

Nebraska Department of Health and Human Services

Health Alert Network

UPDATE

December 12, 2023

Updated Blood Lead Testing Guidelines

Background

Childhood lead poisoning continues to be a public health concern in Nebraska and in the United States. No safe blood lead level exists, and even small amounts of lead in the blood can result in damage to the brain and nervous system, slowed growth and development, and learning and behavior problems. Pregnant women and adults exposed to lead are also at a higher risk of several adverse health outcomes.

The most common ways that children in Nebraska are exposed to lead include from deteriorated lead-based paint, lead-contaminated dust from paint and soil, and contaminated food and spices. Children can also be exposed to lead from other sources, such as traditional medicines and powders, take-home exposures from parent's jobs and hobbies, toys and jewelry, lead-glazed pottery and cookware, and drinking water from lead pipes.

Though lead can be found in many places in the environment, lead exposure is preventable. Blood lead testing for lead exposure is a critical prevention tool, as lead exposure is often asymptomatic. The amount of lead measured in blood, blood lead level (BLL), is used as an indicator of exposure to lead. According to preliminary Nebraska DHHS data for 2022, 548 children under age 6 (1.8% of children tested) had a confirmed BLL at or above the current reference value of 3.5 micrograms per deciliter ($\mu\text{g}/\text{dL}$).

2023 Updates to Blood Lead Testing Guidelines

The Nebraska DHHS Division of Public Health issues statewide blood lead testing guidelines per Neb. Rev. Stat. § 71-2518. The 2023 Nebraska Blood Lead Testing Plan was updated to provide more current recommendations for blood lead testing, which were last revised in 2015. The 2023 Plan also includes testing recommendations for other populations, lead exposure sources, and medical management recommendations.

Please refer to the Nebraska Blood Lead Testing Plan for more comprehensive, detailed information. The Plan is available at <https://dhhs.ne.gov/leadhcp>. This page also includes links to additional resources and tools for health professionals.

Recommendations for Health Care Providers: Testing in Children <72 months (<6 years old)

- Assess children under 6 years old (9–71 months) for lead exposure risk at annual well child visits or more frequently, if necessary.
- Blood lead test children with any risk factor using risk questionnaire or criteria in the guidelines.
 - Blood Lead Testing Guidelines for Children: <https://dhhs.ne.gov/LeadDocs/Lead-Testing-Guidelines.pdf>
 - Blood Lead Testing Algorithm: <https://dhhs.ne.gov/LeadDocs/Lead-Testing-Algorithm.pdf>
- If a risk factor is identified or criteria met, test at 12 and again 24 months. For children aged 2 through 5 years old, test at least once if not previously tested.
- Some providers may choose to test all children at 12 and 24 months.
- Local health departments may recommend blood lead testing for additional ages or populations.
- If screening capillary result is $\geq 3.5 \mu\text{g}/\text{dL}$, providers should collect a confirmatory venous sample.

Summary of Blood Lead Testing Guidelines: Children <72 months (<6 years old)

Blood Lead Test if:

- Child enrolled in Medicaid (Required per Medicaid), OR
- Child lives in a high risk zip code, OR
- Child with lead exposure risk identified on a risk questionnaire.

When to Test:

- Blood lead test at 12 and again at 24 months of age.
- Test any child 2–5 years of age at least once if not previously tested.

- Nebraska Statutes identifies three criteria for testing children: 1) enrolled in Medicaid; 2) living in a zip code with high prevalence of children with elevated blood lead levels; and 3) any other children identified with a risk factor based on a screening questionnaire (Neb. Rev. Stat. § 71-251).
- Children Enrolled in Medicaid: Blood lead testing is **required** at 12 and again at 24 months of age, or at least once for children 2–5 years of age if not previously tested. Required under the Nebraska Medicaid regulations (471 NAC 33) and by CMS.
- Children Living in High Risk Zip Code: Testing is recommended for children living in zip codes with a high prevalence of children with elevated blood lead levels. The list of High Risk Zip Codes was updated in 2023 and includes 125 zip codes.
 - High Risk Zip Codes List: <https://dhhs.ne.gov/LeadDocs/Lead-Testing-Zip-Codes.pdf>
- Children with ≥ 1 Risk Factor Identified on a Risk Questionnaire: A risk questionnaire is designed to identify risks not addressed by the other criteria. The questionnaire should be administered to parent or caregiver at annual well child visits. Test if answer is “Yes” or “Don’t Know” to any of the questions.
 - Risk Questionnaire for Parents: <https://dhhs.ne.gov/LeadDocs/Lead-Risk-Questionnaire.pdf>

