

Poison Playgrounds

An investigation into wood treated with CCA

The Environmental Protection Agency (EPA) has chosen to allow children to play with arsenic. Chromated copper arsenate (CCA) is a wood preserving pesticide registered for use by EPA. Scientific studies prove that the three chemicals that make up CCA, namely arsenic, hexavalent chromium (chromium (VI)) and copper, are leaching out of CCA-treated wood into the soil and onto the surface of the wood.¹ EPA classifies both arsenic and chromium (VI) as “known human carcinogens.”² Scientists have documented that kids put their hands into everything including their mouths;³ but of course, parents already know this. When you add all this together the outcome is clear, children’s health is at risk because they are ingesting arsenic and chromium (VI) leaching from CCA-treated playground equipment.

A number of media outlets have been conducting soil and surface wipe samples of CCA-treated playground sets in their communities and the findings are always the same: arsenic is leaching out of CCA-treated playground equipment. The *St. Petersburg Times* in Florida first reported on this problem back in March of 2001 with Julie Hauserman’s special report, *The Poison in Your Back Yard*.⁴ After the story broke, the State of Florida closed down a number of parks and removed CCA-treated playground equipment and the soil contaminated with arsenic as a safety precaution.

In May of 2001, Fox 5 News in Washington, DC took soil samples from underneath a variety of CCA-treated wood structures including a deck, a vegetable garden, and local playgrounds. In each case, with the exception of the playground that was not constructed of CCA-treated wood, Fox 5 reported highly elevated levels of arsenic in the soil, between four to nine times higher than average background levels. Also in May, King 5 News in Seattle, WA, sampled soil near pentachlorophenol-treated utility poles and found that in every case pentachlorophenol had leached out of the wood.⁵

Despite these extremely high levels, EPA officials have been strangely silent and have not recommended immediate action. Industry scientists dismiss the findings or call for more studies. The exposure and risk continue even though alternative materials, such as recycled plastics and steel, and other less toxic preservatives are available.

Transcribed below is the Fox 5 News piece *Poison Playgrounds: CCA Wood Investigation*. Beyond Pesticides strongly encourages everyone to contact their local media outlets and urge them to conduct the same kind of investigation. With the national spotlight focused on the hazards of CCA and EPA’s ongoing risk assessment of the heavy-duty wood preservatives (see story on page 13), the iron is hot and it is time to strike. For a copy of a video containing the reports from Washington and Seattle, as well as the Twin Cities, MN, contact Beyond Pesticides; tapes are available for \$10 each.



Fox 5 News at 10:00 pm May 7, 2001

Mike Landess (Fox 5 Anchor): A treatment to preserve this wood could be toxic for your family. Almost all the wood that Americans use to build outdoor projects is made with pressure treated lumber.

Tracey Neale (Fox 5 Anchor): The treatment keeps the wood from rotting but the chemicals used are dangerous. Chromium, copper, even arsenic. And they can be linked to serious medical problems. Tonight, a Fox 5 investigation - Poison Playgrounds. Melanie Alnwick is live in Northwest [DC] with the story. Melanie.

Melanie Alnwick (Fox 5 Reporter): Friendship Turtle park here in Northwest [DC] is just one of the places we got positive test results for arsenic. But it’s not just in playgrounds. You can find it in decks, picnic tables, even in planter boxes as you said, and just about any outdoor wood product that you might have will have those chemicals in it. And some say what you aren’t told about pressure treated wood can hurt you.

These are the sights and sounds of spring. Home improvement projects are in full swing, lumber is flying off the shelves in home improvement stores.

Carol Frysiek (Purchaser of CCA-treated wood): I was just looking for the wood to build a vegetable garden.

Melanie Alnwick: Most of the wood used for projects like home gardens is pressure treated. In fact, six and a half billion board feet of this stuff makes its way into backyards, decks, picnic tables and playgrounds every year. Pressure-treatment makes weak pine stronger so it can withstand decay from weather, fungus and insects. That’s good, but that’s not the whole story. Pres-

sure-treated means the wood is pumped full of chemicals and pesticides – chromium, copper and arsenic. It's called CCA.

