

Childhood Lead Exposure in NH: *Everyone* has a role in preventing it.

NH Environmental Health Conference

9:45 am – 10:35 am - October 26, 2023



NH DIVISION OF
Public Health Services

Improving health, preventing disease, reducing costs *for all*
Department of Health and Human Services





HEALTHY HOMES

& LEAD POISONING

PREVENTION PROGRAM

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New Hampshire 2018 – 2022

3,402

Average of 646 children annually
with EBLL greater than 5 $\mu\text{g}/\text{dl}$
(the NH public health action level)

Fewer than 25% of children under 6 years
in NH have had a BLL test.

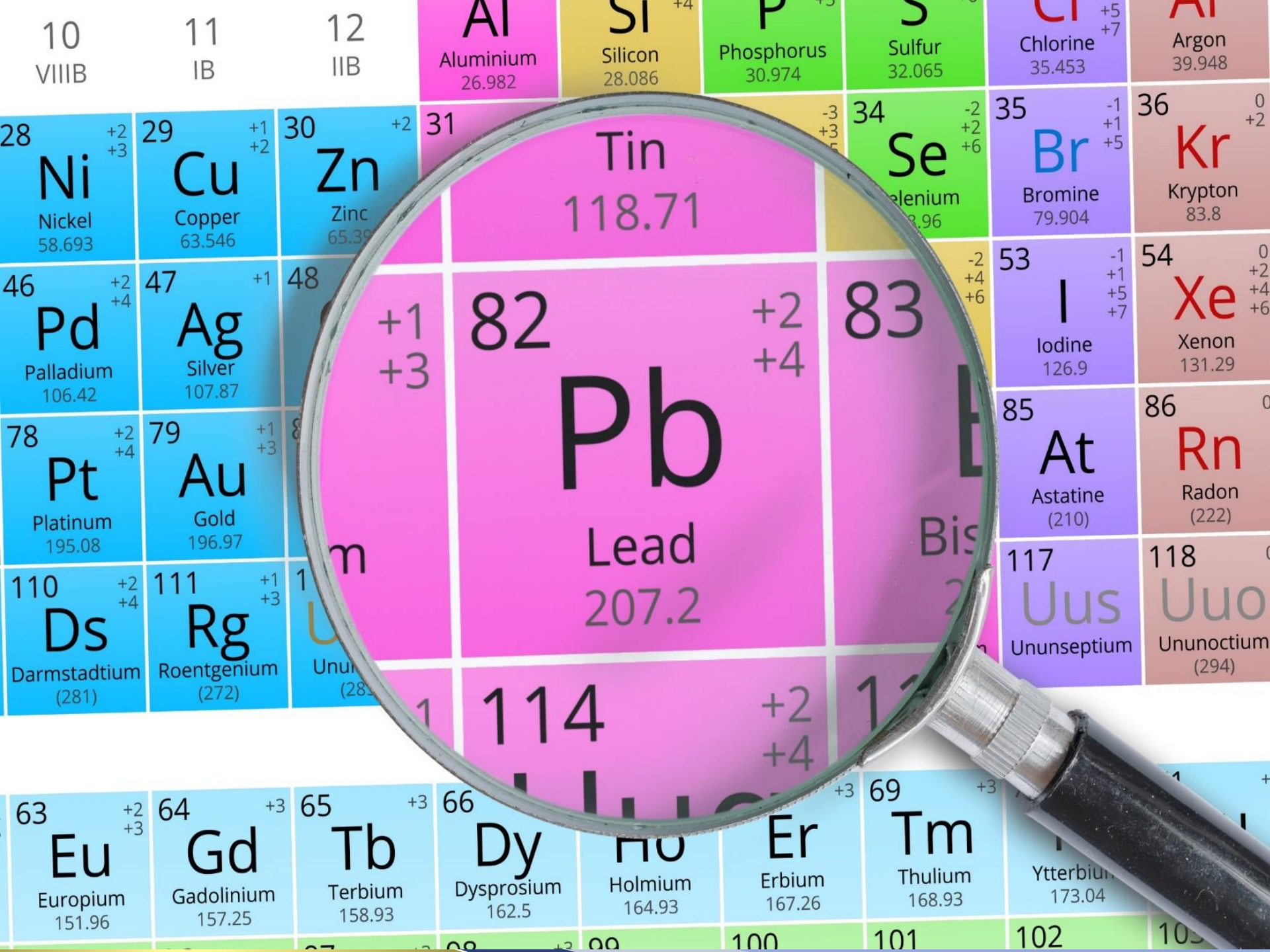
A tall, white, cylindrical water tower with a rounded top. The top section is a large, white, dome-like structure with the words "FLINT WATER PLANT" printed in black capital letters. The tower is supported by several vertical columns. The background is a clear, light blue sky.

