for consumers <www.bancca.org>

EPA <www.epa.gov/oppad001/reregistration/cca/index.htm>

Watchdog organization <www.beyondpesticides.org/wood>

Smoking gun report <www.bancca.org/CCA_article5/smokinggunreport.htm>

~ Karen Froiland with Patricia Dines



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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