

VIRGINIA BLOOD LEAD TESTING AND CASE MANAGEMENT GUIDELINES

**Virginia Department of Health
Childhood Lead Poisoning Prevention Program
Office of Family Health Services**

BLOOD LEAD TESTING CRITERIA^{1,2}

Virginia is a **targeted testing state**, meaning children shall be tested if they meet any of the criteria noted below.

TESTING CRITERIA

All Medicaid-enrolled children are required to be tested at both 12 and 24 months of age

Children at 12 and 24 months of age are required to be tested **if they meet any of the criteria in the gray box below**

Children over the age of 24 months, up to the age of 72 months, **who have not** previously been tested and meet **any** of the criteria below, **OR** who have experienced a change since testing (that has resulted in an increased risk) are required to be tested

*Children in any of the following **risk categories** should have their blood tested at **12 and 24 months**:*

1. Eligible for or receiving benefits from Medicaid or WIC;
2. Living in or regularly visiting housing or child care facility built before 1960;
3. Living in or regularly visiting housing built before 1978 with peeling or chipping paint or recent (within the last 6 months), ongoing or planned renovations;
4. Living with or regularly visiting housing in which one or more persons have evidence of lead exposure;
5. Living with an adult whose job or hobby involves exposure to lead;
6. Living near an active lead smelter, battery recycling plant, or other industry likely to release lead;
7. The child's parent or guardian requests the child's blood be tested due to any suspected exposure;
8. Recent refugee, immigrant, or child adopted from outside the U.S.

SCHEDULE FOR OBTAINING A CONFIRMATORY VENOUS SAMPLE^{1,2,3,4,6,9}

SCREENING TEST [†] RESULT (µg/dL)	PERFORM CONFIRMATORY TEST*
≥ 3.5 - 9	Within 1 to 3 months
10 - 19	Within 1 week to 1 month
20 - 44	Within 2 weeks
45 - 59	Within 48 hours
60 - 69	Within 24 hours
≥ 70	Immediately as an emergency lab test

*The higher the blood lead level (BLL) on the initial screening test, the more urgent the need for confirmatory testing using a venous sample. If the initial blood lead test collected is a venous specimen type, the lead level is considered confirmed without additional testing.

†**Screening test:** A blood lead test for a child age <72 months who previously did not have a confirmed elevated BLL.

***NOTE:** Confirmatory testing may be conducted earlier than the recommended time frame in the table above, as resources allow.*

***NOTE:** No safe level of lead in blood has been identified. Providers should communicate any detectable results with parents/guardians, use best clinical judgment to assess each child, and coordinate follow up testing and care coordination.*

**GUIDELINES FOR MANAGEMENT OF CHILDREN WITH CONFIRMED*
BLOOD LEAD LEVELS (BLL) \geq 3.5 μ g/dL^{2,3,4,6,7}**

BLOOD LEAD LEVEL (μ g/dL)	ACTION	TIME FRAME
3.5 - 9.9	<p>Local Health Department Staff[§]:</p> <ul style="list-style-type: none"> Conduct a follow-up phone call to the family of the case child to educate about lead poisoning prevention protocols and next steps (as resources permit) <p>Child's Health Care Provider:</p> <ul style="list-style-type: none"> Provide educational materials^{§§}, including dietary and environmental information (as resources permit) Monitor blood lead level with follow-up test 	<p>Within 3 days, as resources permit[†]</p> <p>Within 3 months</p>
10 - 14	<p>Local Health Department Staff:</p> <ul style="list-style-type: none"> Coordinate with health care provider to provide lead educational materials/lead poisoning prevention education, including dietary and environmental information. Perform telephone Childhood Lead Assessment^{††} Coordinate with health care provider to ensure follow-up blood lead testing is conducted and the blood lead level is not rising 	<p>Within 30 days</p>
15 - 19	<p>Local Health Department Staff:</p> <ul style="list-style-type: none"> Coordinate with health care provider to provide lead educational materials/lead poisoning prevention education, including dietary and environmental information Perform in-home Childhood Lead Assessment Coordinate with health care provider to ensure follow-up blood lead testing is conducted and the blood lead level is not rising <p>AND</p> <ul style="list-style-type: none"> If the follow-up blood lead level is 15 (μg/dL) or higher, coordinate an in-home Environmental Investigation^{**} by a Licensed Risk Assessor^{††} 	<p>Within 2 weeks</p>

20 - 44	<p>Local Health Department Staff:</p> <ul style="list-style-type: none"> • Coordinate with health care provider to provide lead educational materials/lead poisoning prevention education, including dietary and environmental information • Perform in-home Childhood Lead Assessment • Coordinate with health care provider to ensure follow-up blood lead testing is conducted and the blood lead level is not rising • Coordinate an in-home Environmental Investigation by a Licensed Risk Assessor^{††} 	Within 1 week
45 - 69	<p>Local Health Department Staff:</p> <ul style="list-style-type: none"> • All above actions, plus: • Coordinate with health care provider to determine need for chelation • Coordinate with health care provider to contact the Pediatric Environmental Health Specialty Unit at (610-519-3478), Virginia Poison Center at 1-800-222-1222, or the National Lead Information Center at 1-800-424-LEAD [5323] for consultation and assistance regarding chelation, if needed 	Within 48 hours
70+	<p>Local Health Department Staff:</p> <ul style="list-style-type: none"> • All above actions, plus: • Coordinate with health care provider to hospitalize child and begin medical treatment (chelation therapy as appropriate) immediately • Coordinate with health care provider to contact the Pediatric Environmental Health Specialty Unit at 610-519-3478, Virginia Poison Center at 1-800-222-1222, or the National Lead Information Center at 1-800-424-LEAD [5323] for consultation and assistance regarding chelation, if needed 	Immediately, within 24 hours