FLINT WATER PLANT

500

New Hampshire

Average of 646 children annually



10
VIII B

11
IB

12
IIB

Al
Aluminium
26.982

Si
Silicon
28.086

P
Phosphorus
30.974

S
Sulfur
32.065

Cl
Chlorine
35.453

Ar
Argon
39.948

28
Ni
Nickel
58.693

29
Cu
Copper
63.546

30
Zn
Zinc
65.39

50
Sn
Tin
118.71

34
Se
Selenium
78.96

35
Br
Bromine
79.904

36
Kr
Krypton
83.8

46
Pd
Palladium
106.42

47
Ag
Silver
107.87

81
Tl
Thallium
204.38

82

Pb

Lead
207.2

83

83

53
I
Iodine
126.9

54
Xe
Xenon
131.29

78
Pt
Platinum
195.08

79
Au
Gold
196.97

80
Hg
Mercury
200.59

114

Po
Polonium
209

115

84
Bi
Bismuth
208.98

85
At
Astatine
(210)

86
Rn
Radon
(222)

110
Ds
Darmstadtium
(281)

111
Rg
Roentgenium
(272)

112
Uuq
Ununquadium
(285)

113

113

114

115

117
Uus
Ununseptium

118
Uuo
Ununoctium
(294)

63
Eu
Europium
151.96

64
Gd
Gadolinium
157.25

65
Tb
Terbium
158.93

66
Dy
Dysprosium
162.5

67
Ho
Holmium
164.93

68
Er
Erbium
167.26

69
Tm
Thulium
168.93

70
Yb
Ytterbium
173.04

71
Lu
Lutetium
174.967

In NH's highest risk communities
pre-1978 housing = greater than 80%



MyChildrenHaveLeadPoisoning.com



MISLEAD
AMERICA'S SECRET EPIDEMIC

Perfect Storm

Don't See Deficits and Impact Until Older

No Brain-Blood Barrier

Developing Brain

Sweet Tasting

Trace Amounts

Oral Stage

No Immediate
Symptoms



Crawl on Floors and Pull to Standing - Surfaces Where Lead Dust Collects

Perfect Pediatric Poison

Potent Neuro-Toxicant

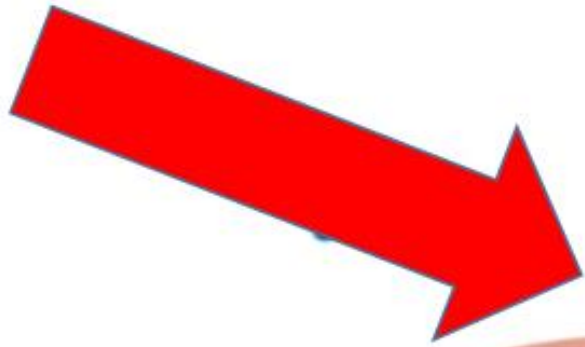
How Much Lead Does It Take To Poison A Child?

Demonstration



Lead's exposures negative impact on a child's developing brain is irreversible.

There is no cure. There is no treatment.