Jay Feldman (Executive Director, Beyond Pesticides): The chemicals that are out there are exceedingly toxic.

Melanie Alwick: Those chemicals are known to cause cancer, neurological and reproductive problems, and can be toxic to unborn babies. Attorney David McGray represents clients who have been sickened by CCA-treated wood. He says people should be told a lot more about its dangers.

David McGray (Attorney): A stamp on the wood, which states, "Warning", big words, "Warning. This wood contains chromium, copper and arsenic." People need to know that.

Melanie Alwick: Children are constantly exposed to pressure-treated wood and the problem isn't just the wood. The dangerous chemicals often seep into soils around playgrounds and decks made from CCA lumber. That's been documented in several states including Connecticut, where the health department has issued this warning: "Exposure from CCA-treated wood can be the major source of arsenic for children who frequently play on CCA-treated playscapes, tree houses or decks."

Arsenic from treated wood was also found in Florida, prompting authorities there to close some playgrounds and even state parks until the soil could be cleaned up, or the tainted structures removed. The problems in those states made us wonder if there could be a problem here, in the Washington area. We decided to investigate to find out if you and your kids are being exposed. We collected samples from playgrounds, decks and gardens in Virginia, Maryland, and the District, and then we sent them to a lab in Pennsylvania for testing. Dr. Elizabeth Anderson, founder and former director of the EPA risk assessment program examined the results for us.

Elizabeth Anderson, Ph.D. (President and CEO, Sciences International, Inc.): You have some interesting spot checks. We have data points that are high. They're higher than some background data points.

Melanie Alwick: Arsenic is naturally found in soil. Its levels vary across the country. The U.S. Geological Survey says that the national average for arsenic levels in soil is 7.2 ppm.

So, what did we find? Let's start with this Arlington [VA] home. The arsenic levels in the soil around this pressure-treated deck measure more than 63 ppm. Nearly 9 times higher than the national average.

You would think an organic garden would be healthy. We tested this one in Ashburg, Virginia. The results? More than 54 ppm, seven and a half times higher than the national average.

Jeff Gustafson (owner of garden): The girls eat a lot of raspberries. We have raspberries and blueberries and this is rhubarb, and tomatoes.

Melanie Alwick: Scary, but Dr. Anderson says chances the arsenic will seep into the vegetables is low. But still, Jeff Gustafson isn't taking any chances.



Friendship Turtle Park, Washington, DC.

Jeff Gustafson: Sure, I'll think twice about it now. You can tear it all out and redo it.

Melanie Alwick: At Friendship Park in Northwest DC, which proudly bears this sign, "One of the areas best playgrounds," arsenic in our sample was nearly 39 ppm, over five times above the national average.

It's a similar story in Maryland. In Cabin John Regional Park, we found 27 ppm, almost 4 times above average.

Jan Golden (playground patron): That's a little scary. Thankfully my children are a little bit older and not everything is going into their mouths. If I had little ones I would hesitate.

Melanie Alwick: Finally, Willard Park in Chevy Chase [MD] – only 1.38 ppm. Why so low? Hard to say scientifically, but the playground manufacturer did tell us they don't use arsenic in the wood treating process.

Elizabeth Anderson, Ph.D.: I don't think we have the data right now in these data points to say that parents should be overwhelmingly concerned about this particular issue, although it is something that should be looked into, and it should be investigated.

Melanie Alwick: While it might seem that CCA-treated wood is everywhere, there are some notable places you won't find it, like here in any of the animal exhibits at the National Zoo. Alternatively-treated wood is used everywhere else, like on this foot bridge on the way to the Amazon exhibit.