Recommendations for Health Care Providers: Testing in Other Populations

- Pregnant Women: The CDC and the American College of Obstetricians and Gynecologists recommend screening pregnant women for lead exposure risks and performing a blood lead test if any risk factors are identified. A risk questionnaire should be administered at the earliest prenatal visit. A blood lead test is recommended if answer is “Yes” or “Don’t Know” to any of the questions.
 - Recommendations for Pregnant Women: <https://dhhs.ne.gov/LeadDocs/Lead-Testing-Guidelines-Pregnant.pdf>
- Newly Arrived Refugees: CDC recommends a blood lead test for all newly arrived refugee children ages 6 months to 16 years. Children should receive a repeat test 3 to 6 months after placement in a permanent residence, regardless of initial results.
 - CDC Guidelines: <https://www.cdc.gov/immigrantrefugeehealth/guidelines/lead-guidelines.html>
- Participants in WIC: Federal policy requires that upon enrollment of a child in the WIC Program, the parent must be asked if the child has had a blood lead test. If the child has not had a test, they must be referred to programs where they can obtain such a test.
- Adults with Occupational or Hobby Exposures: Adults who work with lead through their job or hobbies should be monitored for lead exposure with blood lead testing.
- Other Patients to Consider Blood Lead Testing: Patients with history of ingesting non-food items or pica behavior; Children with neurodevelopmental disabilities such as autism, ADHD, or learning delays; or Parent or patient requests blood lead test.

Blood Lead Reference Value

- Nebraska DHHS uses the current CDC Blood Lead Reference Value of 3.5 µg/dL to identify a person with an elevated blood lead level. The reference value is a screening tool to identify children who have

higher levels of lead in their blood compared with most children. For more information, visit: <https://www.cdc.gov/nceh/lead/data/blood-lead-reference-value.htm>

Reporting Requirements

- Reporting of all blood lead level tests regardless of the result or patient age is required per Nebraska Reportable Disease Regulations (173 NAC 1). Health care providers, clinics, and laboratories are required to submit reports of blood lead tests to Nebraska DHHS within seven (7) days of testing. A physician's duty to report may be satisfied by a laboratory.

Management Recommendations for Blood Lead Levels

- Medical management should be provided for all persons with a confirmed BLL of 3.5 µg/dL or higher.
- In children, management of lead exposure should include: 1) Finding and eliminating the source of the lead; 2) Instruction in personal/household/workplace hygiene; 3) Optimizing diet and nutritional status; 4) Repeat testing to monitor blood lead level.
- Clinicians should coordinate management with their local health department (LHD). LHDs can provide follow-up communication on public health case management activities.
- For complete blood lead management recommendations:
 - Medical Management: <https://dhhs.ne.gov/LeadDocs/Lead-Medical-Management-Guidelines.pdf>
 - Case Management: <https://dhhs.ne.gov/LeadDocs/Lead-Case-Management-Guidelines.pdf>
 - Pregnant Women: <https://dhhs.ne.gov/LeadDocs/Lead-Testing-Guidelines-Pregnant.pdf>
 - Adults: <https://dhhs.ne.gov/LeadDocs/Lead-Adult-Guidelines.pdf>

Lead Exposure Prevention and Anticipatory Guidance

- Provide anticipatory guidance on lead exposure during well child visits and after positive BLL.
- Include education about common sources of lead exposure and how to prevent further exposure.
- Adults can help reduce children's lead exposure by:
 - Frequently washing children's hands (especially before meals) and cleaning children's toys.
- For children living homes built before 1978, adults can reduce lead exposure from lead paint by:
 - Regularly wet-wiping windows and windowsills and wet-mopping floors.
 - Avoiding repairs and construction projects that may create lead-based paint dust.
 - Covering chipping or peeling paint to keep lead from spreading to surrounding areas.
 - Using approved methods for removing lead hazards from the home and using contractors certified by the Environmental Protection Agency when repairs are needed.
- Detailed anticipatory guidance, see: <https://dhhs.ne.gov/LeadDocs/Lead-Anticipatory-Guidance.pdf>
- Prevention information for parents: <https://dhhs.ne.gov/Lead-Prevention>

Nebraska Contact Information

- For general questions about recommendations, management guidelines, or reporting, contact:
 - Nebraska Lead Poisoning Prevention Program at 402-471-2937 or dhhs.epi@nebraska.gov
- For lead case consultation and referrals, contact your Local Health Department:
 - Douglas County Health Department Lead Program: 402-444-1881
<https://www.douglascountyhealth.com/lead-poisoning-prevention>
 - Greater Nebraska: Find local health department at www.dhhs.ne.gov/lhd

For More Information

- Nebraska DHHS Lead Poisoning Prevention Home Page: <https://dhhs.ne.gov/lead>
- Lead Guidelines and Resources for Healthcare Providers: <https://dhhs.ne.gov/leadhcp>
- CDC Lead Poisoning Prevention: <https://www.cdc.gov/nceh/lead/>

