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Sources of Lead Exposure



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Two Types of Lead

<p>Environmental</p> <ul style="list-style-type: none"> ▪ Paint ▪ Dust ▪ Soil ▪ Water 	<p>Non-Environmental</p> <ul style="list-style-type: none"> ▪ 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





Lead Paint Standards



Toxic Levels:

- Paint for sale (wet paint): > **0.06% lead by weight**
- X-ray Florescence Analyzer (XRF): **≥ 1mg/cm²**
- Paint chip: **≥ 0.5% lead by weight**

Lead Dust

- 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

Soil

- 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

- 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

Dust Clearance	Dust Hazard
Post Abatement:	Risk Assessment:
Floors: <40 µg/sq. ft	Floor: ≥40 µg/sq. ft
Window sill: < 250 µg/sq. ft	Window sill: ≥250 µg/sq. ft
Window well: < 400 µg/sq. ft	

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Non-Environmental Sources

Food	Hobbies
<ul style="list-style-type: none"> ▪ Ayurvedics ▪ Gardening ▪ Imported Foods 	<ul style="list-style-type: none"> ▪ Ceramics ▪ Stained Glass ▪ Soldering ▪ Firearms/bullet making
Occupational	Children's Products
<ul style="list-style-type: none"> ▪ Automotive ▪ Demolition Work ▪ Bridge Work ▪ Factory Work 	<ul style="list-style-type: none"> ▪ 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

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 with new soil.



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Imported Foods and Candy

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.....

- Only a small amount of imported products are tested.
- Potential food contamination

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Occupational Lead Exposure

- Painters, renovators, abatement workers, etc...
 - 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 personal protective equipment (PPE), and keep children out of area.



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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 car or 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

Children's Jewelry

- 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


