

WEBSITE

Folk remedies identified as potential sources of lead and arsenic.

Two digestive aids commonly used by children of Burmese refugees in Fort Wayne have tested high for lead and arsenic. Local, state and federal health officials are now urging people to avoid using these folk medicines. Healthcare providers should routinely screen this population for lead and arsenic exposure.

Daw Tway has contained lead levels as high as 970 ppm, 200 times above acceptable limits, and 7,100 ppm arsenic. *Daw Tway* is used as a digestive aid in young children. It comes as a brown pellet or powder and is applied to the tongue. No stores in Fort Wayne have been identified that currently sell this product. Most of the product has been brought into the area by travelers returning from Southeast Asia or arrived via shipments from family and friends in that region.



Daw Kyin, or “wonotsay” , has contained arsenic levels as high as 23,000 ppm. *Daw Kyin* is usually used as a digestive aid in young children. It comes as a brown powder and is taken orally. Several Asian markets in Fort Wayne currently selling this product have been identified, and are being asked to remove this product from distribution.



The testing is a part of a coordinated effort between the St. Joseph Community Health Foundation, Fort Wayne-Allen County Department of Health, Indiana State Department of Health (ISDH), and Centers for Disease Control and Prevention to identify products, customs, and environmental factors that may be contributing to a higher than normal percentage of children with elevated blood lead levels in the Fort Wayne Burmese refugee population. Data and additional products are currently being analyzed. Results will be released as they become available.

ARSENIC AND LEAD POISONING

ARSENIC

There are two forms of arsenic: organic and inorganic. Little is known about the health effects of organic arsenic compounds in humans. Inorganic forms of arsenic, however, are known to be toxic. Ingesting very high levels can result in death. Exposure to lower levels of inorganic arsenic can result in:

- Abdominal pain
- Alopecia
- Anemia
- Anorexia
- Colic
- Dermatitis
- Generalized weakness
- Hyperpigmentation
- Nail changes
- Nausea
- Polyneuritis
- Vasculitis
- Vomiting
- Warty growths on palms, soles, torso

Inorganic arsenic is a known human carcinogen. Ingestion of inorganic forms of arsenic can increase the risk of skin, liver, bladder, and lung cancer. Long-term exposure to inorganic arsenic in children may result in lower IQ scores. Inorganic arsenic crosses the placenta during pregnancy and may be harmful to the fetus.

Measuring urinary levels of arsenic is the most reliable method for confirming arsenic exposure within the past 48-72 hours. Urine arsenic levels can be fractionated to determine levels of organic vs. inorganic arsenic exposure. Seafood consumption within 48 hours of urine testing can lead to false positive results. Urinary creatinine is employed to adjust concentrations of urinary analytes for variations in hydration status.

Arsenic intoxication can be treated using chelation therapy. For more information about arsenic poisoning and its treatment, go to: http://www.atsdr.cdc.gov/csem/arsenic/treatment_management.html.

LEAD

Lead has been used in industry for centuries, and was widely used in paint and gasoline in the U.S. until the 1970's. Since the elimination of lead from paint and gasoline, lead levels in children have declined steadily in this country. Children continue to be exposed to lead hazards as a result of chipping and peeling lead-based paint, during home renovations, through imported toys, jewelry, and ceramic pottery, and through the use of some imported traditional remedies. Ingestion of high levels of lead can lead to seizures and death. Even low levels of lead exposure can lead to a decrease in IQ and learning and behavioral problems in children. Focused lead screening is important, because toxicity may be asymptomatic or result in nonspecific symptoms, such as:

- Abdominal pain
- Arthralgia
- Constipation
- Difficulty concentrating
- Encephalopathy
- Fatigue
- Headache
- Hyperactivity
- Irritability
- Lethargy
- Paralysis
- Tremor
- Vomiting
- Weight loss

The Centers for Disease Control and Prevention (CDC) recommends screening children at risk for lead poisoning between the ages of 1 and 2 years. Refugee children, 6 months to 16 years of age, should be screened within the first 90 days of entering the country.

Lead levels can be measured by capillary or venous testing. If a capillary blood lead level is elevated, it should be confirmed with venous testing. Indiana state law requires that you report any child with a blood lead level ≥ 10 $\mu\text{g}/\text{dL}$ to your local health department for follow-up. Children with blood lead levels over 45 microgram/dL may be treated with chelation therapy. Chelation therapy is not a cure for lead poisoning and should not be used if the source of lead has not been identified and removed.

For more information about chelation therapy, go to:

<http://aappolicy.aappublications.org/cgi/reprint/pediatrics;116/4/1036?eaf>

For more information about prevention of lead poisoning in newly arriving refugee children, go to:

http://www.cdc.gov/nceh/lead/Publications/RefugeeToolKit/Refugee_Tool_Kit.htm