Demystifying Common Myths about Lead

Narrator: Childhood lead poisoning is a complex condition with many impacts. Although lead levels in children have decreased over the last four decades, it remains an important public health concern.

Dr. Marissa Hauptman is a pediatrician and pediatric environmental health specialist at Boston Children's Hospital who teaches pediatrics at Harvard Medical School. She says that progress in reducing childhood lead exposure has been hampered by the persistence of lead in our environment and conflicting information available to the public, including several myths about lead.

Hauptman: One of the most common misperceptions about lead is that children today are no longer affected by lead, that it's a problem of the past, because it's no longer added to paint or gasoline. Unfortunately, this isn't true. It's estimated that 500,000 children under the age of 6 in the U.S. today have blood lead levels above the current CDC public health action level and children living in 3.6 million U.S. households are currently exposed to lead hazards.

Narrator: Hauptman says that although lead has been recognized as having health effects, and European countries actually started to ban lead in the early 1900s, it wasn't until the 1970s that U.S. federal legislation removed lead from motor gasoline and reduced smokestack emissions.

She says that currently children are most often exposed to lead through legacy sources that persist in our environment.

Hauptman: Unfortunately most children with elevated blood lead levels today are contaminated through exposures to lead laden dust from deteriorating lead based paint. The exposure commonly arises in young toddlers, peaking around age 2, from developmentally appropriate hand-to-mouth behavior in an environment that is contaminated with lead dust.

Narrator: Many people think that eating lead based paint chips and dust is the only source of lead exposure for children, according to Hauptman, but she points out that there are other important sources. For example, lead from some types of industrial practices can persist in soil, and drinking water can be contaminated with lead from aging water pipes.

These exposures can be problematic for our health, especially for children, because they are still growing and developing. For example, lead is known to have severe impacts on the developing brain, which can have lifelong consequences, like lower IQ.

Hauptman: Another common myth is that there's a safe level of lead that can be in the body and unfortunately this is not true. All the studies to date have demonstrated that there's really no safe level of lead in the body. Lead acts as a neurotoxin at any level and has resulted in damage to the developing brain even at relatively low levels of exposure. Even blood lead concentrations below 5 (µg/dL) can be a causal risk factor for diminished intellectual and academic abilities, higher rates of neurobehavioral disorders such as hyperactivity, attention deficits, and lower birth weight in children.

Narrator: Another problem that makes the issue of lead exposure more complex is that, contrary to what many people may think, not everyone is exposed to, or impacted by lead equally.

Hauptman: Although lead levels have decreased in all children over the past 4 decades, environmental health disparities disproportionately expose some populations of children and pregnant women to lead based on many factors.

Narrator: Hauptman notes that younger children are more susceptible to the effects of lead than adults or older children because their nervous systems are still developing rapidly. In addition, certain populations of children may be disproportionately exposed to lead based on socioeconomic status, deteriorating housing conditions, as well as developmental and cultural risk factors that put some children at higher risk than others.

For example, immigrant populations may be at increased risk due to exposures in countries with less protective policies or due to unstable housing conditions. Other populations, such as those with low socioeconomic status or minority groups, may be more likely to live in older housing developments that have not had lead cleaned up.

In the face of the many challenges surrounding lead persistence and exposure, doctors and researchers like Hauptman are working to eliminate misinformation and educate the public about lead. One way they are doing this is through Pediatric Environmental Health Specialty Units or PEHSUs.

Hauptman: The Pediatric Environmental Health Specialty Unit is an interconnected system of specialists located throughout North America who respond to questions from public health and medical professionals, clinicians, policy makers, and the public about the impacts of environmental factors on the health of children and reproductive age adults and most importantly, identify ways to reduce exposures to environmental toxins.

Narrator: Other ways Hauptman says people can reduce their exposure to lead is by learning about the materials that may contain lead, such as paint or pipes, in their homes, workplaces, schools, and daycare facilities. She says that a licensed lead inspector or local public health officials can identify the lead status of a building to enable people to make informed decisions.

She stresses that the key to preventing lead toxicity is to reduce or eliminate persistent sources of lead in the environment, rather than identifying and managing individual cases of lead poisoning. However, pregnant women and parents should discuss lead with their doctors if lead exposure is a concern.

You can you can find more information about lead exposure, health impacts, and resources that combat the common myths about lead on our website at niehs.nih.gov/podcasts.

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