Lead and Arsenic exposure

Susan Buchanan, MD, MPH
University of Illinois at Chicago
School of Public Health
Lead in Paint and Gasoline

1978 lead paint ban
1976 leaded gas phase-out
Common Sources of Lead
Common sources of arsenic
Children’s touching and mouthing behaviors

- touches to surfaces 83/hr
- hand to mouth area 35/hr
- hand/object in mouth 21/hr

Lead Exposure

<table>
<thead>
<tr>
<th>CDC Reference Level</th>
<th>Lead in Blood (µg/dL)</th>
<th>Health Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>60</td>
<td>Death</td>
</tr>
<tr>
<td>1978</td>
<td>40</td>
<td>Encephalopathy</td>
</tr>
<tr>
<td>1985</td>
<td>30</td>
<td>Abdominal pain</td>
</tr>
<tr>
<td>1991</td>
<td>25</td>
<td>Anemia</td>
</tr>
<tr>
<td>2012</td>
<td>10</td>
<td>Reduced IQ</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Behavioral problems</td>
</tr>
</tbody>
</table>
Children 1 to 5 years
Blood Lead Level (BLL)

<table>
<thead>
<tr>
<th>Year Range</th>
<th>NHANES II</th>
<th>NHANES III</th>
<th>NHANES IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976-1980</td>
<td>14.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1988-1991</td>
<td></td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td>1999-2002</td>
<td></td>
<td></td>
<td>1.9</td>
</tr>
</tbody>
</table>
Health Effects of Lead

- No “safe” blood lead level for neurobehavioral effects
  - Loss of IQ
  - Behavioral problems
  - Poor school performance
Health effects of arsenic

- Cancer
  - liver, bladder, and lungs
- Nerve damage
- Skin rash
Prevention

*REMOVE FROM EXPOSURE*

- Wash hands frequently
- Wash toys, wet mop
- Yearly blood lead test