Childhood Lead Exposure: Permanent Brain Injury

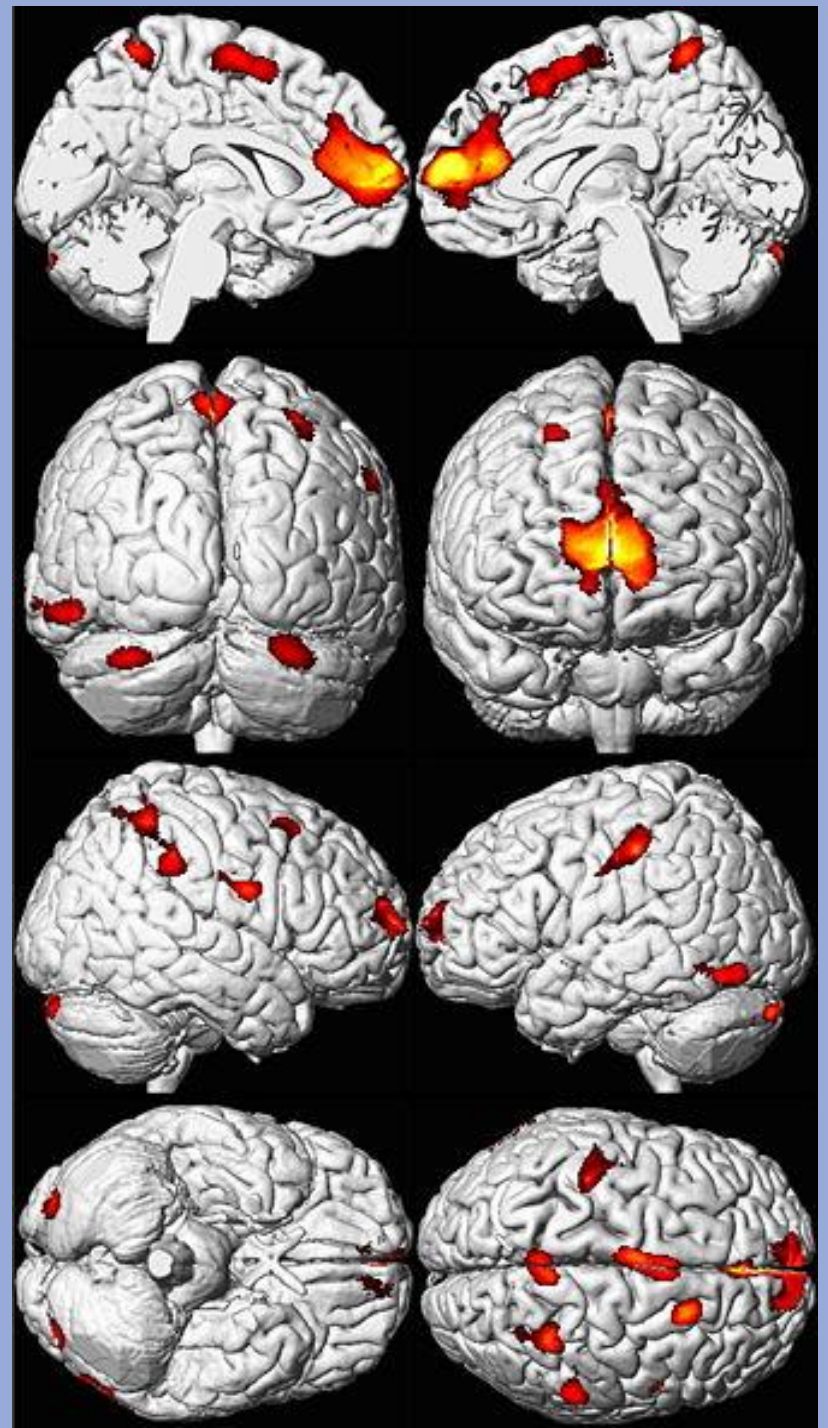
MRI scans of adult brains
exposed to lead in childhood.

Source: Dr. Kim Cecil
Cincinnati Lead Study

Composite Scan: of 157 young adults
with childhood lead exposure.

Average EBLL = 13.3 mcg/dL

Age at time of MRI : ages 19 – 24 yrs.