Curator with National Zoo: After a period of time, our staff concluded they'd prefer to use the pressure-treated wood that doesn't have the arsenic in it, just because it's in the best interest of our animals.

Melanie Alnwick: Curators at several zoos nationwide feel the same way. So do the people here at Disney's Animal Kingdom. They too refuse to use CCA-treated wood.

The problem isn't just getting attention in our country. CCA-treated wood is banned in three countries [Switzerland, Vietnam, and Indonesia] and there are restrictions or proposed restrictions on it in six others [Sweden, Denmark, Germany, Japan, Australia, and New Zealand]. No such restrictions, however, exist in our county.

Jay Feldman: How can we be sure that the kinds of cancer we're experiencing, the elevated rates of breast cancer, of prostate cancer, of childhood leukemia are not tied back to this chemical that is in the environment. It is in our homes, around our homes and in our schoolyards.

Melanie Alnwick: The EPA considered banning CCA in 1984 because of the health risks. Despite that, the EPA stopped short, deciding that the benefits of CCA-treated wood outweighed the risks. The government and the companies that make CCA-treated wood decided to implement a voluntary consumer awareness program. But that doesn't always happen.

Carol Frysiak (Purchaser of CCA-treated wood): Nobody asked me or told me anything about it.

Melanie Alnwick: Now EPA guidelines say there should be prominently displayed placards where you buy the wood and consumer information sheets available that say exposure may present certain hazards, and warn people to use protective gloves, eye goggles and dust masks when cutting or handling the wood, to wash exposed areas thoroughly after working with it and to wash sawdust-laden clothes separately.

Carol Frysiak: That's amazing. I didn't know that. And I have built decks before and sawed it, and did not know any of that.

Melanie Alnwick: We went in search of those consumer information sheets at local home improvement stores. They are here, but you'd never know it - on the back of these lumber labels buried in stacks of two by fours. And many employees don't even know where to find them.

Employee at home improvement store: OK, let me find one. What was it called again?

Melanie Alnwick: If you know what to ask, you can get more information.

Employee at home improvement store: Don't use that in a planter box for edible things, 'cause it's got arsenic in it.

Melanie Alnwick: The EPA admits the program isn't working. And though officials refuse to go on camera, the agency did tell Fox 5 that the agency is looking at ways to make consumer information mandatory.

Scott Ramminger (President, American Wood Preservers Institute): Sure I think a better job could be done on it.

Melanie Alnwick: Even the people who make CCA-treated wood admit consumers often don't get the information they need. But they say CCA is perfectly safe.

Scott Ramminger: You just won't find any studies that question the safety of this product.

Melanie Alnwick: In fact, the American Wood Preservers Institute claims CCA-treated wood is actually better for the environment.

Scott Ramminger: It reduces the need to cut down more trees because obviously if you're building things out of untreated wood, they would rot, they would need to be replaced, so it saves trees, it saves energy.

Melanie Alnwick: But others believe the savings just aren't worth it.

Jay Feldman: From the standpoint of a child, playing on a piece of playground equipment and being exposed to a carcinogen, we don't view that as an acceptable risk.

Melanie Alnwick: In the meantime, the decks are going up, the playgrounds are pulsing with kids and most are completely unaware of what's in the wood they're on.

Now, there are alternatives to CCA-treated wood, like recycled composites. There's even a pressure-treatment process that doesn't use arsenic in it. But it's a little harder to find. A lot of stores say that there really isn't a wide consumer demand for it yet.

Now, what can you do if you already have a deck or playground made with pressure-treated wood? Experts say that you can seal it. In fact, the state of California now requires all of the schools to seal their wood playgrounds every two years.

We're live in Northwest, I'm Melanie Alnwick with Fox 5 news.

Tracey Neale (Fox 5 Anchor): Melanie, speaking of consumers, this week the EPA will meet with environmentalists and industry experts to discuss shortcomings of the consumer awareness program.



