

# Comparison of Childhood Blood Lead Treatment Guidelines, Case Management Guidelines, and Risk Assessment Requirements for MN

CREATED 2025

## Blood Lead Tests on Capillary Samples

ACTIONS BASED ON RESULTS OF BLOOD LEAD TESTS ON CAPILLARY SAMPLES			
BLLs (µg/dL)	Clinical Treatment Guidelines	Case Management Guidelines	Environmental Risk Assessment Requirements
ALL BLLs	<b>ALL BLOOD LEAD TESTS ARE REQUIRED TO BE REPORTED TO MDH BY THE LAB OR CLINIC ANALYZING THE SAMPLE. HEALTH CARE PROVIDERS DO NOT NEED TO CALL MDH TO REPORT (UNLESS THEY SUSPECT A FAILURE TO REPORT PROPERLY).</b>		
Capillary < 3.5	<ul style="list-style-type: none"> <li>Prevention Education: discuss blood lead testing and high-risk categories, primary sources of lead, and measures to keep children safe from lead. Education should be provided in the family’s preferred language.</li> <li>Retest at ages 12 and 24 months or if risk factors change.</li> <li>For newly arrived refugees less than 72 months of age, retest 3 to 6 months after placement in permanent residence.</li> </ul>	<ul style="list-style-type: none"> <li>No local public health (LPH) outreach necessary. LPH should provide lead prevention education if questions arise.</li> </ul>	<ul style="list-style-type: none"> <li>Not eligible for an environmental risk assessment.</li> </ul>
Capillary ≥ 3.5	<p>In addition to the steps described above for lower blood lead levels, perform the following:</p> <ul style="list-style-type: none"> <li>Contact the family to schedule a blood lead test on a venous sample. Confirm with a venous draw no later than:               <ul style="list-style-type: none"> <li>1 month for Blood Lead Levels (BLLs) 3.5–9.9 µg/dL</li> <li>1 week for BLLs 10.0–44.9 µg/dL</li> <li>48 hours for BLLs 45.0–59.0 µg/dL</li> <li>Immediately for BLLs ≥ 60 µg/dL.</li> </ul> </li> <li>Venous confirmation is required for a risk assessment.</li> <li>If a clinic is unable to do a venous draw, refer the child to a laboratory or facility able to perform a venous draw.</li> <li>MDH refers children to local public health departments (LPH).*</li> </ul>	<p>Perform the following within 1 week, or sooner for higher blood lead levels:</p> <ul style="list-style-type: none"> <li>Contact the family with the recommendation for venous confirmation within:               <ul style="list-style-type: none"> <li>1 month for Blood Lead Levels (BLLs) 3.5–9.9 µg/dL</li> <li>1 week for BLLs 10.0–44.9 µg/dL</li> <li>48 hours for BLLs 45.0–59.0 µg/dL</li> <li>Immediately for BLLs ≥ 60 µg/dL.</li> </ul> </li> <li>If feasible, contact the medical care provider regarding venous confirmation, especially for higher blood lead levels.               <ul style="list-style-type: none"> <li>Offer the medical care provider MDH’s screening &amp; treatment guidelines (link under “Resources”) if needed.</li> <li>If a clinic is unable to do a venous draw, they should refer the child to a lab or facility able to perform a venous draw.</li> <li>Venous confirmation is required for an environmental risk assessment (an environmental inspection).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Not eligible for an environmental risk assessment.</li> </ul>

