The hidden danger in your deck: millions of American homes have decks treated with arsenic to prevent rot. But that poison can make you very sick. One family's nightmare ... and how to keep your family safe.(Family time)

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Good Housekeeping in the middle of a hot August night in 2002, Tessa Lafantaisie, then 6, "forgot how to talk," says her mom, Michele, who found her daughter babbling nonsensically in bed. "Tessa was repeating, 'Mama, da, da, da, da, da, like a baby," Michele remembers. And this is a child who learned to read before she even got to school.

Tessa's speech returned by the next morning, but Michele and her husband, Barry, both 41 at the time, were terrified. The whole family had been sick for weeks with a combination of nausea, diarrhea, dizziness, and burning eyes and throats. They'd visited multiple doctors, but none had been able to help. "We all had terrible coughs," says Michele. "Our hands and feet started burning and going numb, and I was so exhausted, I felt like a truck had hit me." Tessa also developed a rash, and her loss of speech was quickly followed by a series of frightening seizures, one after the other.

It would take months for Michele and Barry to figure it out, but these apparently random symptoms were "classic signs of acute arsenic poisoning," says William A. Croft, Ph.D., a medical pathologist and former professor at the University of Wisconsin's School of Medicine. The source of the poison couldn't have seemed more innocuous: a brand-new outdoor deck built for the Lafantaisies' home, in Ottawa, ONT, from the same kind of lumber then found in 90 percent of similar wooden structures across North America.

Take a walk around your neighborhood, park, or local campsite--the lumber you see in decks, playgrounds, and picnic tables is probably treated with chromated copper arsenate (CCA), usually recognizable by a greenish tinge. (It can also be dyed other colors and often looks light gray as it ages.) The lumber is made by soaking boards in a high-pressure tank filled with water and huge quantities of chromium, copper, and arsenic; the three heavy metals permeate the wood, making it resistant to bugs, bacteria, and rot.

But what kills bugs can be toxic for people too. Arsenic is a notoriously poisonous chemical element, and exposure has been proven to cause everything from cancer to brain damage to death. Chromium can be another powerful poison; it's the element that contaminated a town's drinking water in the movie Erin Brockovich, which was based on a true story. Though CCA wood used to be available at Home Depot, Lowe's, and similar stores, the lumber industry stopped manufacturing it for the residential market in December 2003, after safety assessments had been started by both the U.S. Consumer Product Safety Commission (CPSC) and the Environmental Protection Agency (EPA). Most of the wood now sold is treated with new, copper-based formulas that so far appear to be safer for humans.

But the problem of CCA wood hasn't gone away. The U.S. government never demanded the removal of existing CCA structures, and almost 70 million American homes are estimated to still have a deck or porch built from it. That's not all: The wood can still be found in public playground equipment, and it's available for industrial uses such as telephone poles and piers. All of which makes for an ongoing health risk. "Arsenic continues to leach out of wood for decades," explains Stuart Shalat, Sc.D., a professor at the Environmental and Occupational Health Sciences Institute at Rutgers University. "The government is de-emphasizing the issue because they feel the voluntary actions of the lumber industry were sufficient. But, in fact, this wood will be a health hazard for generations to come."

A supersize poison dose

The Lafantaisies suffered from acute and chronic arsenic poisoning, says Dr. Croft, as a result of exposure to the wood from their deck. As for why the family's symptoms were so severe, a report from the Sierra Club of Canada suggests that the deck was built from spruce that may have been too green and sap-filled to hold in all the CCA. Because the wood didn't retain the chemicals well, every time it rained, the deck oozed poisonous green liquid. It wasn't just the family who was exposed to high doses of arsenic and chromium; Michele recalls that almost everyone who visited their house during that time "came down with a headache or felt sick." That led the Lafantaisies to wonder if their new central air-conditioning system was malfunctioning. It was the air conditioner repairman who tipped them off to the chemical problem, when he crawled under the deck to check the unit and saw the green puddles. "The repairman said, 'Your AC is fine, but what about your deck? I can see chemicals leaking out of the wood,'" Michele remembers. "That's when we knew."

