

Environment, health, and safety

Pediatric lead exposure

By Katie Slavin, MS, RN

Lead has long been known to be a toxic agent. Recently, concern has been rising regarding lead exposure in children's toys. Although lead in paint on toys has been banned in the United States since 1987 and federal law sets the maximum acceptable level of lead at 600 parts/million, toys continue to be recalled for violations. In October 2007, the U.S. Consumer Product Safety Commission, the government agency responsible for monitoring consumer goods in the United States, reported a record number (29) of recalls of imported children's toys for either violation of lead paint standards (24) or excessive levels of lead (5). None of these products was manufactured in the United States; however, 27 products were manufactured in China and imported into the United States.

The detrimental effects of pediatric and prenatal lead exposure has been well documented. In the late 1970s, studies began to show that asymptomatic children with elevated blood lead levels had lower IQ scores, increased behavioral problems, and language and learning problems. Research has shown that lead crosses the placenta, enters the fetal brain, and interferes with normal brain development. Prenatal, postnatal, and childhood lead exposure has been associated with lower intelligence, hyperactivity, learning disabilities, attention disorders, impaired growth, decreased hearing acuity, elevated blood pressure, aggression, and delinquency.

According to a 2005 study in the *Journal for Specialists in Pediatric Nursing*, children are exposed to lead mostly through lead-based paint in older homes. Other sources of lead exposure for children include contaminated drinking water in older homes with lead pipes and leached lead solder on imported canned foods. Studies have also demonstrated that adults working in industries that involve lead exposure can transport lead dust home on their clothing and affect their children. Other items, such as lead ammunition, battery casings, fishing sinkers, curtain weights, pool cue chalk, clothing accessories, collectible toys, and some jewelry, can be ingested by children and broken down inside their digestive system, causing lead intoxication.

Efforts to decrease the lead burden in the environment and protect children from lead exposure have lowered lead levels significantly, yet many children still face high risk according to a 2003 *Journal of Pediatric Health Care* study. Data demonstrate that children living in low-in-

come or poverty-level families, black children, immigrants, and all children living in urban areas or housing built before 1950 (when voluntary paint industry standards called for limiting lead content to 1% were initiated), are particularly susceptible to lead exposure.

The United States continues to rapidly increase global outsourcing of production and importing of goods. A 2007 report by the Campaign for America's Future stated that world imports have increased by 338% since 1974, with imports from China alone increasing nearly 3,900% since 1985. The report also states that the budget of the Consumer Product Safety Commission is now less than half of what it was when the Commission was instituted in 1974. As a result, American consumers are inevitably exposed to increasing numbers of products that were neither produced in the United States nor subject to American safety standards, putting more individuals at risk.

Nurses must advocate for legislation aimed at protecting this vulnerable population from environmental toxins—legislation that would eliminate all sources of lead exposure and provide adequate funding to monitor products for consumer protection. The authors of a 2004 article in *Environmental Health Perspectives* insist that a concerted effort by government organizations and foundations to prioritize pediatric environmental health is essential to providing the resources and expertise needed to set policy and provide the tools for teaching pediatric environmental health to healthcare providers.

Nurses working with pediatric patients and their parents have the responsibility to perform pediatric/environmental health assessments. Free courses on performing pediatric environmental home assessment are available at www.healthyhomestraining.org/Nurse/PEHA.htm. The National Environmental Education Foundation offers information for health professionals about pediatric environmental history-taking in clinical practice and provides comprehensive history-taking forms at www.neefusa.org/health/PEHI/index.htm.

Nurses play a key role in keeping the risk of childhood lead exposure in the forefront, not only in the clinical area but also in policy reform. ★

For a list of references, visit www.AmericanNurseToday.com.

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