



# LEAD POISONING

## Screening and Management of Lead Exposure in Pregnant and Lactating Women and Breastfeeding Infants

### Screening

#### Key points

- There is no safe blood lead level (BLL).
- Lead crosses the placenta and can be transferred via breast milk.
- Prenatal lead exposure can have negative maternal and child health impacts.
- Risk assessment of lead exposure should take place at earliest contact with pregnant and lactating women. If any risk factors are identified, a blood lead test should be performed.
- Patients with risk factors for lead exposure who have not been tested during pregnancy should be tested postpartum if planning to breastfeed.

#### Adverse health effects of lead exposure during pregnancy

- Adverse neurodevelopmental outcomes for fetus.
- Increased risk of growth restriction for fetus.

- Increased risk for hypertensive disorders of pregnancy, including preeclampsia.
- Possible association between elevated BLL and spontaneous abortion or preterm delivery.

#### Risk factors for lead exposure in pregnant and lactating women

- Newly arrived in the United States (e.g., refugee, immigrant, migrant).
- Living in an older home (pre-1978) where renovations or remodeling have occurred within the past 12 months.
- Consuming drinking water contaminated with lead.
- History of previous lead exposure.
- Living with someone with an elevated BLL.
- Living near a potential lead source (e.g., lead mine, smelter).
- Working with lead or living with someone who does (e.g., construction, renovation, mining).

### **Risk factors for lead exposure in pregnant and lactating women, continued**

- Engaging in certain high-risk hobbies or recreational activities (e.g., using leaded bullets or leaded fishing weights).
- Displaying pica behavior (eating or mouthing nonfood substances).
- Using alternative or complementary substances, herbs, or therapies that might contain lead.
- Using consumer products that might contain lead.

### **Consider performing a blood lead test if person answers “yes” or “don’t know” to any of the following questions:**

- Do you have a history of lead exposure or currently live with someone who has an elevated blood lead level?
- Have you recently immigrated from or spent a significant amount of time in an area or country where lead contamination is high (e.g., country where lead emissions are not well controlled or where leaded gasoline was more recently phased out)?
- Do you currently live near a point source of lead (i.e., lead mine, smelter, battery recycling plant)?

- Do you live in a residence that was built before 1978? If so, in the last 12 months, has there been any renovation or repair work in your home or apartment building?
- Has your home drinking water been tested for lead, and if so, were you told that the level was high?
- During the past 12 months, did you use any imported health remedies (such as traditional folk remedies), spices, foods, ceramics, or cosmetics?
- During your pregnancy did you ever eat, chew on, or mouth nonfood items such as clay, soil, plaster, or paint chips – even accidentally?
- Have you ever had a job or hobby that involved possible lead exposure, such as home renovation or working with glass, ceramics, or jewelry?
- Do you or others in your household have an occupation or hobby that involves lead exposure (e.g., working in a mine, renovation or repair, or use leaded bullets)?



# Medical Management of Lead Exposure During Pregnancy

BLL	Recommended Actions
< 5 µg/dL	<ul style="list-style-type: none"> <li>• Provide anticipatory guidance on how to prevent lead exposure during pregnancy.</li> <li>• No follow-up testing is indicated.</li> </ul>
≥ 5-14 µg/dL	<p><b>ALL OF THE ABOVE, PLUS:</b></p> <ul style="list-style-type: none"> <li>• Repeat venous BLL test within 1 month.</li> <li>• Obtain a maternal BLL and/or cord BLL at delivery.</li> <li>• Report results within 3 working days if BLL is &gt; 10 µg/dL (if &lt; 18 years of age, report if BLL is &gt; 5 µg/dL).</li> <li>• Identify and eliminate exposure and consider consulting an Environmental or Occupational Health Specialist.</li> <li>• Optimize nutrition, balanced diet, prenatal vitamins.</li> <li>• The American College of Obstetricians and Gynecologists (ACOG) recommends adequate dietary intake calcium, iron, zinc, and Vitamins C, D, and E.</li> <li>• If BLL ≥ 5 µg/dL, prescribe dietary intake of Ca+ 2000 mg/day.</li> <li>• Evaluate iron status and treat anemia accordingly.</li> <li>• Refer to nutrition assistance programs (i.e., SNAP) for those in need.</li> <li>• Inform neonate's physician of mother's lead exposure and BLL.</li> </ul>
< 45 µg/dL	<p><b>ALL OF THE ABOVE, PLUS:</b></p> <ul style="list-style-type: none"> <li>• Repeat venous BLL test within 1-4 weeks and then every 2 - 3 months if BLL is &lt; 25 µg/dL, or every 1 month if BLL is 25 - 44 µg/dL.</li> <li>• Obtain a maternal BLL and cord BLL at delivery.</li> <li>• Encourage an environmental risk assessment by the local public health district to determine potential lead exposures.</li> <li>• Encourage case management by the medical provider.</li> </ul>
≥ 45 µg/dL	<p><b>ALL OF THE ABOVE, PLUS:</b></p> <ul style="list-style-type: none"> <li>• Repeat BLL test within 24 hours and at frequent intervals depending on clinical interventions and trend in BLLs.</li> <li>• Consult a clinician experienced in lead poisoning and chelation (chelation also warranted in cases of life-threatening lead encephalopathy).</li> <li>• Refer to a maternal-fetal medicine specialist.</li> </ul>