00:03



NOVA



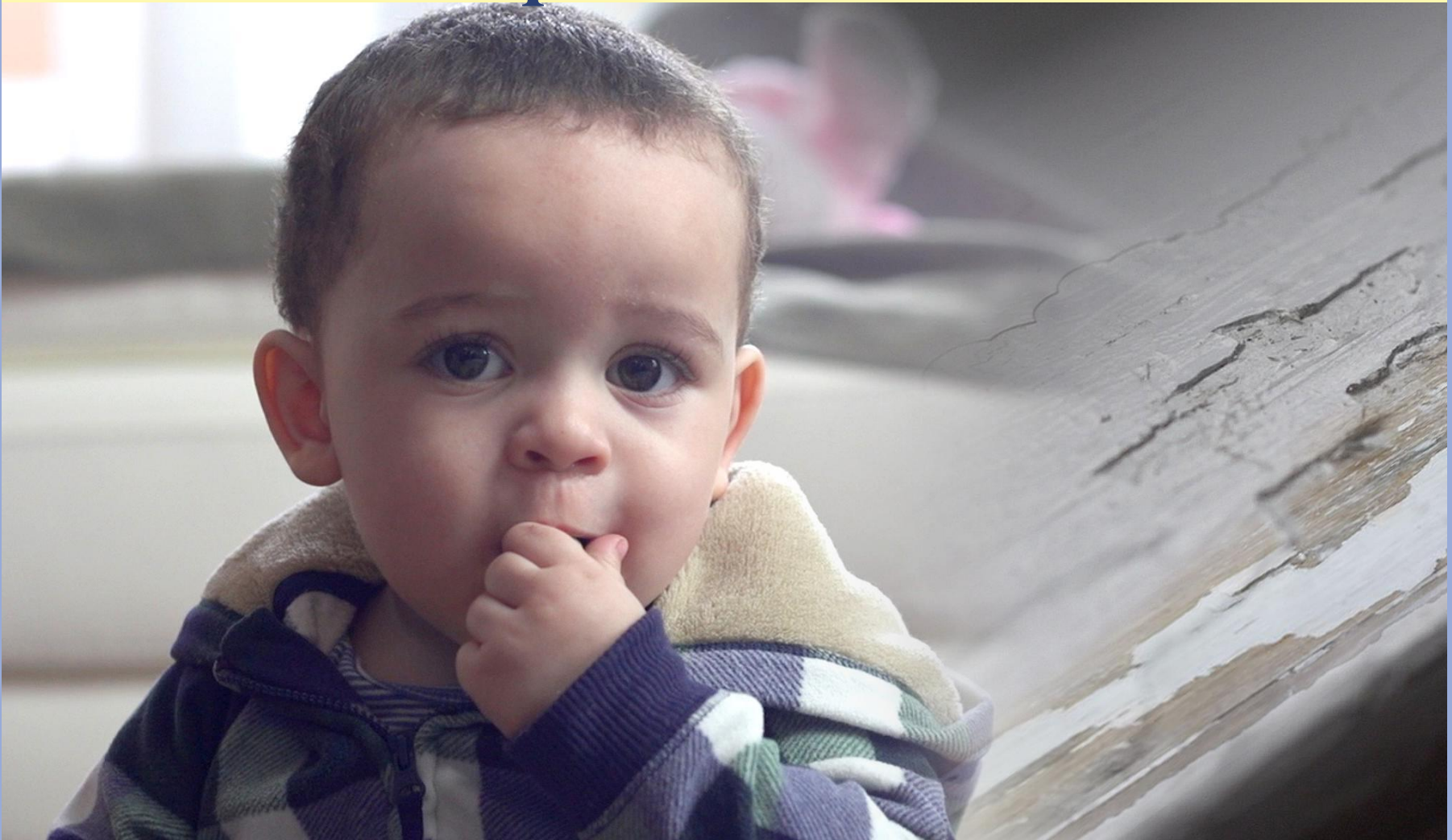
Lead Exposure's Negative Impact On Specific Abilities

- Lower IQ - Lower or failing test scores
- Poor school performance and achievement
- Significant behavior problems
- These effect persist, from childhood through adulthood

Part II

Everyone Has a Role in Prevention

Understand the most common source of lead exposure for NH children is old lead paint and lead dust.



