



## Medically Oriented Fact Sheet (MOF)

# CDC Lead Poisoning Prevention and Treatment Recommendations for Refugee Children

### 1. Background:

- Lead poisoning remains one of the most common and preventable pediatric environmental conditions in the United States.
- Lead is a poison that affects virtually every system in the human body.
- Lead is particularly harmful to the developing brain and nervous system of fetuses and young children.
- The prevalence of elevated blood lead levels is much higher among newly resettled refugee children in the United States than the 1.6% prevalence for U.S. borne children.

### 2. Exposure Routes:

- The most common source of lead exposure for children is deteriorated lead paint from older housing.
- The primary route of exposure for children is by ingesting house dust or soil contaminated by leaded paint.
- Young children have a higher risk for exposure because they have frequent hand-to-mouth activity, and they absorb lead more easily than do adults.

- Children who mouth or eat non-food items, especially soil, are at risk for lead poisoning, regardless of the age of their housing. This occurrence is common among certain refugee populations.

### 3. Signs and Symptoms:

- Lead poisoning, for the most part, is asymptomatic. The vast majority of cases, therefore, go undiagnosed and untreated.
- Very high lead levels in children can cause severe neurologic problems such as coma, convulsion, and even death, although such levels are now rare in the United States.
- Lower levels cause adverse effects on the central nervous system, kidney, and hematopoietic system.
- Blood lead levels as low as 10µg/dL, which do not cause distinctive symptoms, are associated with decreased intelligence and impaired neurobehavioral development.
- Many other effects begin at these low blood lead levels, including decreased stature or growth, decreased hearing acuity, and decreased ability to maintain a steady posture or growth.

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## 4. Blood Lead Testing:

- The American Academy of Pediatrics endorses testing children who have emigrated from other countries where lead poisoning is prevalent.
- The Centers for Disease Control and Prevention recommends blood lead testing for **all** refugee children who are 6 months to 16 years old upon entering the United States.
- Unlike U.S. children, studies indicate that age is not a significant risk factor for elevated BLLs among refugee children.
- Repeat BLL testing of all refugee children who are 6 months to 6 years of age, 3 to 6 months after they are placed in permanent residences, should be considered a “**medical necessity**,” regardless of initial test results.
- Any screening BLL above 10µg/d, not performed by venipuncture, must be confirmed with a venous sample.

## 5. Post-arrival Evaluation and Therapy

- Upon arriving in the United States, all refugee children should have nutritional evaluations performed and should be provided with appropriate nutritional and vitamin supplements as indicated.
- Pre-existing health burdens such as chronic malnutrition increase a refugee child’s risk for lead poisoning.
  - For example, iron deficiency, prevalent among refugee children, increases gastrointestinal absorption of lead.
- At a minimum, the nutritional evaluation should contain an evaluation of the children’s iron status,

including hemoglobin/hematocrit and an evaluation of one or more of the following:

- mean corpuscular volume (MCV) combined with red cell distribution width (RDW);
- ferritin;
- transferrin saturation; or
- reticulocyte hemoglobin content.

## 6. Treatment

- Medical interventions and treatments vary depending on the confirmed blood lead level.
- Detailed information can be found at [www.cdc.gov/nceh/lead/CaseManagement/caseManage\\_main.htm](http://www.cdc.gov/nceh/lead/CaseManagement/caseManage_main.htm).
- While chelation therapy is considered a mainstay in the medical management of children with BLLs > 45µg/dL, it should be used with caution.
- Primary care providers should consult with an expert in the management of lead chemotherapy prior to using chelation agents.

## 7. Long-term Sequelae

- Neurodevelopmental monitoring should continue long after a child’s BLLs have been reduced, as many deficits will not manifest themselves until after a child starts school.
- Because development history and testing at the time of an elevated BLL usually will not identify lead-caused problems, a child’s elevated BLL history should be part of his permanent record.

For additional information on lead poisoning prevention efforts among refugee children, visit [www.cdc.gov/nceh/lead](http://www.cdc.gov/nceh/lead).