Over the past few years, we have seen a plethora of articles in the news about lead contaminated products, especially for items which have been imported from other countries. There was a lot of publicity recently about toys manufactured in China and covered with paint with too much lead in them. Not a month goes by without another warning coming from the CPSC or some other agency about a product which has been found to contain lead.

We have seen warnings about venetian blinds which can shed lead over time, lead contaminated vinyl on inflatable games and toys, and a host of other items. Unfortunately, this is not that surprising, since lead remains one of the most malleable elements and is used in a wide range of products in our home – including high tech equipment.

The danger of significant (a word difficult to precisely define) exposure to children in this country (from a single one of these products) is hard to estimate, but is probably not very high.

On the other hand, there are some real dangers which do not get enough publicity – some of the worst “offenders” are trinkets which contain large amounts of lead and, when swallowed, may pose a real threat to young children. Lead can be leached out of these trinkets by exposure to stomach acid and several fatal and near fatal cases of lead poisoning have resulted.

Health care providers should also be aware that new Americans coming to the U.S. from other countries may bring items such as cosmetics, herbs, spices and folk remedies which have high lead content. Unknowingly, their children may be exposed to these items in their homes and ethnic communities for long periods of time. The CDC strongly recommends that all refugee children up to 16 years of age have a blood lead test within a month of arrival in the United States.

Finally, we cannot forget that the main source of lead exposure for children in this country is still leaded paint in homes built prior to 1978. This reservoir of old homes means that the potential for lead exposure will be with us for decades to come. It therefore remains necessary to maintain vigilance about possible lead exposure in our patients and to follow the mandates of the New York State Health Department to test all 1 and 2 year olds for lead exposure. We must be careful not to fall into the trap of “Lead Poisoning Awareness Fatigue”.

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October 24-30
National Lead Poisoning Prevention Week
LEAD FREE KIDS
for a healthy future
www.leadfreekids.org

Let’s Not Develop “Lead Poisoning Awareness Fatigue”
Howard L. Weinberger MD
Environmental exposures are a leading cause or exacerbator of learning disabilities, asthma and other common medical problems in children (Landrigan, 2002). These conditions, generally chronic, impose enormous medical costs. According to a recent study, the annual cost of asthma, cancers and neurodevelopmental disabilities is $4.65 billion (Landrigan, 2002).

Although pediatricians commonly see children with diseases of environmental origin, only 20% of pediatricians have received training in environmental history taking, and few are comfortable in the management of these exposures (Trasande, 2006).

In response to these needs, the Children’s Environmental Health Centers (CEHC) of New York were established to improve the recognition, evaluation, management and prevention of environmental health problems in children. The Centers – currently at Buffalo, Rochester, Syracuse, Albany, White Plains, Long Island and New York City – are a source of clinical expertise, community outreach and public education regarding environmentally related disease.

The CEHC at the University of Rochester – directed by James R. Campbell, MD, MPH and Richard K. Miller, PhD – has worked toward addressing these issues.

In regard to medical education, we initiated a series of monthly conferences for the pediatric residents at the University of Rochester Medical Center. Topics covered include lead poisoning, environmental exacerbators of asthma, perinatal exposures, tobacco smoke cessation, mercury poisoning, endocrine disruptors, electromagnetic field exposure and radon exposure. In addition, we have also provided many lectures to community physicians on the latter topics.

The general community also needs to be aware of possible environmental hazards, as well as available services to address these exposures. Therefore, we have delivered community lectures on lead poisoning, environmental exacerbators of asthma, perinatal exposures, and endocrine disruptors.

In regard to clinical services, we established a 24-hour telephone line (585-275-3638) that is available for medical providers and the public to call regarding their questions. A web site was recently established (http://rrcehc.org). We have also sought to expand asthma programs in Monroe County. Asthma is common among Rochester children. An estimated 15% of school-aged children have asthma. In response to this, the Regional Community Asthma Network (RCAN) was established to educate the family and inspect homes for environmental exacerbators. Our Center has provided funds to RCAN to expand their program within Rochester.

For questions, Dr. Campbell may be reached at 585-922-5658.

References


Primary prevention of childhood lead poisoning remains the only way to protect children from the often irreversible consequences of lead exposure. The most common source of lead is old lead paint and the dust that is created as it deteriorates. Homes built before 1978 may contain lead paint and when renovation work is done in one of these homes, it is critical that precautions are in place to prevent contamination of the structure with leaded dust.

An article published in MMWR in 2009, *Children with Elevated Blood Lead Levels Related to Home Renovation, Repair, and Painting Activities — New York State, 2006–2007, January 30, 2009/58(03);55-58*) reports that 14% of the children in New York State with blood levels $> 20$ µg/dl in 2006-2007 were found to have a probable lead exposure from home renovation, repair and painting. The exposure can occur if the children are present during the work and/or after the work is completed when contaminated dust is left behind.

Beginning in April 2010, the New York State Department of Health requires that “all renovations, repairs and maintenance that disturb painted surfaces performed for compensation in pre-1978 housing and child-occupied facilities be performed by an EPA certified firm.” The rules require that contractors are trained in lead safe work practices including containing work areas to prevent dust and debris from spreading, conducting a thorough clean up, and verifying that the clean up was effective.

These rules do not apply to homeowners working on the home they occupy. It is very important that families planning repairs and renovations understand the risks of doing their own repairs on an older home. In each county, the Health Department’s Lead Program can give guidance to families to prevent accidental lead exposure through renovation work.

A fact sheet about the rule can be found at [http://www.epa.gov/lead/pubs/rrpfactsheet2008.htm](http://www.epa.gov/lead/pubs/rrpfactsheet2008.htm)
Journal Reviews  Maureen J. Butler RN, BSN

Iron, Lead, and Children's Behavior and Cognition. Kordas K, *Annual Review of Nutrition* 2010 Aug 21; 30: 123-148. This is a comprehensive review of the interaction between iron deficiency and lead toxicity. The author summarizes the evidence from 26 research studies on iron deficiency, lead poisoning and effects on cognition. A geographic overlap between iron deficiency and lead exposure in children is identified. The author recommends future research to address the mechanisms of interaction and to systematically examine the independent and combined effects of iron deficiency and lead poisoning on neural anatomy and physiology. The article also briefly discusses the concept that the prenatal period is a time of heightened susceptibility to both iron deficiency and lead exposure and identifies the need to study the potential effects on functional outcomes.

Blood Lead Levels and Delayed Onset of Puberty in a Longitudinal Study of Russian Boys. Williams P, Lee M Burns JS et al, *Pediatrics* 2010:125 ;e1088-e1096. Researchers enrolled 489 Russian boys, aged 8-9 yrs old in a longitudinal study to evaluate the association of blood lead levels and pubertal onset. Higher blood lead levels at enrollment were associated with later pubertal onset.

Pediatric Lead Exposure From Imported Indian Spices and Cultural Powders. Lin C, Schaid L, Brabander D et al, *Pediatrics* 2010 April; 125(4);e828-e835. It has been recognized that imported foods and herbal remedies can be a source of lead exposure. In this article, the authors provide some new information about imported Indian spices and spice mixtures often used daily. Cultural powders are not directly ingested but easily enter the digestive tract by hand to mouth contact. For example, three samples of sindoor (a red powder Vermilion, which is traditionally applied by hand at the beginning or completely along the parting-line of a woman’s hair or as a dot on the forehead) contained >47% lead by weight.