Where Are Lead Hazards Found In the Home?

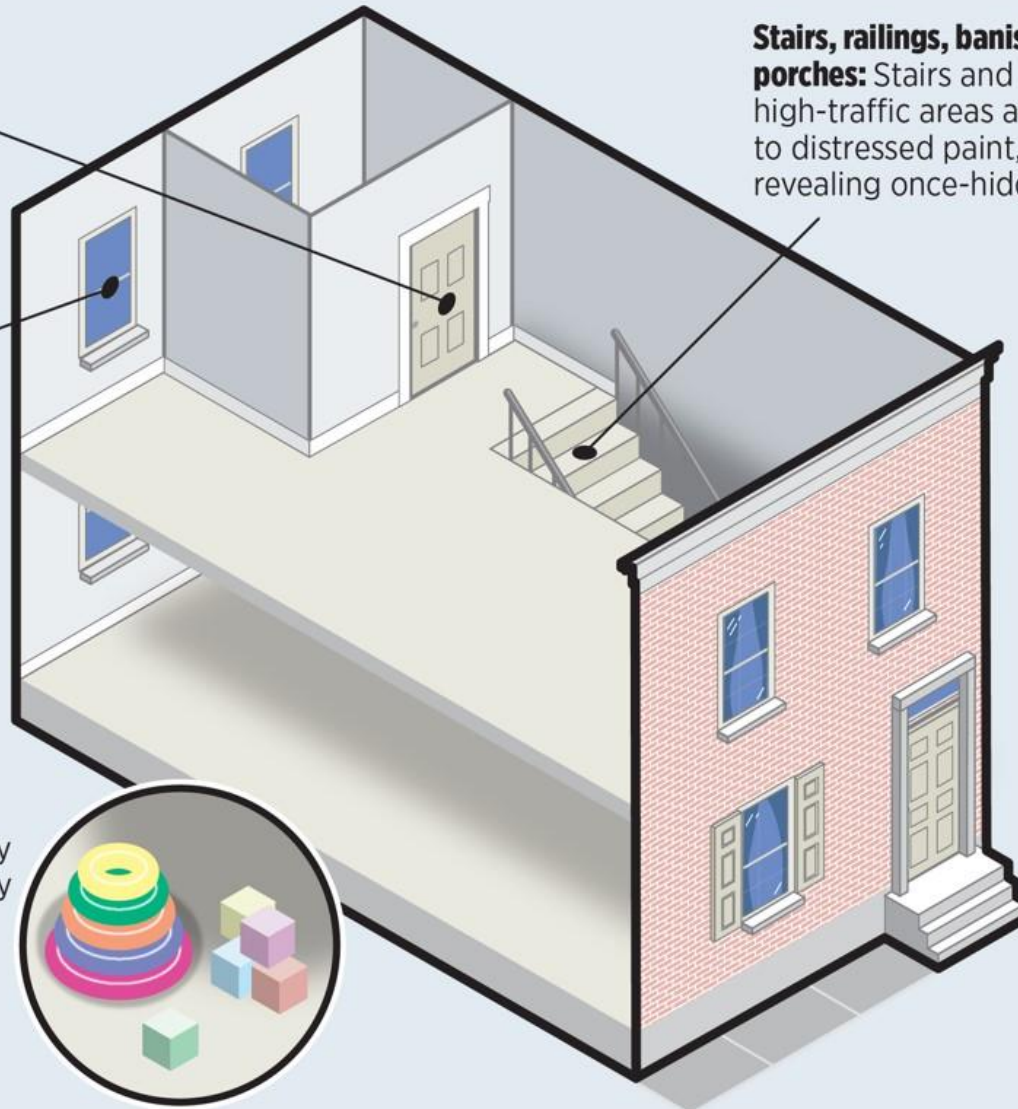
Lead was used in a variety of common household items until it was banned in 1978. Decades later, however, many homes are still full of dangerous lead paint. While painting over the contaminated walls and fixtures will temporarily prevent lead exposure, the wear-and-tear of life often exposes the toxic lead paint below.