## Blood Lead Tests on Venous Samples

ACTIONS BASED ON RESULTS OF BLOOD LEAD TESTS ON VENOUS SAMPLES			
BLLs (µg/dL)	Clinical Treatment Guidelines	Case Management Guidelines	Environmental Risk Assessment Requirements
<b>ALL BLLs</b>	<b>ALL BLOOD LEAD TESTS ARE REQUIRED TO BE REPORTED TO MDH BY THE LAB OR CLINIC ANALYZING THE SAMPLE. HEALTH CARE PROVIDERS DO NOT NEED TO CALL MDH TO REPORT (UNLESS THEY SUSPECT A FAILURE TO REPORT PROPERLY).</b>		
Venous < 3.5	<ul style="list-style-type: none"> <li>Prevention Education: discuss blood lead testing and high-risk categories, primary sources of lead, and measures to keep children safe from lead. Education should be provided in the family's preferred language.</li> <li>Retest at ages 12 and 24 months or if risk factors change.</li> <li>For newly arrived refugees &lt; 72 months of age, retest 3 to 6 months after placement in permanent residence.</li> </ul>	<ul style="list-style-type: none"> <li>No LPH outreach necessary. LPH should provide lead prevention education if questions arise.</li> </ul>	<ul style="list-style-type: none"> <li>Not eligible for an environmental risk assessment.</li> </ul>
Venous 3.5–4.9	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following:</p> <ul style="list-style-type: none"> <li>After initial venous result, repeat test on a venous sample every 3 months until &lt; 3.5 µg/dL.                             <ul style="list-style-type: none"> <li>Work with the family to schedule repeat tests as needed.</li> <li>After venous confirmation, venous follow-up tests are preferred due to accuracy, but capillary results are accepted.</li> </ul> </li> <li>MDH refers children to local public health (LPH);* LPH does case management and health education.</li> <li>Communicate with LPH regarding potential sources of lead. Test all household members who are likely exposed to lead source(s) or refer them to their primary care provider for blood lead testing within one month.                             <ul style="list-style-type: none"> <li>For housing-based sources, exposed individuals are typically &lt; 72 months of age.</li> <li>For non-housing-based sources, household members of all ages may be exposed.</li> </ul> </li> <li>Children who have persistently elevated levels in this range may benefit from additional communication and problem solving with LPH to identify potential lead</li> </ul>	<p>Perform the following within 1 week:</p> <ul style="list-style-type: none"> <li>Provide educational materials to the family. A link to MDH lead fact sheets is listed above under Resources.</li> <li>Contact the family with the recommendation for a repeat test on a venous sample every 3 months until BLL &lt; 3.5 µg/dL.                             <ul style="list-style-type: none"> <li>After venous confirmation, venous follow-up tests are preferred due to accuracy, but capillary results are accepted.</li> <li>Blood lead levels should continue to be monitored until they are less than 3.5 µg/dL.</li> <li>As resources allow, contact the medical care provider regarding the need for follow-up venous testing if venous follow-up not completed within three months.</li> </ul> </li> <li>Communicate with MDH or health care providers regarding follow-up and repeat tests, sources of lead, testing of other household members, or other concerns as needed.</li> </ul>	<ul style="list-style-type: none"> <li>For children with venous blood lead levels of 3.5–4.9 µg/dL, environmental risk assessments are not required but may be performed if the assessing agency's resources allow.                             <ul style="list-style-type: none"> <li>Currently, risk assessing agencies in Minnesota do not regularly provide risk assessments for children with venous blood lead levels less than 5.0 µg/dL.</li> </ul> </li> </ul>

COMPARISON OF CHILDHOOD BLOOD LEAD TREATMENT GUIDELINES, CASE MANAGEMENT GUIDELINES, & RISK ASSESSMENT REQUIREMENTS FOR MINNESOTA

	<p>sources and resources.</p> <ul style="list-style-type: none"> <li>▪ Assess nutritional status (especially iron &amp; calcium) through a conversation with family about the child’s normal diet.</li> <li>▪ Complete diagnostic evaluation including a physical exam and history.</li> <li>▪ Complete studies to evaluate iron status (complete blood count (CBC), ferritin, and reticulocyte count) and treat iron deficiency if present.</li> <li>▪ Check and follow neurologic &amp; developmental status. Refer to programs like Follow-Along or Help-Me-Grow as applicable.</li> <li>▪ Provide education on decreasing elevated BLLs: educate the family and discuss potential sources of lead, reducing or removing exposure, lead abatement, nutrition, chronic nature of lead, and need for ongoing monitoring of BLLs.</li> <li>▪ Provide written, culturally appropriate lead poisoning prevention educational materials.</li> </ul>		
<p>Venous 5.0–9.9</p>	<p>Perform the steps described above for lower blood lead levels on venous samples. The following is performed by public health:</p> <ul style="list-style-type: none"> <li>▪ MDH and/or LPH will attempt to conduct an environmental inspection (risk assessment) and education in the home within 20 working days of receiving the qualifying blood lead level.</li> <li>▪ Through the environmental inspection, the suspected lead sources will be identified. Lead correction orders will be issued for housing-based lead sources, and recommendations will be given for other lead sources.</li> </ul>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following within 1 week:</p> <ul style="list-style-type: none"> <li>▪ Contact the family with the recommendation for a repeat test on a venous sample every 3 months until BLL &lt; 3.5 µg/dL. <ul style="list-style-type: none"> <li>▪ Contact the medical care provider regarding the need for follow-up venous testing if venous follow-up not completed within three months. Offer the medical care provider MDH’s treatment guidelines if needed.</li> </ul> </li> <li>▪ Complete an assessment of medical, environmental, nutritional, and developmental needs. Make referrals as appropriate.</li> <li>▪ MDH and/or LPH will attempt to conduct an environmental inspection (risk assessment) and education in the home within 20 working days of receiving the qualifying blood lead level.</li> <li>▪ In collaboration with the assessing agency, LPH must ensure that in-home health education is provided through a home visit and/or risk assessment.</li> <li>▪ Communicate with the risk assessor assigned to the case to determine whether a home visit will be provided by LPH or whether the risk assessor will be providing home</li> </ul>	<ul style="list-style-type: none"> <li>▪ MDH and/or LPH will attempt to conduct an environmental inspection (risk assessment) and education in the home within 20 working days of receiving the qualifying blood lead level. <ul style="list-style-type: none"> <li>▪ Through the environmental inspection, the suspected lead sources will be identified. Lead correction orders will be issued for housing-based lead sources, and recommendations will be given for other lead sources.</li> <li>▪ The risk assessor should be in communication with the LPH case manager assigned to the case.</li> <li>▪ In collaboration with LPH, the assessing agency should ensure that in-home health education is provided</li> </ul> </li> </ul>