At that point, Michele was referred to Dr. Croft, who visited the Lafantaisies for an evaluation. "As soon as I stepped into their home, I could taste the arsenic in the air," he says. "It made your tongue burn and left a metallic taste in your mouth." A slew of experts from government agencies, the Sierra Club, and the home-repair chain that sold the family the wood also traipsed through the house; when they tested the deck, they found extremely high arsenic levels on the wood and in sap and rainwater that had collected on the deck. The deck was condemned as a health hazard by Dr. Croft and by a top municipal health official, and it was eventually removed.

Why kids are vulnerable

Arsenic poisoning poses a greater threat to children than to adults because kids' developing brains are much more susceptible to poisons and their longer life spans mean there is more time for associated diseases to develop. In addition, "kids' skin is much thinner than adults', so arsenic can be absorbed much more easily," explains Philip J. Landrigan, M.D., professor of pediatrics at Mount Sinai School of Medicine in New York City. Chronic exposure to arsenic--even in low doses--can significantly increase your child's risk for bladder, lung, or skin cancer, he says.

But cancer may be only one of a number of threats resulting from childhood chemical exposure. In a study published last November in the prestigious medical journal The Lancet, Dr. Landrigan included arsenic and chromium on a list of 202 industrial chemicals he believes are contributing to a worldwide "silent pandemic" of brain damage and neurodevelopmental disorders such as autism, attention deficit disorder, and mental retardation. Of the 202, arsenic "is very high up there in terms of concern," Dr. Landrigan notes. "It's widely used, and it's toxic. Kids shouldn't be exposed to it."

While Dr. Landrigan's study didn't look at wood structures specifically, the EPA has issued a draft preliminary report looking at the possible cancer threat posed to children by the CCA wood still in use. According to one environmental watchdog group, the data suggests that as many as 90 percent of American children face an unacceptable lifetime cancer risk from CCA wood.

Getting angry

"The ironic thing is we built the deck to keep Tessa safe," Michele says now. The Lafantaisies' property was sandwiched between a street and a river, and Barry and Michele had hired a contractor to add the deck off their living room so Tessa would have a secure place to play outside. They even set up her dollhouse there, and Tessa spent most of that summer playing on the deck while Michele watered plants or fixed dinner.

That was also the summer Tessa lost her front tooth, after weeks of wiggling it around in her mouth. "That tooth became my nightmare," says Michele, who realized that whenever Tessa had put her hands in her mouth, she was directly exposing herself to the arsenic. Michele, a science writer, seesawed between anger and guilt as she continued to learn about the threat to her family. "I was furious, and to be honest, I felt stupid," she says. She and Barry, a chef, had always tried to limit their family's exposure to pesticides by buying organic food. "I felt guilty that I hadn't known about this, that I hadn't protected us. Then I was angry at the store and at the government for not telling us about these risks." The Lafantaisies filed a lawsuit against the home-repair chain, the details of which they can't discuss.

For its part, the lumber industry continues to dispute the claims about health risks from CCA. "There is a lot of misinformation and media hype saying the wood was dangerous, causing consumers to become concerned about a threat that did not exist," says Jim Hale, executive director of the Wood Preservative Science Council (WPSC), a trade association of pressure-treated wood manufacturers. "The EPA and the CPSC never took regulatory action against us. We responded to the market's demand and came up with alternatives to CCA, but the scientific research demonstrates strongly that recreational exposure to CCA wood is not a health risk." Hale points to research by Daniel C. West, M.D., a pediatric oncologist at the University of California, Davis, which suggests there was no increase in arsenic-related cancer rates after the introduction of the wood in the 1970s. "There are a lot of things parents need to worry about to keep their kids from getting cancer, like making sure they wear sunscreen and don't smoke," says Dr. West, who has served as a consultant for the WPSC but received no industry funding for his research. "I don't see CCA-treated wood as one of those things."