Doors and frames: Doors and door frames often become dented and scratched, exposing harmful layers of lead.

Windows: Due to changing temperatures and exposure to the elements, paint on window sills is often likely to crack and flake. Additionally, many window sills are at the perfect height for young children to chew on.

Toys: Infants and toddlers can ingest the toxic metal while playing with toys contaminated by lead dust. Parents should routinely wash toys and mop floors where children play to help reduce the risk of lead poisoning.

Stairs, railings, banisters, and porches: Stairs and other high-traffic areas are susceptible to distressed paint, potentially revealing once-hidden lead paint.



LEAD POISONING



11 TAKE-HOME¹¹ LEAD

Lead Can Be Carried Home from Work on Clothes, Shoes, and Vehicles

Your Family & "Take-Home" Lead

Lead can cause health problems in adults and children. Such as:

All Adults

- Tiredness & headache
- Muscle & joint pain
- Changes in appetite & mood
- Damage to brain, nerves & kidneys
- Fertility issues in men & women
- Reduced sex drive

Pregnant Women

- Miscarriages
- Premature delivery
- Low birth weight babies
- Permanent damage to fetus

Breastfeeding Women

- May have contaminated milk which can expose child to lead

Children

- Permanent health damage to brain, nerves & kidneys
- Long-term learning challenges
- Trouble with memory & behavior

Pregnant and breastfeeding women, and younger children are at special risk and should be tested.



WHAT IS "TAKE-HOME" LEAD

Lead dust can be brought home from work

Take-home lead occurs when lead dust produced at work is brought home on clothes, shoes, and personal belongings. It can be carried into your car, and onto furniture, floors, carpets, and other belongings. Because of this, your family can be exposed to lead even if there are no lead hazards in the home.

REDUCING "TAKE-HOME" LEAD

Remove lead dust from clothes, shoes & personal items

If you work with lead, take these precautions:



- Wash hands & face before leaving work
- Change into clean clothes & shoes before getting into your car, and use washable seat covers
- Put dirty work clothes and shoes in a plastic bag
- Wash work clothes separately & run an empty load before washing other clothes

LEAD-SAFE WORK PRACTICES

Protect yourself from lead at work

- Don't eat, drink, smoke, or change clothes in work areas
- Keep facial hair and nails clean and dust-free
- Wash under jewelry like rings and bracelets
- Avoid sweeping or blowing dust
- Use a wet-mop cleaning system and disposable wipes
- Wear protective equipment like a respirator and disposable coveralls
- Leave your cellphone and other personal belongings such as keys in a clean area

Revised Dec 2019

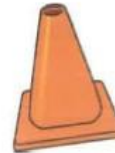
NH Department of Health & Human Services, Division of Public Health Services

1-800-897-LEAD or LeadRN@dhhs.nh.gov

LEAD POISONING

"TAKE-HOME" LEAD

Jobs and Hobbies May Expose Adults to Lead



Though the dangers of lead have been known for years, many common items still contain lead. Some jobs and hobbies put people at a high risk of being exposed to lead. Know if your hobby or job exposes you to lead and be sure to take the necessary precautions.

Construction

- Painting or paint removal
- Remodeling & renovations
- Plumbing, glazing, & brick laying
- Lead burning
- Construction & repair of bridges, water towers, tanks
- Welding or cutting materials with lead alloys

Manufacturing

- Lead acid batteries
- Cable, wire products, solder
- Firearms, bullets, explosives
- Rubber or plastics

Metal Working

- Foundry work, casting, forging
- Grinding
- Circuit board manufacturing and recycling
- Scrap metal recycling

Hobbies

- Home remodeling
- Melting lead for fishing weights, bullets, or toys
- Target shooting
- Using lead glazes in ceramics
- Backyard scrap metal recycling, & radiator repair
- Stained glass making
- Burning painted wood
- Refinishing old furniture

Repair

- Automotive work
- Ship repair
- Welding, cutting, & sanding
- Grinding of lead alloys or lead-coated surfaces
- Soldering & electronics repair
- Repair work that disturbs lead paint



Other sources

- Cleanup at firing ranges
- Using lead-containing paints, inks, pigments, & glazes
- Working at municipal solid waste incinerators

Revised Dec 2019

NH Department of Health & Human Services, Division of Public Health Services

1-800-897-LEAD or LeadRN@dhhs.nh.gov



Know the Importance of Lead-Safe Work Practices: EPA RRP Rule



Hire a Lead-Safe Certified Contractor.