COMPARISON OF CHILDHOOD BLOOD LEAD TREATMENT GUIDELINES, CASE MANAGEMENT GUIDELINES, & RISK ASSESSMENT REQUIREMENTS FOR MINNESOTA

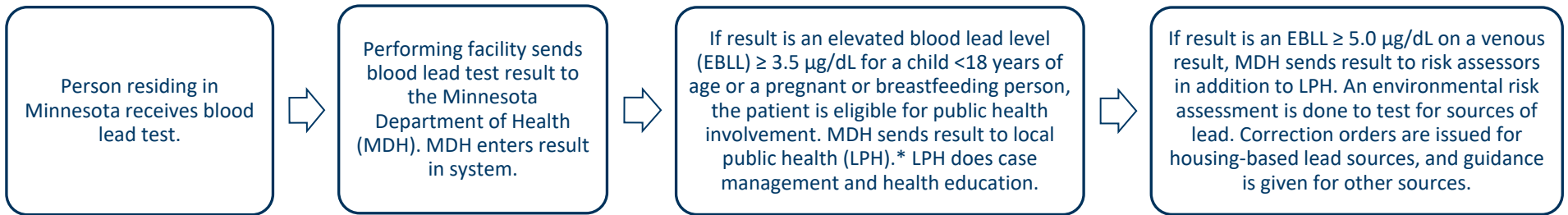
		<p>health education.</p> <ul style="list-style-type: none"> <li>Home visits and risk assessments should be conducted in the preferred language of the family. LPH and/or the assessing agency should use an interpreter or interpreting service if necessary.</li> </ul>	<p>though a home visit and/or risk assessment.</p> <ul style="list-style-type: none"> <li>Risk assessments should be conducted in the preferred language of the family. The assessing agency should use an interpreter or interpreting service if necessary.</li> </ul>
<p>Venous 10.0–44.9</p>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following:</p> <ul style="list-style-type: none"> <li>Household members who are likely exposed to lead sources should be tested or referred to their primary care provider for a blood lead test within one week.</li> <li>After initial confirmed venous result, repeat test on a venous sample every 3 months or do more frequent monitoring, as needed. MN Regional Poison Center (1-800-222-1222) or Region 5 PEHSU (312-355-0597) may be consulted for questions about monitoring frequency.</li> </ul> <p>MDH or LPH will conduct a risk assessment within 10 working days of receiving the qualifying blood lead level.</p>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following within 3 business days, or sooner for higher blood lead levels:</p> <ul style="list-style-type: none"> <li>Contact the family with the recommendation for a repeat test on a venous sample every 3 months until BLL &lt; 3.5 µg/dL. <ul style="list-style-type: none"> <li>Contact the medical care provider regarding the need for follow-up venous testing if venous follow-up not completed within three months. Offer the medical care provider MDH’s treatment guidelines if needed.</li> </ul> </li> <li>Complete an assessment of medical, environmental, nutritional, and developmental needs. Make referrals as appropriate.</li> <li>MDH or LPH will conduct an environmental risk assessment within 10 working days of receiving the qualifying blood lead level.</li> <li>In collaboration with the assessing agency, LPH must ensure that in-home health education is provided though a home visit and/or risk assessment. A home visit by LPH is recommended for these blood lead levels.</li> </ul>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following:</p> <ul style="list-style-type: none"> <li>MDH or LPH will conduct a risk assessment within 10 working days of receiving the qualifying blood lead level.</li> </ul>
<p>Venous 45.0–59.9</p>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following:</p> <ul style="list-style-type: none"> <li>Household members who are likely exposed to lead sources should be tested or referred to their primary care provider for a blood lead test within two business days.</li> <li>Reconfirm blood lead test result as soon as possible, even for venous results.</li> <li>Check abdominal radiograph. If swallowed lead object found, lead object should likely be passed or removed prior to chelation. Consult with MN Regional Poison Center or PEHSU (below) for guidance.</li> </ul>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following immediately:</p> <ul style="list-style-type: none"> <li>Contact the family with the recommendation for a repeat test on a venous sample as soon as possible. Let the family know the provider should be urgently reaching out to them to schedule additional follow-up.</li> <li>At this level the medical care provider should consult with MN Regional Poison Center or Region 5 PEHSU. Chelation treatment may be recommended (see MDH treatment guidelines). More frequent monitoring as well as additional tests and medical follow-up should be expected, including blood lead tests on venous samples 3-</li> </ul>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following:</p> <ul style="list-style-type: none"> <li>For children with venous blood lead levels of 45.0 µg/dL or greater, an environmental risk assessment will be scheduled within 5 working days.</li> </ul>