Derry Stover, MPH
Epidemiologist
402-471-2822

Timothy Tesmer, MD
CMO Public Health
402-471-8566

Matthew Donahue, MD
State Epidemiologist
402-471-2937

Blood Lead Testing Guidelines

Children

Recommendations for Nebraska Healthcare Providers

- > Children under 6 years old (9–71 months) should be assessed for lead exposure risk at annual well child visits or more frequently, if necessary.
- > Blood lead test children with any risk factor identified on the questionnaire below.
 - > **Test** at 12 months and again at 24 months (1 and 2 years).
 - > **Test** at 24–71 months old (2–5 years) at least once if not previously tested.

Lead Risk Questionnaire for Children

If **Yes or Don't Know** to any question, blood lead test is recommended per age guidelines above.

1. Is child enrolled in Medicaid? **Testing required at 12 and 24 months of age per Medicaid**
2. Does child live in a high risk zip code? **Zip code list:** www.dhhs.ne.gov/lead/hcp
3. Does child live in or often visit a home built before 1950?
4. Does child live in or often visit a home built before 1978 that has been remodeled or renovated within the last year?
5. Does child have a sibling or playmate with lead poisoning or elevated blood lead level?
6. Does child live with an adult with a job or hobby that involves exposure to lead?
 - Metal manufacturing and foundries, welding, battery recycling
 - Building repair, renovation, and painting
 - Ammunition production, firing ranges, casting bullets
 - Making stained glass, pottery and glazing, auto repair
7. Does child's family use products from other counties that may contain lead? Such as traditional medicines, cosmetics, spices, or glazed pottery?
 - Traditional medicines: Ayurvedic medicine, bali gali, pay-loo-ah
 - Cosmetics and powders: surma, kohl, sindoor, kumkuma
 - Spices imported or brought in from another county
 - Glazed pottery and imported cookware
8. Is child a refugee, migrant, immigrant, foreign adoptee, or in foster care?

Additional Information

- > Capillary screening tests ≥ 3.5 $\mu\text{g}/\text{dL}$ should be confirmed with a venous test.
- > All blood lead levels are required to be reported to DHHS (regardless of the result).
- > Local health departments may recommend blood lead testing for additional populations.
- > Additional guidance on blood lead testing and management: www.dhhs.ne.gov/leadhcp

Nebraska High Risk Zip Codes

For Lead Testing in Children Under 6 Years Old

High risk zip codes for targeted blood lead testing in Nebraska children are listed by city.*

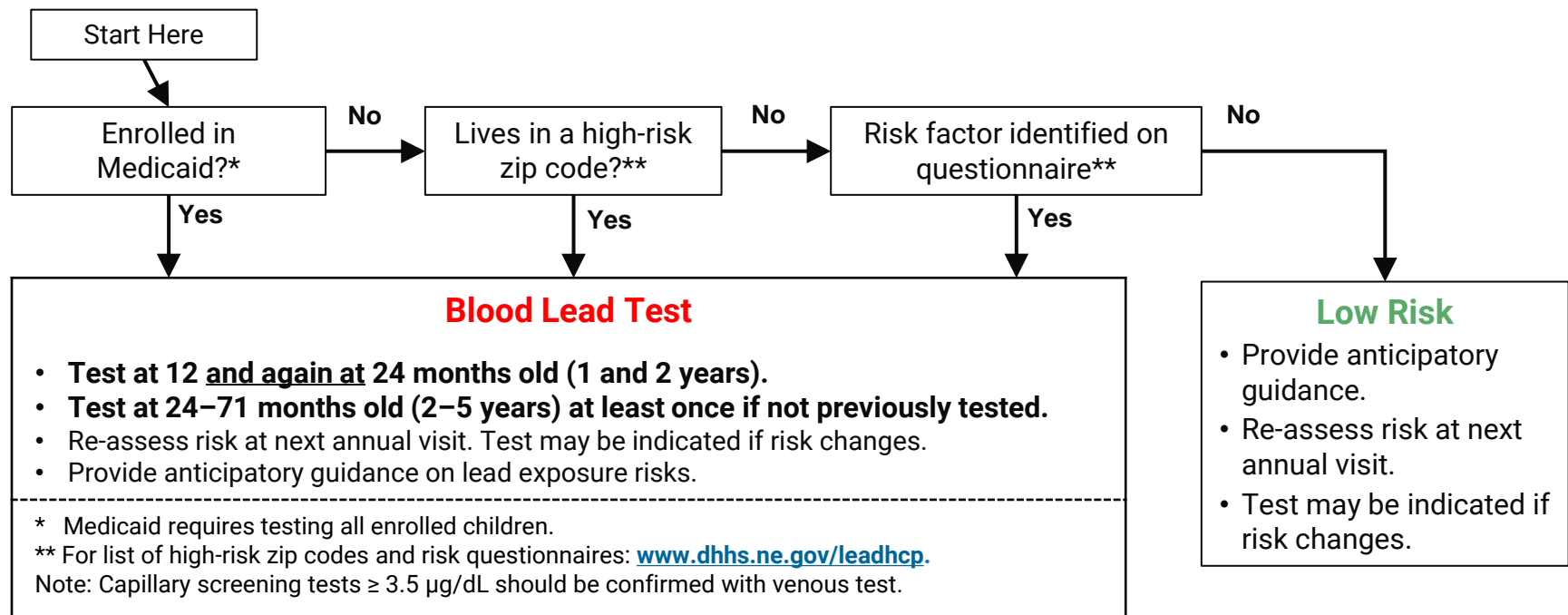
For complete lead testing recommendations, visit: www.dhhs.ne.gov/leadhcp.

