New York City Department of Health and Mental Hygiene Guidelines for Health Care Providers

Recommended Chelation Protocol for Children With BLLs ≥45 µg/dL

Before Providing Chelation Therapy

- Confirm the blood lead level (BLL) ≥45 µg/dL with a venous specimen processed as an emergency test unless symptoms of encephalopathy are present.
- Obtain an abdominal x-ray to look for lead solid ingestion; if radio-opaque particles are found or recent ingestion is witnessed, use a cathartic.
- Arrange hospitalization and chelation therapy at a facility with expertise in treating lead-poisoned children.
- Provide chelation therapy in, and discharge child to, a lead-safe environment. Do not discharge until the New York City Department of Health and Mental Hygiene (NYC DOHMH) inspects the home.
- Inform the NYC DOHMH of hospital admission by calling 646-632-6002. The NYC DOHMH can provide referrals to providers with expertise in treating lead intoxication and referrals to temporary lead-safe housing.

Chelation Therapy For Children with Venous BLLs ≥45 µg/dL

<table>
<thead>
<tr>
<th>BLLs (µg/dL)</th>
<th>Agent, Dosage, and Administration</th>
<th>Special Considerations</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;45</td>
<td>Chelation therapy not routinely recommended</td>
<td></td>
<td>See reverse for Recommended Follow-up Blood Lead Test Schedule for Children</td>
</tr>
</tbody>
</table>
| 45 to <70   | DMSA (succimer, 2,3-meso-dimercaptosuccinic acid):  
- 1050 mg DMSA / m² / 24 hours ÷ q8 hours PO x 5 days; round dose to nearest 100 mg/day, and then ÷ 100-mg capsules as evenly as possible for q8-hour dosing schedule  
- On discharge, continue DMSA 700 mg / m² / 24 hours ÷ q12 hours x 14 days,  

OR (alternating treatment if DMSA not tolerated, ie, vomiting medication)  
- CaNa₂EDTA (calcium disodium edetate, calcium disodium versenate):  
  - 1000 mg CaNa₂EDTA / m² / 24 hours ÷ q6 hours IV infused slowly x 5 days | • Monitor for anemia, neutropenia, and hepatic toxicity. | Schedule weekly health care visits to monitor compliance and signs of toxicity. |
| ≥70 and no symptoms of encephalopathy | Combine DMSA and CaNa₂EDTA  
- 1050 mg DMSA / m² / 24 hours ÷ q8 hours PO x 5 days; round dose to nearest 100 mg/day and then ÷ 100-mg capsules as evenly as possible for q8-hour dosing schedule  

AND (beginning 2 hours after first dose of DMSA)  
- 1000 mg CaNa₂EDTA / m² / 24 hours ÷ q6 hours IV infused slowly x 5 days  

On discharge, continue DMSA 700 mg / m² / 24 hours ÷ q12 hours x 14 days | • Maintain urine specific gravity below 1.015.  
• Discontinue any iron.  
• Monitor for renal and hepatic toxicity. | Monitor BLLs biweekly until level stabilizes, then follow Recommended Follow-up Blood Lead Test Schedule for Children (see reverse).  
• Monitor EP level to help assess timing of exposure.  
• Monitor BLLs weekly until level stabilizes, then follow Recommended Follow-up Blood Lead Test Schedule for Children (see reverse).  
• Monitor EP level to help assess timing of exposure. |
| ≥70 and symptoms of encephalopathy | Combine BAL (British anti-Lewisite, dimercaprol) and CaNa₂EDTA  
- 450 mg BAL / m² / 24 hours ÷ q4 hours IM x 3-5 days (number of days on BAL based on clinical improvement)  

AND (beginning 4 hours after first dose of BAL)  
- 1500 mg CaNa₂EDTA / m² / 24 hours (2 g / 24 hours max) as continuous infusion x 5 days | • Monitor mental status.  
• Screen for peanut allergy and G6PD (glucose-6-phosphate dehydrogenase) deficiency.  
• Pretreat with antihistamines.  
• Discontinue any iron.  
• Monitor for neutropenia, and renal and hepatic toxicity. | Retest 3 days after chelation course completed; if BLL ≥45 µg/dL, provide second chelation course.  
• Monitor BLLs biweekly until level stabilizes, then follow Recommended Follow-up Blood Lead Test Schedule for Children (see reverse).  
• Monitor EP level to help assess timing of exposure |

*For children aged ≤5 years, body surface area calculations typically give higher doses, which are recommended (see reverse for the Body Surface Area Nomogram); additional 14 days of q12-hour dosing reduces BLL rebound after therapy ends; found effective and safe in this range in a limited number of children; BAL is prepared in peanut oil and has also caused hemolysis in patients with G6PD; the BLL reflects more recent exposure to lead, while the EP reflects more chronic exposure (once elevated, the EP remains elevated for several months even after exposure has ceased and the BLL has fallen)  

Updated 2023
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Body Surface Area Nomogram

Recommended Follow-up Blood Lead Test Schedule for Children

<table>
<thead>
<tr>
<th>Fingerstick BLLs ≥3.5 µg/DL</th>
<th>Venous BLLs ≥3.5 µg/DL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capillary Test Result (µg/dL)</td>
<td>Confirmatory Venous Test</td>
</tr>
<tr>
<td>3.5 to &lt;10</td>
<td>Within 3 months*</td>
</tr>
<tr>
<td>10 to &lt;20</td>
<td>Within 1 month</td>
</tr>
<tr>
<td>20 to &lt;45</td>
<td>Within 2 weeks</td>
</tr>
<tr>
<td>≥45</td>
<td>Immediately</td>
</tr>
</tbody>
</table>

*Health care providers may choose to repeat BLLs within 1 month for patients newly identified with an elevated BLL to confirm that BLL is not rising rapidly