COMPARISON OF CHILDHOOD BLOOD LEAD TREATMENT GUIDELINES, CASE MANAGEMENT GUIDELINES, & RISK ASSESSMENT REQUIREMENTS FOR MINNESOTA

	<ul style="list-style-type: none"> <li>Consult MN Regional Poison Center (1-800-222-1222) or Region 5 PEHSU (312-355-0597) for guidance regarding possible chelation treatment, diagnostic tests, and other recommended actions.</li> <li>If chelation is recommended, coordination may be needed to ensure the availability of the chelation medication at specific locations. Contact MDH as soon as possible for assistance locating chelation medication if needed.</li> <li>Notify MDH immediately if child is hospitalized or chelation is begun. Coordinate care with MDH/LPH, and put an action plan in place. Discuss with MDH and family ways to reduce immediate lead exposure.</li> <li>After initial confirmed venous result, more frequent monitoring through repeated tests on venous samples will likely be needed. Develop a monitoring plan based on BLL trends that includes repeat tests on venous samples 3 to 6 weeks after chelation therapy is complete. If BLL <math>\geq</math> 45 <math>\mu\text{g}/\text{dL}</math> following chelation, consult with MN Poison Control or PEHSU.</li> <li>MDH or LPH will conduct a risk assessment within 5 working days of receiving the qualifying blood lead level.</li> </ul>	<p>6 weeks after chelation therapy is complete.</p> <ul style="list-style-type: none"> <li>Contact MDH and the medical provider to determine medical status, treatment, and follow-up plans.</li> <li>LPH should assist with contacting family and coordinating trips to clinic or hospital for recommended further testing and treatment as soon as possible, as well as follow-up tests after chelation therapy is complete.</li> </ul> <ul style="list-style-type: none"> <li>For children with venous blood lead levels of 45.0 <math>\mu\text{g}/\text{dL}</math> or greater, an environmental risk assessment will be scheduled within 5 working days. <ul style="list-style-type: none"> <li>The LPH case manager should arrange for an initial home visit. If possible, the home visit should happen at the same time as the risk assessment. LPH case manager should communicate with the risk assessor assigned to the case.</li> </ul> </li> <li>Attempt to facilitate alternative, lead-safe housing if available.</li> </ul>	
<p>Venous <math>\geq</math> 60.0</p>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following:</p> <ul style="list-style-type: none"> <li>TREAT AS AN EMERGENCY— potential encephalopathy.</li> <li>Household members who are likely exposed to lead sources should be tested or referred to their primary care provider for a blood lead test immediately.</li> <li>MDH or LPH will conduct a risk assessment within 48 hours of receiving the qualifying blood lead level.</li> </ul>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following immediately:</p> <ul style="list-style-type: none"> <li>TREAT AS AN EMERGENCY— potential encephalopathy.</li> <li>For children with venous blood lead levels of 60.0 <math>\mu\text{g}/\text{dL}</math> or greater, an environmental risk assessment will be scheduled within 48 hours.</li> <li>Additional follow-up should match follow-up for venous levels of 45.0–59.9 <math>\mu\text{g}/\text{dL}</math>.</li> </ul>	<p>In addition to the steps described above for lower blood lead levels on venous samples, perform the following:</p> <ul style="list-style-type: none"> <li>For children with venous blood lead levels of 60.0 <math>\mu\text{g}/\text{dL}</math> or greater, an environmental risk assessment will be scheduled within 48 hours.</li> </ul>