REASONS WHY YOU SHOULD

HIRE

A LEAD-SAFE CERTIFIED
RENOVATION CONTRACTOR:

1. To help prevent learning disabilities
2. To help prevent behavior issues
3. To help prevent diminished motor skills
4. To help prevent lower intelligence
5. To help prevent hearing loss
6. To help prevent brain damage
7. To help prevent memory loss
8. To help prevent headaches

Federal law requires contractors who disturb painted surfaces in homes, child care facilities and schools built before 1978 to be certified and follow specific work practices to prevent lead contamination.

Always ask to see your contractor's certification.



Understand the EPA Residential Lead-Based Paint Disclosure



4%

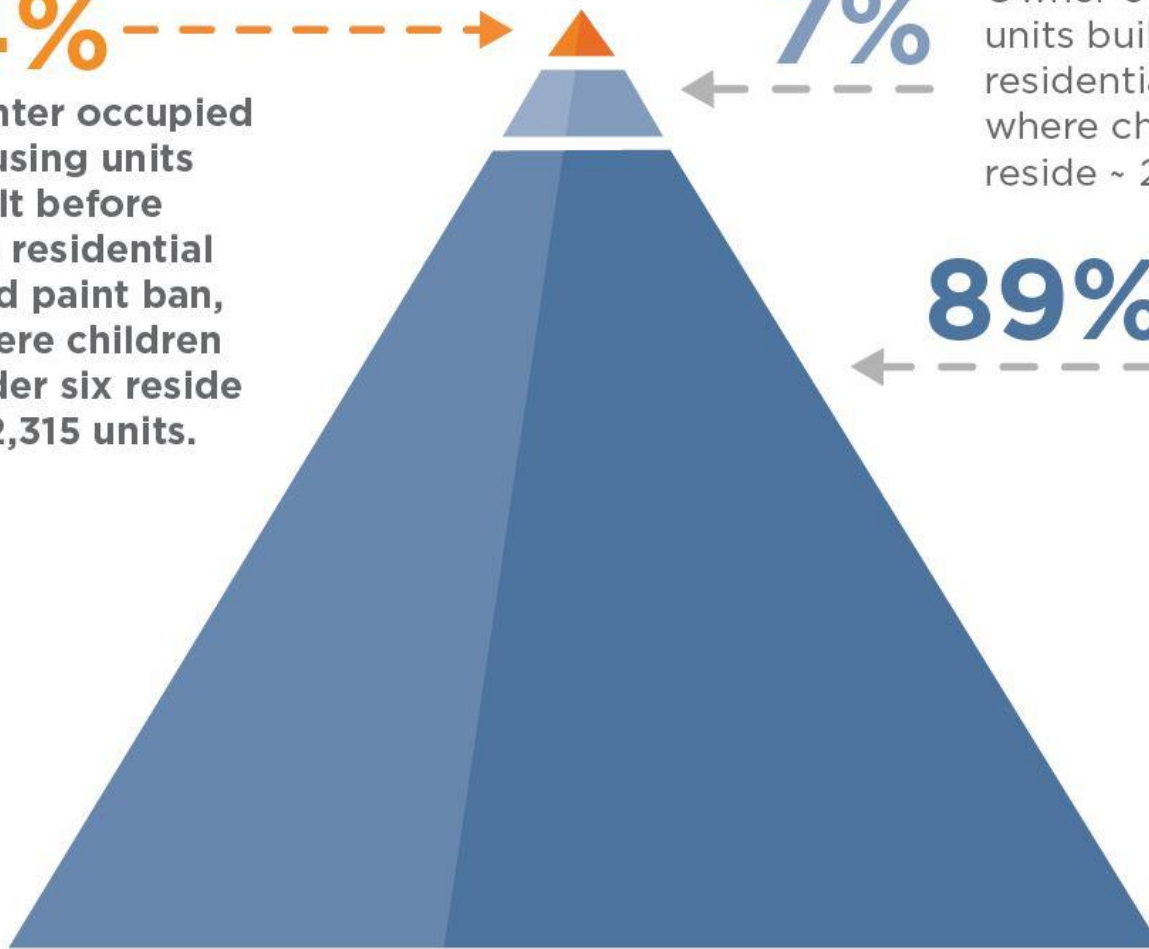
Renter occupied housing units built before the residential lead paint ban, where children under six reside ~ 12,315 units.

