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## Sources of Lead Exposure



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## Two Types of Lead

### Environmental

- Paint
- Dust
- Soil
- Water

### Non-Environmental

- Ayurvedics
- Imported Food, Spices
- Occupational
- Hobbies
- Children's Jewelry, Toys, & Clothing

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## Lead Paint



- Pre-1978 Housing may contain lead-based paint
- 74% of homes built prior to 1980 contain some lead paint
- Pre-1950 housing stock has an even higher probability of containing lead paint
- In CT, 35% of housing stock is pre-1950



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## Lead Paint Standards



### Toxic Levels:

- Paint for sale (wet paint): > **0.06% lead by weight**
- X-ray Florescence Analyzer (XRF): **≥ 1mg/cm<sup>2</sup>**
- Paint chip: **≥ 0.5% lead by weight**

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## Lead Dust

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- Is a very fine dust that comes from deteriorated lead paint
- Commonly found on window sills or other high friction surfaces
- Can be created by renovating pre-1978 homes
- Use **wet cleaning and lead-safe work practices** to minimize dust hazards

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## Soil

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- Exposed soil may contain paint chips or lead dust
- Safety Measures:
  - ❑ Cover bare areas by planting grass, shrubs, or with mulch
  - ❑ Wipe shoes on mats or remove shoes before entering the home
- Soil Hazard Standard:
  - ❑ **>400 ppm** must be abated
  - ❑ **Greater than 5,000 perm methods**



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## Water

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- Lead can leach out into drinking water from lead pipes or solder in older homes (rarely a high risk factor)
- Lead solder was banned from use in plumbing in 1986
- 40 million household private wells
- Public water systems can't exceed **.015 mg/L or 15 ppb**



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## Clearance and Hazard Standards

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### Dust Clearance

Post Abatement:  
 Floors: **<40** µg/sq. ft  
 Window sill: **< 250** µg/sq. ft  
 Window well: **< 400** µg/sq. ft

### Dust Hazard

Risk Assessment:  
 Floor: **≥40** µg/sq. ft  
 Window sill: **≥250** µg/sq. ft

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## Non-Environmental Sources

### Food

- Ayurvedics
- Gardening
- Imported Foods

### Occupational

- Automotive
- Demolition Work
- Bridge Work
- Factory Work

### Hobbies

- Ceramics
- Stained Glass
- Soldering
- Firearms/bullet making

### Children's Products

- Toys
- Jewelry
- Clothes

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## Ayurvedics – plant based

- Ayurvedics or ethnic remedies are known to contain lead & other heavy metals
- Ayurvedics are regulated as dietary supplements therefore, medical standards do not apply
- Contain herbs, minerals, metals, animal products
- Imported from India & South Asian countries
- 1 in 5 ayurvedics contain harmful levels of lead, mercury, and arsenic



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## Gardening

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Food contamination from...

- Improper food handling
  - Working with contaminated soil then touching food
- Lead contaminated soil (controversial)
  - Best practice would be test soil
  - Use a raised garden



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## Imported Foods and Candy

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Packaging food products:

- Leaded ink is used in/on candy wrappers
- Lead solder is used to seal imported metal food cans
  - 1995 US banned the use of lead solder

Problem is.....

- Use is unregulated
- Potential food contamination

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## Occupational Lead Exposure

- If an adult in a household works with lead
  - Lead dust can contaminate.....
    - Interior of vehicle
    - Clothes
    - On shoes
  - Important to remember....
    - Shower on worksite if possible
    - Change clothes before leaving work
    - Wash hands and face minimally
    - Remove shoes before entering home
    - Wash work clothes separately



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## Hobbies: Pottery & Ceramics

- Imported pottery may be coated in glaze containing lead
- Over time lead may leach out of the pottery
- If unsure of origin of pottery use as decoration rather than for food



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## Lead in Pewter

- Low grades of pewter may contain lead
- Do not store food or beverages in pewter containers
- Over time lead may leach out into food and beverages



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## Potential Leaching Sources

- Lead Crystal
- Pots and Pans

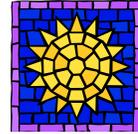


Lead can leach out of leaded crystal and pitted pots and pans into acidic beverages or food!!!

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## Hobbies: Lead Soldering

- Soldering lead for stained glass releases toxic lead fumes
- Soldering should be done away from children or pregnant women
- Work in well ventilated area, use PPE, no access to area by children



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## Lead and Firearms

- Lead dust can be generated from bullets hitting bullet traps in a firing range
- High levels of dust may settle on instructors or shooters skin or clothing
- Clothing should be changed before entering the home, and showering can remove any lead dust on the skin



### Lead in Firing Ranges Fact Sheet

[http://www.ct.gov/dph/LIB/dph/environmental\\_health/EOHA/pdf/Pb\\_firing\\_range.pdf](http://www.ct.gov/dph/LIB/dph/environmental_health/EOHA/pdf/Pb_firing_range.pdf)

## Children's Jewelry

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- Inexpensive jewelry manufactured in foreign countries has been known to contain excessive levels of lead
- Jewelry may be purchased in stores and gumball machines
- In 2006, a child in Minnesota died from lead poisoning after swallowing a metal charm, which laboratory testing revealed to be 99% lead