***Confirmed BLL \geq CDC's blood lead reference value:** A child with one venous blood test \geq 3.5 $\mu\text{g}/\text{dL}$ or two capillary blood tests \geq 3.5 $\mu\text{g}/\text{dL}$ drawn within 12 weeks of each other. *The second capillary test must occur at least 48 hours after the initial capillary test.*

[†]**The 3-day follow-up window:** is based on best practices from [Virginia's Regulations for Disease Reporting and Control](#). Follow-up calls to the family of the case child should be conducted as soon as possible, based on the resources and staff available. If resources/staff are limited, aim to complete as soon as resources permit. Staff may utilize the recommended [phone call script](#) when making the follow-up phone call.

§**Local Health Department Staff** can include a Public Health Nurse, Case Manager, Epidemiologist, Environmental Health Specialist, or Program Manager, based on the health department's resources and availability.

¶**A Childhood Lead Assessment** is an umbrella term for both the telephone and in-home visual assessments for potential lead sources. At blood lead levels 10-14 µg/dL, an in-home Childhood Lead Assessment may be conducted following the telephone Childhood Lead Assessment if additional information is needed.

****An Environmental Investigation** checks for all potential lead exposure sources (including but not limited to lead-based paint) in a dwelling unit and may include a risk assessment, when needed.

††**Find a Licensed Risk Assessor:**

- [Certified Inspection, Risk Assessment, and Abatement Lookup Tool](#)

§§**Educational Parent Packet:**

- This packet is composed of various educational materials that may be provided to the family.

NOTE: Refer to VDH Medical Case Management for Childhood Blood Lead Levels document for additional clinical considerations at each blood lead level.

SCHEDULE FOR FOLLOW-UP BLOOD LEAD TESTING^{4,7}

Venous Blood Lead Level (µg/dL)	Early Follow-Up Testing (2-4 tests after identification)	Later Follow-Up Testing (after the blood lead level is declining)
3.5 - 9	3 months	6 - 9 months
10 - 19	1 - 3 months	3 - 6 months
20 - 44	2 weeks - 1 month	1 - 3 months
45+	As soon as possible	As soon as possible

Some case managers or healthcare providers may choose to repeat blood lead tests on all new patients within a month to confirm that their BLL is decreasing.

Reference: [CDC Recommended Action Based on Blood Lead Level](#)

TESTING INFORMATION FOR SPECIAL POPULATIONS

Refugees and Newcomers⁵

The Virginia Department of Health recommends testing all children at 12 and 24 months old if they fall under the risk criteria noted on page 2. However, refugees, asylum seekers, and newcomers to the United States may have a higher risk of lead exposure depending on their country of origin.

The Virginia Department of Health Childhood Lead Poisoning Prevention Program has adopted the CDC's recommendations for testing and follow-up in this population: [Screening for Lead during the Domestic Medical Examination for Newly Arrived Refugees](#)

This guidance recommends conducting a follow-up test for:

- a) All refugee infants and children ≤ 6 years of age, regardless of initial screening result
- b) Refugee children and adolescents 7–16 years of age who have blood lead levels at or above 3.5 $\mu\text{g}/\text{dL}$, and
- c) any child older than 7 years of age who has a risk factor (e.g., sibling with blood lead level at or above 3.5 $\mu\text{g}/\text{dL}$, environmental exposure risk factors) regardless of initial test result.

Based on the result of this follow-up test: VDH recommends proceeding to the VDH case management guidelines by blood lead level located on pages 4-5 and following these guidelines for **all refugee children under the age of 16.**

Pregnant and Lactating Women⁹

Lead in blood during pregnancy has been associated with adverse outcomes for both maternal and fetal health.

Pregnant women who are at increased risk for lead exposure should be screened for lead.

Pregnant women are at an increased risk of being exposed to lead if they:

- Live in a home built before 1978.
- Are a recent immigrant or refugee.
- Use imported pottery or ceramics to prepare and store food.
- Have old plumbing and pipes in their home.
- Live with someone who has a job or hobby that may expose them to lead, such as welding, metalwork, building renovation, stained glass, casting, or soldering.
- Have developed pica during their pregnancy.
- Use traditional folk remedies or cosmetics.

Please refer to the [American College of Obstetricians and Gynecologists Lead Screening During Pregnancy and Lactation](#) for recommended testing and follow up schedule.