\* For individuals who receive services through a Tribe, services may be provided by Tribal public health rather than local public health.

## Process and Role of Public Health



\* For individuals who receive services through a Tribe, services may be provided by Tribal public health rather than local public health.

## Lead Contacts

### MDH Lead Contacts:

- Call 651-201-4892 for questions regarding:
  - elevated blood lead case management
  - guidance on blood lead testing, treatment, and follow-up
- Call 651-201-4919 or email [health.bloodleadresults@state.mn.us](mailto:health.bloodleadresults@state.mn.us) for questions regarding:
  - reporting blood lead results to MDH
  - incoming/outgoing blood lead results
- Fax number to send blood lead results: 800-388-9389
- Mailing address: MN Department of Health (MDH), Health Risk Intervention Unit, P.O. Box 64975, St. Paul, MN 55164-0975

### MN Regional Poison Center ([mnpoison.org/](http://mnpoison.org/)):

- 1-800-222-1222 or [webpoisoncontrol.org](http://webpoisoncontrol.org)

### Region 5 Pediatric Environmental Health Specialty Unit (PEHSU)

#### ([www.pehsu.net/findhelp/region5/](http://www.pehsu.net/findhelp/region5/)):

- 312-355-0597 or [ChildrensEnviro@uic.edu](mailto:ChildrensEnviro@uic.edu)

## Referrals

Referrals should be made to services as appropriate. Types of referrals to consider, described in the full case management and treatment guidelines, are:

- Medical assistance
- Housing resources
- Legal assistance
- Learning and development resources
- Nutritional resources
- Other local public health programs

## Resources

- [MDH Lead Fact Sheets and Brochures](http://www.health.state.mn.us/communities/environment/lead/fs/index.html) ([www.health.state.mn.us/communities/environment/lead/fs/index.html](http://www.health.state.mn.us/communities/environment/lead/fs/index.html))
- [MDH Blood Lead Level Guidelines](http://www.health.state.mn.us/communities/environment/lead/prof/guidelines.html) ([www.health.state.mn.us/communities/environment/lead/prof/guidelines.html](http://www.health.state.mn.us/communities/environment/lead/prof/guidelines.html)) include:
  - Childhood Blood Lead Screening, Treatment, and Case Management Guidelines for MN
  - Blood Lead Guidelines for Pregnant & Breastfeeding Women in MN
- [MDH Reporting Blood Lead Test Results](http://www.health.state.mn.us/communities/environment/lead/reporting.html) ([www.health.state.mn.us/communities/environment/lead/reporting.html](http://www.health.state.mn.us/communities/environment/lead/reporting.html))
- [MDH Child and Teen Checkups Lead Testing Factsheet](http://www.health.state.mn.us/docs/people/childrenyouth/ctc/lead.pdf) ([www.health.state.mn.us/docs/people/childrenyouth/ctc/lead.pdf](http://www.health.state.mn.us/docs/people/childrenyouth/ctc/lead.pdf))
- PEHSU [Lead](http://www.pehsu.net/health_professionals_families/health_topics/lead) ([www.pehsu.net/health\\_professionals\\_families/health\\_topics/lead](http://www.pehsu.net/health_professionals_families/health_topics/lead))

## Sources of Lead

General categories of common sources of lead are below. See full case management or treatment guidelines for more information.

- Paint and dust
- Renovation
- Soil and water
- Lead-related occupations and hobbies
- Spices, candy, game meat, other food
- Imported or handmade pottery, ceramics, or other cookware
- Cosmetics and religious powders, traditional or alternative remedies
- Exposures that occurred in another country
- Pica behavior
- Jewelry, amulets, toys, keys, fishing sinkers, chalk, and furniture