# Medical Management of Lead Exposure & Breastfeeding

<b>BLL at time of birth</b> (mother's serum or cord blood) or last BLL measured during pregnancy	<b>Maternal Blood Lead Follow-up Testing During Lactation to Assess Risk for Infant Lead Exposure</b>
<b>5 - 9 µg/dL</b>	<ul style="list-style-type: none"> <li>• Repeat BLL test every 3 months, per guidelines for adult blood lead testing, unless infant BLL is rising or failing to decline.</li> <li>• Initiate breastfeeding and perform sequential testing of infant BLL testing to monitor trends.</li> </ul>
<b>20 - 39 µg/dL</b>	<ul style="list-style-type: none"> <li>• Repeat BLL test 2 weeks postpartum and at 1- to 3-month intervals depending upon direction and magnitude of trend in infant BLL.</li> <li>• Initiate breastfeeding and perform sequential testing of infant BLL testing to monitor trends.</li> <li>• If infant BLL is <math>\geq 5</math> µg/dL and breastmilk is the suspected source (infant BLL fails to decline and no other sources of potential lead exposure are identified), consider interrupting breastfeeding until maternal BLL is <math>&lt; 20</math> µg/dL.</li> </ul>
<b><math>\geq 40</math> µg/dL</b>	<ul style="list-style-type: none"> <li>• Repeat BLL test within 24 hours postpartum and at frequent intervals, depending on clinical interventions and trend in BLL.</li> <li>• Consultation with a clinician experienced in management of lead poisoning is advised.</li> <li>• Discontinue breastfeeding and pump and discard breast milk until BLL is <math>&lt; 40</math> µg/dL.</li> </ul>

*Consulting an expert prior to recommending the postponement or interruption of breastfeeding based on BLL is strongly encouraged.*

## Anticipatory Guidance

- Never eat or mouth nonfood items (pica), such as clay, soil, pottery, or paint chips, because they can be contaminated with lead.
- Avoid jobs or hobbies involving lead exposure and take precautions to avoid take-home lead dust if a household member works with lead. Such work includes construction or home renovation and repair in pre-1978 homes, and lead battery manufacturing or recycling.
- Avoid using imported lead-glazed ceramic pottery produced in cottage industries and pewter or brass containers or utensils to cook, serve, or store food.
- Avoid using leaded crystal to serve or store beverages.

## Anticipatory Guidance, continued

- Do not use chipped or cracked dishes.
- Stay away from repair, repainting, renovation, and remodeling work in homes built before 1978 to avoid possible exposure to lead-contaminated dust from lead-based paint. Avoid exposure to deteriorated lead-based paint in older homes.
- Avoid alternative cosmetics, food additives, and medicines imported internationally that can contain lead, such as azarcon, kohl, kajal, surma, and many others.
- Use caution when consuming candies, spices, and other foods brought into the country by travelers from abroad, especially if they appear to be noncommercial products of unknown safety.
- Eat a balanced diet with adequate intake of iron and calcium and avoid the use of tobacco products and alcohol.



### For additional information contact:

Idaho Department of Health and Welfare

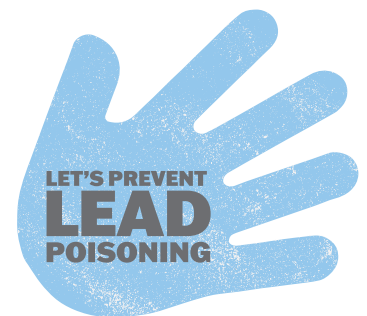
Environmental Health Program

Childhood Lead Poisoning Prevention Program

email: [eh@dhw.idaho.gov](mailto:eh@dhw.idaho.gov)

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Website: [healthandwelfare.idaho.gov/lead-poisoning](https://healthandwelfare.idaho.gov/lead-poisoning)



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