The 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 NYC Health Department inspects the home.
- Inform the NYC Health Department of the hospital admission by calling 646-632-6002. The Health Department 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>BLL (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 typically recommended</td>
<td></td>
<td></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 (alternative 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. | See Reverse for Recommended Follow-up Blood Lead Test Schedule for Children |
| 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. | Schedule weekly health care visits to monitor compliance and signs of toxicity.  
  Monitor BLLs weekly until level stabilizes, then follow Recommended Follow-up Blood Lead Test Schedule for Children (see reverse).  
  Monitor erythrocyte protoporphyrin (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 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.‡ Calculate body surface area using the Body Surface Area Nomogram (see reverse).
† 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.‖ The BLL reflects more recent exposure to lead, while the EP reflects more chronic exposure.

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Last updated 2019
Recommended Follow-up Blood Lead Test Schedule for Children

<table>
<thead>
<tr>
<th>Capillary Test Result (µg/dL)</th>
<th>Venous BLL (µg/dL)</th>
<th>Early Follow-up Test (first 2 to 4 tests after identification)</th>
<th>Late Follow-up Test (after BLL begins to decline)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to &lt;10</td>
<td>5 to &lt;10</td>
<td>3 months</td>
<td>6 to 9 months</td>
</tr>
<tr>
<td>10 to &lt;45</td>
<td>10 to &lt;20</td>
<td>1 to 3 months</td>
<td>3 to 6 months</td>
</tr>
<tr>
<td>≥45</td>
<td>20 to &lt;25</td>
<td>1 to 3 months</td>
<td>1 to 3 months</td>
</tr>
<tr>
<td></td>
<td>25 to &lt;45</td>
<td>2 weeks to 1 month</td>
<td>1 month</td>
</tr>
<tr>
<td></td>
<td>≥45</td>
<td>As soon as possible</td>
<td>Chelation with follow-up</td>
</tr>
</tbody>
</table>

Fingerstick BLLs ≥5 µg/dL

Capillary Test Result (µg/dL)

Confirmatory Venous Test

Venous BLL (µg/dL)

Early Follow-up Test (first 2 to 4 tests after identification)

Late Follow-up Test (after BLL begins to decline)