Pediatric Blood Lead Testing and Follow-Up Information

Why are children screened for lead?

> "Today at least 4 million households have children living in them that are being exposed to high levels of lead. There are approximately half a million U.S. children ages 1-5 with blood lead levels above 5 micrograms per deciliter (mcg/dL), the reference level at which CDC recommends public health actions be initiated."
>
> Centers for Disease Control and Prevention

While adults and children may be affected by lead, young children are the most at risk for long-term effects from elevated blood lead levels. Children absorb lead more readily than adults. Lead exposure can affect the developing brains and organs of young children. Their normal activities, such as crawling on floors and hand-to-mouth behaviors can expose them to lead.

Because lead exposure often occurs without obvious symptoms, it is frequently unrecognized. To identify exposures to lead and prevent long-term effects of lead exposure, lead screening is recommended at well baby visits, particularly at ages 12 months and 24 months.

How and when are children in South Carolina tested for Lead?

- **Medicaid:**

  The Medicaid EPSDT Program requires that all enrolled children have a blood lead toxicity screening at 12 and 24 months of age. Providers have the option of obtaining the first lead test at 9 or 12 months of age.

  Medicaid also requires a lead toxicity screening for any child 36 to 72 months of age who has not previously been screened or who presents with symptoms of possible lead poisoning.

- **Head Start:**

  The Head Start program requires a lead screening test for any enrolling child if records of prior testing are not available.

- **Refugees:**

  The CDC recommends screening of all refugee children 6 months to 16 years of age, as soon as possible after arrival.

  Conduct an additional lead test on all children aged 6 months - 6 years within 3-6 months of placement in a permanent residence, regardless of the results of the initial lead test.

Pediatric Blood Lead Testing and Follow-Up Information

- **International Adoptees:**

  The CDC recommends that all internationally adopted children have a blood lead test during their first medical examination in the U.S. and at 12 and 24 months of age.

- **Lead Testing of Any Child** is recommended if the well-child history identifies any of the following risks:
  - lives in or regularly spends time in a house built before 1950, or a home built before 1978 that is undergoing remodeling currently or in past 6 months;
  - lives in or regularly visits a home with vinyl miniblinds made before 1997 or not labeled as "lead safe";
  - has a family member or playmate with elevated blood lead levels or lead poisoning diagnosis;
  - lives with an adult whose job or hobby involves working with lead (such as house painting, welding, auto body work, working with batteries, fishing, stained glass, or ceramics);
  - has pica, especially if observed eating paint chips, or soil/dirt; or
  - family reports use of imported food, remedies or cosmetics known or suspected to have lead content (kohl, azarcón, Greta, chapulines, etc.).

- **Specimens:**
  - Capillary (fingerstick) screening is acceptable for initial tests, or follow-up tests if initial results were <5 mcg/dL.
  - All follow-up of elevated blood lead levels (EBLLs) 5 mcg/dL or greater should be performed on venous blood.
  - Venous specimens should be sent for reference laboratory analysis.
  - Providers using point-of-care machines to test specimens for blood lead should follow manufacturers' instructions.

What is done when lead levels are equal to or above 5 mcg/dL in children?

All elevated capillary blood lead results should be confirmed with venous testing (see chart below). Children whose blood lead level (BLL) results from the fingerstick (capillary) test are greater than or equal to five micrograms of lead per deciliter of blood (≥5mcg/dL) should be followed by their primary care provider.

Management by the child's medical home, including health and nutrition education, lead risk discussions, developmental screening, and re-testing, begins at 5 mcg/dL. Providers can use DHEC's Screening Questionnaire for Lead Exposure (http://www.scdhec.gov/library/D-3511.pdf or http://www.scdhec.gov/library/D-

3511S.pdf for the Spanish version) to help families identify sources of lead in their home or other places visited by the child. Public health actions at this stage include tracking of surveillance results, and provision of lead education to providers. See below for qualifying blood lead levels for nursing case management and environmental assessments for children and families.