Most scientists agree that research is limited, in part because cancers that take 20 years to develop are difficult to trace back to childhood exposures. But the majority of experts interviewed for this article say that the exposure many kids are getting today is a very real health risk. "Just like you don't get lung cancer after smoking your first cigarette, you don't see cancer develop immediately after touching CCA wood," explains Dr. Landrigan. "And that can make pinpointing the cause very difficult." Yet some experts wonder why parents would accept any risk at all. "We know enough to know that arsenic isn't doing your child any good," says Dr. Shalat. "It makes more sense to be precautionary than to wait for the potential body count."

On a mission

Even as Michele was continuing to try to resolve her family's health troubles, she was in

the midst of another ordeal. Tessa had been sent to the hospital several times by her school. Doctors there were confused about the cause of Tessa's problems, and one social worker didn't believe that arsenic can be found in wood. Children's Services was called, which led to an eight-month investigation. The file was dosed and the Lalfantaisies were completely cleared in November 2004, but the family decided to leave Ottawa and move to the Toronto suburbs. "I don't think the stigma of an investigation like that ever goes away," Michele says.

Now, almost three years later, the Lafantaisies are settled in their new home. And though they continue to worry about Tessa's long-term cancer risks, they are slowly reclaiming their health and their lives. "Our coughing stopped pretty soon after we moved in, and one day Barry said, 'Hey, my feet aren't burning anymore,'" Michele reports. "But it's always in the back of your minds because there's so much we don't know about how these risks develop." Michele has turned her attention to getting CCA-treated wood out of local parks and playgrounds, and she has already persuaded Tessa's old school to remove the wood from its playground. But she knows there's still much work to be done. "You become an activist because you have to be," she says. "You don't want this to happen to other moms and children."

Tessa, now 10, is generally healthy, though she still doesn't have proper feeling in her hands and her thyroid doesn't function perfectly. But she aces her science tests and is doing her part to protect other kids from CCA-treated wood. One day soon after the family moved to their new home, Michele and Tessa visited a nearby playground. Tessa spotted a little boy putting gum in his mouth after sticking it on the jungle gym. "She put her hand out and said, 'Give me that gum?'" Michele recalls. "Then she made him wash his hands and explained to him that the wood was dangerous. I just thought, There's my girl?"

RELATED ARTICLE: Are your children at risk?

If your deck, play set, or picnic table was built before 2004, it could be made with CCA wood. Visit the Environmental Working Group (EWG) at ewg.org/ reports/poisonwoodrivals/ orderform.php and order a test kit ($20 to $35) to find out how much arsenic is in your wood and the surrounding soil. Then follow these tips:

* Remove and replace your structure (or at least the most high-traffic areas such as handrails, steps, or floorboards, where you're most likely to pick up arsenic on your skin) with a non-arsenic alternative. The lumber industry developed alkaline copper quat (ACQ) and copper boron azole (CBA) woods to replace CCA, but the EWG prefers pesticide-free choices such as cedar and recycled-plastic composite lumber.

* Seal any wood you can't replace with a penetrating stain or deck sealant. According to early data from an EPA study, stains and sealants reduced the amount of dislodgeable arsenic from CCA wood for up to 12 months. But the EWG's data suggests that sealants lose their effectiveness after just six months of use in a home setting, so plan to reseal your deck twice a year to be safe.

* Wash your hands and your children's hands after every exposure to the wood, especially before eating.

* Bring a plastic tablecloth when you go camping, to cover CCA-wood picnic tables at campsites.

* Never sand or pressure-wash your deck--this can spread arsenic-filled dust around

your yard. Instead, use a solution of soap and water.

* Keep kids and pets off rough wooden surfaces (CCA-wood splinters can increase the risk of exposure) and away from the soil beneath your deck or play set.