

Diagnosis and Management of Lead Toxicity in Children

Blood lead levels should be tested at least at one, two and three years of age, in all children living in Philadelphia (1) (2)

| Blood Lead Level (BLL) (mcg/dl) | Medical Intervention | Other Actions |
|---------------------------------|--|--|
| 0 - 9 (Class I) | <ul style="list-style-type: none"> If the child is at high risk (3, 4), start screening at 9-12 months, and recheck BLL q. 6 months. | <ul style="list-style-type: none"> Discuss & assess the possible sources of lead Nutritional counseling for adequate iron and calcium intake Parent education about exposure prevention |
| 10 - 14 (Class IIA) | <ul style="list-style-type: none"> Recheck venous BLL within 3 months (1, 4, 5), and within 6 weeks if child less than a year old | <ul style="list-style-type: none"> And report to CLPPP(6) for case management and follow up |
| 15 - 19 (Class IIB) | <ul style="list-style-type: none"> Recheck BLL within 6 weeks Evaluate for iron deficiency | <ul style="list-style-type: none"> And report to the CLPPP (6) for case management, lead hazard reduction, and follow-up |
| 20- 44 (Class III) | <ul style="list-style-type: none"> Recheck venous BLL within 1-2 weeks (1, 5) Screen for iron deficiency Close medical attention | <ul style="list-style-type: none"> And report to CLPPP (6) within 72 hours of receiving the lab report |
| 45-69 (Class IV) | <ul style="list-style-type: none"> Recheck BLL (1) and begin chelation therapy with 'Succimer' orally or I.V. infusion of 'CaNa₂ EDTA' (8) | <ul style="list-style-type: none"> And report to CLPPP (6) within 48 hours of receiving the lab report |
| 70 and above (Class V) | <ul style="list-style-type: none"> Medical Emergency. Hospitalize and treat with 'BAL' and CaNa₂EDTA (9,10) | <ul style="list-style-type: none"> And report to CLPPP (6) within 24 hours of receiving the lab report |

Symptomatic With or Without Acute Lead Encephalopathy

Proceed as Class V patients, regardless of BLL

- All elevated capillary BLLs should be confirmed by a venous sample.
- Older children up to 6 years who were never screened for BLL should be screened.
- High risk children include those who are from low income families; of minority status; live in a pre-1960 house with peeling paint or ongoing renovation; are developmentally delayed, or live with an adult with work or hobby exposure to lead.
- Until 2 consecutive tests are below 10 or 3 below 15 mcg/dl.
- Frequency of further testing depends on the recheck results and the upward or downward trend in BLL results. Fairly frequent follow-up testing is recommended by CDC for cases under clinical management until the exposure to lead hazards is resolved, and BLL have stabilized; at which point less frequent testing is recommended.
- Childhood Lead Poisoning Prevention Program (CLPPP), (215) 685-2797. Fax blood lead results to (215) 685-2978.
- Succimer (Chemet)** is FDA approved for BLLs of 45 and higher. Although not routinely recommended for BLL of 25-44, providers may consider its use, particularly at the higher end of the range & with younger children. Consult AAP & CDC recommendations; 10mg/ kg/dose (350 mg/m²/dose) q. 8 hours x 5 days and then q. 12 hrs for 14 days. Foul smell may compromise compliance.
- CaNa₂EDTA (Versenate)**, 1000 mg/m²/day (or 25mg/kg/day) x 5 days ≤ 0.5% in D5W or NS, continuous infusion or, in divided doses. Allow 5 to 7 medication free days if additional treatment is required (BLL staying ≥ 45)
- Start with **BAL (Dimercaprol)** 75 mg/m²/dose q. 4 hrs IM (450mg/m²/day) (or 25mg/kg/day). After 4 hours and when a good urine flow is established, start CaNa₂EDTA, 1500mg/m²/day (or 50mg/kg/day) ≤ 0.5% solution in D5W or NS X 5 days. BAL should be given for a 3-5 day course.
- Another course of BAL-EDTA if BLL rebounds to ≥ 70. CaNa₂EDTA or succimer only if ≥ 45 and <70.

Prepared by the Childhood Lead Poisoning Prevention Program (CLPPP) of the Philadelphia Department of Public Health, based on the recommendations of the Centers for Disease Control, the American Academy of Pediatrics and the Philadelphia Committee for Childhood Lead Poisoning Prevention. Consult these reports and the manufacturers' information about the precautions required in administration of specific medications listed in this chart.

For consultation, call CLPPP at (215) 685 2797. For after hours emergencies, call the Poison Control Center at (800) 222-1222.

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