Follow-up on Screening Lab Test Results

If the initial BLL (finger stick) test is:	Collect a venous confirmatory test: *
Not detected, or 0-4.9 mcg/dL	NA. Repeat blood lead screening at next routine interval.
5-9 mcg/dL	Within 3 months
10-14 mcg/dL	Within 1 month
15-19 mcg/dL	Within 1 month
20-44 mcg/dL	Within 1 week
45-69 mcg/dL	Within 48 hours as an urgent lab test
≥70 mcg/dL	Immediately, as an emergency lab test

Retesting Follow-up on Venous /Confirmatory Lab Results

If the confirmed/ venous test result is:	Provide lead education and perform follow-up venous testing:	Continue venous testing as indicated below once levels begin to decrease: **
5-9 mcg/dL	Every 3-6 months until result is under 5 mcg/dL	
10-14 mcg/dL	Every 3 months for 2-4 tests	Continue testing every 6 months after EBLL begins to decrease, until level decreases to less than 5.
15-19 mcg/dL	Every 1-2 months for 2-4 tests	Continue testing every 3-6 months after EBLL begins to decrease. When the level decreases to 10-14 mcg/dL, test every 6 months until the level decreases to less than 5.

Pediatric Blood Lead Testing and Follow-Up Information

If the confirmed/ venous test result is:	Provide lead education and perform follow-up venous testing:	Continue venous testing as indicated below once levels begin to decrease: **
20-44 mcg/dL	Every 2-4 weeks for 2-4 tests	Continue testing monthly after BLL begins to decrease. When the level decreases to 15-19 mcg/dL, test every 3-6 months until the level decreases to less than 15. When the level decreases to 10-14 mcg/dL, test every 6 months until the level decreases to less than 5.
45-69 mcg/dL	Within 48 hours as an urgent lab test	Retest as indicated by chelation product, or at least every 2 weeks if child is not being chelated due to ongoing exposure. Test monthly once results decrease to the 20-44 mcg/dL range. When the level decreases to 15-19 mcg/dL, test every 3-6 months until the level decreases to less than 15. When the level decreases to 10-14 mcg/dL, test every 6 months until the level decreases to less than 5.
≥70 mcg/dL	Immediately, as an emergency lab test	If confirmed 70 or greater, hospitalize child and begin medical treatment immediately, including parenteral chelation therapy Retest per recommendations from chelation product

* If a point-of care analyzer is used for lead testing in the medical office, venous testing should be scheduled as soon as the family is given results of the initial lead test.

** Use the testing schedule for the child's initial confirmed value, unless a higher venous/confirmatory value is obtained in follow-up testing.

Pediatric Blood Lead Testing and Follow-Up Information

When are environmental assessments done?

An environmental assessment is an investigation of the child's home and/or areas in which the child routinely spends significant amounts of time. It can be offered to families when a child has a confirmed venous BLL result **≥10** mcg/dL. DHEC can also provide nursing case management for children with confirmed EBLLs of 10 mcg/dL or greater.

How are lead tests reported to DHEC?

- **All blood lead testing results are reportable to DHEC from medical offices, hospitals, and labs when a test is done for an SC resident.**
  - Lead results other than blood are not reportable to DHEC.
  - Providers who send lead specimens out for processing at reference laboratories do not need to submit these results to DHEC when received.
  - Providers who perform lead analysis in the medical office using a point of care machine (e.g., the Lead Care II) should assure that these results are sent to DHEC.
  - Results are reportable regardless of age of the person being tested, the type of test (capillary or venous), where the test was performed (laboratory or point-of-care), or the result obtained.
- Reports should include:
  - Identifying/demographic information for the patient, including name, address, phone, county, date of birth, race/ethnicity, sex
  - Reporting source (lab, medical office, hospital) and person making report
  - Ordering provider, office, phone number
  - Lab/office where test was performed
  - Collection date
  - Specimen source – capillary fingerstick test or venous test
  - Numerical or quantifiable result (e.g., 10.4 mcg/dL, <2.2 mcg/dL, "none detected"), not a descriptor (e.g., low, high, negative)
- The DHEC 1129 Disease Reporting Form (http://www.scdhec.gov/library/D-1129.pdf) may be used to submit lead reports, or other forms may be used so long as the required data above are included.

Reports may be submitted via:

Mail:	Bureau of Health Improvement and Equity, Lead Surveillance Sims-Aycock Building, 2600 Bull Street, Columbia, SC 29201
Fax:	803-898-3236 (it is recommended that an initial test fax be sent prior to sending patient information to DHEC via fax)
Email, FTP:	Call 803-898-3641 to establish electronic reporting

Pediatric Blood Lead Testing and Follow-Up Information

Additional information on lead reporting is available from DHEC's List of Reportable Conditions: http://www.scdhec.gov/Library/CR-009025.pdf

How can I get more information?

If you have any questions or would like additional information, please contact SC DHEC's Division of Children's Health and Perinatal Services at 803-898-0767 or call the DHEC Lead Line: 1-866-4NO-LEAD.