VIRGINIA BLOOD LEAD TESTING REPORTING⁸

On October 20, 2016, the Virginia Department of Health modified its disease reporting requirements to : *“Lead, reportable levels” means any detectable blood lead level in children 15 years of age and younger and levels greater than or equal to 5 µg/dL in persons older than 15 years of age.*

The current requirements are as follows:

- **All** blood lead levels in children 15 years of age and younger should be reported to the VDH.
- All blood lead levels in persons older than 15 years of age with a blood lead level **greater than or equal to 5 µg/dL** should be reported to the VDH.

Methods for reporting blood lead test results to VDH:

- Fill out the online VDH EPI-1 Form: [Virginia’s Confidential Morbidity Report Portal](#), or
- Fax the report to **804-864-8102**

BLOOD LEAD LEVEL CASE CLOSURE GUIDELINES

Routine Cases

A case should be closed after two consecutive venous blood levels below 10 µg/dL for all children less than 16 years old.

In certain cases of chronic exposure, lead leaches from the skeletal system into the blood and it takes longer for blood lead levels to drop. In these cases, continue to follow-up the case according to schedule (based on the BLL) for one year. Follow-up may be done via a phone call in which VDH staff can inquire about any changes in the patient's condition, any potential ongoing lead exposures, and lead prevention protocols. After one year, VDH staff may check in at six-month intervals until the levels have decreased to two consecutive venous levels below 10 µg/dL.

Once the child's blood lead level has met the case closure criteria, the local health department staff should notify the child's caregiver that:

- the child's blood lead level has reached an acceptable level for case closure and
- follow-up care coordination will be suspended unless there is a change in the child's environmental risk factors

Non-Compliant Cases

All attempts need to be made to contact the caregiver; more intense follow-up efforts are encouraged as time and staff permits.

For non-compliant cases:

- Document **three attempts** to contact the family with no response (ex: letters sent, phone calls made, home visits denied, failure of three consecutive lead clinic or venipuncture appointments).
- If the child's blood lead level is **30 µg/dL or higher** and **three** different contact attempts have been made within ten business days with no response from the family, consider contacting Child Protective Services (CPS) (after consultation with health care provider and nursing supervisor). Not complying with requests for an environmental investigation or keeping follow-up testing appointments can be classified as child neglect.
- Review by the nurse supervisor of all potential closures of lead cases is required. Closure of any case with venous blood lead levels of 30 µg/dL or higher must be discussed with and signed off by the nursing supervisor.

BLOOD LEAD TESTING BEST PRACTICES¹

- Medical professionals should take careful history regarding possible lead exposure at each well-child visit and provide lead poisoning prevention materials to the family when needed.
- Testing may be performed by venipuncture or capillary. The use of a CLIA-waived lead testing device approved by the CDC and the FDA may be used as a “screening” test, and any level above 3.5 µg/dL needs to be confirmed by submitting a venous sample to a CLIA-approved laboratory or taking two capillary samples no less than 48 hours apart and no greater than 12 weeks apart.

RESOURCES

- [CDC Steps for Collecting Fingerstick Capillary Blood](#)
- [CDC Laboratory Considerations for Blood Lead Samples](#)
- [CLIA-Certified Laboratory Lookup Tool](#)

REFERENCES

1. § 32.1-46.1 of the Code of Virginia. Board to establish protocol for identification of children with elevated blood-lead levels.
2. 12VAC5-90 et seq.; Regulations for Disease Reporting and Control (12VAC5-90- 215. Schedule and criteria for and confirmation of blood lead testing and information to be provided).
3. Centers for Disease Control and Prevention, Advisory Committee on Childhood Lead Poisoning. Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention. January 4, 2012.
4. Centers for Disease Control and Prevention. (2021, October 27). *Blood Lead Reference Value*. Childhood Lead Poisoning Prevention Program. <https://www.cdc.gov/nceh/lead/data/blood-lead-reference-value.htm>
5. Centers for Disease Control and Prevention. (2022, February 23). *Screening for Lead during the Domestic Medical Examination for Newly Arrived Refugees*. Immigrant, Refugee, and Migrant Health. <https://www.cdc.gov/immigrantrefugeehealth/guidelines/lead-guidelines.html>
6. Centers for Disease Control and Prevention. (2021, October 27). *Standard Surveillance Definitions and Classifications*. Childhood Lead Poisoning Prevention. <https://www.cdc.gov/nceh/lead/data/case-definitions-classifications.htm>
7. Centers for Disease Control and Prevention. (2022, June 17). *Recommended Follow Up Action Based on Blood Lead Level*. Childhood Lead Poisoning Prevention Program. <https://www.cdc.gov/nceh/lead/advisory/acclpp/actions-blls.htm>
8. Commonwealth of Virginia State Board of Health. Regulations for Disease Reporting and Control. October 2016.
9. Committee on Obstetric Practice. (2012). Committee opinion No. 533: lead screening during pregnancy and lactation. *Obstetrics and gynecology*, 120(2 Pt 1), 416-420.
10. Pediatric Environmental Health Specialty Units. Recommendations on Management of Childhood Lead Exposure: A Resource for Clinicians. Last Updated Sep 2021.