Arsenic on the Surface of the CCA-Treated Wood Poses Extreme Risks to Children

Many studies have established that arsenic leaches out of CCA-treated playground sets onto the surface of the wood. This is called dislodgeable arsenic and children pick it up on their hands from touching the wood. Studies have established that children regularly stick their hands and other objects into their mouths.¹

Stephen Roberts, Ph.D., with the University of Florida's Center for Environmental and Human Toxicology, conducted an analysis of three formal assessments of risk resulting from dislodgeable arsenic exposure through direct contact with CCA-treated wood.² As part of that analysis, Dr. Roberts calculated the risk of cancer, based on EPA's oral cancer slope factor for arsenic,³ associated with a range of levels of dislodgeable arsenic, assuming daily exposure for five years (see Table 1). EPA has determined that a chemical that causes no more than one additional case of cancer in one million people (expressed as 1×10^{-6}) represents an acceptable risk. Table 2. lists the results of surface wipe samples reported in Dr. Roberts' analysis. These data show that children face a real and significant risk of cancer from simply touching CCA-treated wood and ingesting the arsenic via hand to mouth contact.

Table 1.
Cancer risks and daily doses associated with exposure to CCA-treated wood with different levels of dislodgeable arsenic (Roberts, 2001)

Dislodgeable arsenic (mg/100 cm ²)	Dose (mg/day)	Cancer risk
1	0.76	4.22×10^{-6}
10	7.60	4.22×10^{-5}
25	18.90	1.06×10^{-4}
35	26.70	1.48×10^{-4}
50	38.10	2.11×10^{-4}
100	76.00	4.22×10^{-4}
250	191.00	1.06×10^{-3}
632	482.00	2.67×10^{-3}

Table 2.
Levels of Dislodgeable Arsenic Measured in Surface Wipe Tests

Study Cited by Roberts	Maximum Level of Dislodgeable Arsenic (mg/100 cm ²)
Department of Health Services of State of California (1987)	250.0
Consumer Product Safety Commission (1990)	32.1
Department of Analytic Chemistry for the State of Connecticut (1998)	632.0

¹ See for example, Zartarian, V.G. et al. 1997. Quantified Dermal Activity Data From A Four-Child Pilot Field Study. *Journal of Exposure Analysis and Environmental Epidemiology*. 7(4): 543-552.

² Roberts, S.M. and H.O. Ochoa. 2001. Letter dated April 10, 2001, addressed to John Ruddell, Director, Division of Solid Waste with Florida Department of Environmental Protection.

³ EPA's oral cancer slope factor for arsenic is 1.5 per mg/kg-day. The slope factor is the result of application of a low-dose extrapolation procedure and is presented as the risk per (mg/kg)/day. See EPA's IRIS: Arsenic, inorganic. <http://www.epa.gov/iris/subst/0278.htm#I.A>.

¹ See for example Stilwell, D. 1999. Arsenic in Pressure Treated Wood. Department of Analytical Chemistry, The Connecticut Agricultural Experiment Station. <http://www.caes.state.ct.us/PlantScienceDay/1999PSD/arsenic99.htm>.

² Environmental Protection Agency. 1998. Integrated Risk Information System: Arsenic, inorganic. <http://www.epa.gov/iris/subst/0278.htm#II>. and EPA. 1998. Integrated Risk Information System: Chromium (VI). <http://www.epa.gov/iris/subst/0144.htm#II>.

³ See for example, Zartarian, V.G., A.C. Ferguson, and J.O. Leckie. 1997. Quantified Dermal Activity Data From a Four-Child Pilot Field Study. *Journal of Exposure Analysis and Environmental Epidemiology*. 7(4): 543-552.

⁴ All of the *St. Petersburg Times* articles are available on their website: <http://www.sptimes.com/News/webspecials/arsenic/>.

⁵ Miller, S. 2001. KING 5 Special Report: Are power poles poisoning the ground around them? <http://www.king5.com/localnews/specialreportsdetail.html?StoryID=18737>.