City	Zip	City	Zip	City	Zip
Ainsworth	69210	Fairfield	68938	Omaha	68102, 68104, 68105, 68106, 68107, 68108, 68110, 68111, 68112, 68131, 68132
Arnold	69120	Fordyce	68736		
Ashby	69333	Franklin	68939		
Auburn	68305	Garland	68360		
Avoca	68307	Geneva	68361		
Beaver City	68926	Gibbon	68840		
Bee	68314	Grand Island	68801		
Beemer	68716	Gresham	68367		
Bladen	68928	Hardy	68943		
Blue Springs	68318	Hastings	68901		
Bradshaw	68319	Hebron	68370		
Bridgeport	69336	Holstein	68950		
Brock	68320	Howells	68641		
Burr	68324	Hubbell	68375		
Byron	68325	Humboldt	68376		
Cairo	68824	Johnson	68378	Orchard	68764
Callaway	68825	Kenesaw	68956	Osceola	68651
Campbell	68932	Lawrence	68957	Oshkosh	69154
Carleton	68326	Leigh	68643	Otoe	68417
Carroll	68723	Lincoln	68502, 68503, 68508, 68510	Overton	68863
Cedar Bluffs	68015		Lindsay	68644	Oxford
Cedar Rapids	68627	Litchfield	68852	Pawnee City	68420
Central City	68826	Loup City	68853	Paxton	69155
Ceresco	68017	Lyman	69352	Pender	68047
Clatonia	68328	Madison	68748	Plainview	68769
Clay Center	68933	McCool	68401	Polk	68654
Comstock	68828	Junction		68401	Primrose
Craig	68019	Mead	68041	Raymond	68428
Curtis	69025	Merna	68856	Red Cloud	68970
Dannebrog	68831	Milligan	68406	Rushville	69360
Dawson	68337	Mitchell	69357	Saint Edward	68660
Deshler	68340	Monroe	68647	Scottsbluff	69361
Dunbar	68346	Nebraska City	68410	Scribner	68057
Duncan	68634		Nehawka	68413	Spalding
Elba	68835	Newman Grove	68758	Stanton	68779
Elm Creek	68836	Oakland	68045	Sterling	68443
Fairbury	68352	Ohiova	68416	Stromsburg	68666
				Superior	68978
				Syracuse	68446
				Talmage	68448
				Tilden	68781
				Trenton	69044
				Trumbull	68980
				Utica	68456
				Wahoo	68066
				Walthill	68067
				Wauneta	69045
				Wisner	68791
				Wolbach	68882
				Wood River	68883

*High risk zip codes are defined as having higher than average prevalence of children with elevated blood lead levels. For more information on the methodology, see the blood lead testing plan at www.dhhs.ne.gov/leadhcp.

Nebraska Blood Lead Testing Clinical Algorithm

Children < 6 years old



Other Patients to Consider Blood Lead Testing

- Newly-arrived refugees and immigrants.
- Patient with history of ingesting non-food items or pica.
- Child with neurodevelopmental disabilities such as autism, ADHD, or learning delays.
- Pregnant women with one or more lead exposure risk factors identified on questionnaire.**
- Adults with lead exposure from occupation or hobby.
- Parent or patient requests blood lead test.

Additional Information

- For additional guidance on blood lead testing and management: www.dhhs.ne.gov/leadhcp
- Questions? Childhood Lead Poisoning Prevention Program: dhhs.epi@nebraska.gov or 402-471-2937.
- For case referrals and local guidance, contact local health department www.dhhs.ne.gov/lhd
- Local health departments may recommend blood lead testing for additional populations.