7%

Owner occupied housing units built before the residential lead paint ban, where children under six reside ~ 20,035 units.

89%

All occupied housing units built before the residential lead paint ban, where adults reside with no children ~ 253,940 units.



Source: Table 13 Comprehensive Housing Affordability Strategy (CHAS) data Published by HUD on September 5, 2023 based on 2016-2020 5-Year American Community Survey data.

No knowledge ≠ No lead paint



**Protect
Your
Family
From
Lead in
Your
Home**



United States
Environmental
Protection Agency



United States
Consumer Product
Safety Commission



United States
Department of Housing
and Urban Development

Disclosure of Information on Lead-Based Paint and/or Lead-Based Paint Hazards

Lead Warning Statement

Housing built before 1978 may contain lead-based paint. Lead from paint, paint chips, and dust can pose health hazards if not managed properly. Lead exposure is especially harmful to young children and pregnant women. Before renting pre-1978 housing, lessors must disclose the presence of known lead-based paint and/or lead-based paint hazards in the dwelling. Lessees must also receive a federally approved pamphlet on lead poisoning prevention.

No knowledge ≠ No lead paint

Lessor's Disclosure

(a) Presence of lead-based paint and/or lead-based paint hazards (check (i) or (ii) below):

(i) Known lead-based paint and/or lead-based paint hazards are present in the housing (explain).

(ii) Lessor has no knowledge of lead-based paint and/or lead-based paint hazards in the housing.

(b) Records and reports available to the lessor (check (i) or (ii) below):

(i) Lessor has provided the lessee with all available lead-based paint records and reports.

Successful Lead Policies Implemented in Other New England States



Include lead paint hazards in RSA 48-A, Minimum Housing Standards.

Implement statewide requirement for a proactive rental inspection for lead hazards prior to occupancy. *Massachusetts*

Require property owners to conduct essential maintenance practices at unit turn over that includes visual assessment for chipping, peeling, flaking paint. *Vermont*

Include EPA's Renovation, Repair, and Paint Certification number on building permits for any contractor working on a pre-1978 residential property.

Require that real estate disclosure documents include information on lead dust wipes and a visual for peeling, chipping, flaking paint.

Require that rental disclosure documents include information on lead dust wipes and visual for peeling, chipping, flaking paint. *Connecticut*

Ensure Children's Lead Levels are Tested at Age 1 and *again*, at Age 2.

New Hampshire Early Childhood Health Assessment Record (page 2 of 2)

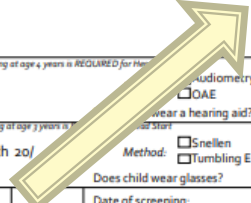
Part II: PHYSICAL EXAMINATION, SCREENING, AND MEDICAL CONDITIONS

To be completed by the child's primary health care provider—must be a licensed physician, nurse practitioner, or physician's assistant.

Name of Child/Student		Date of Assessment		PLEASE ATTACH COPY OF IMMUNIZATION RECORD		
Birth Date		Date of Next Scheduled Assessment				
Physical Examination	WT <i>(must be taken within 60 days for WIC)</i>	lb / kg	Body Mass Index (BMI) <i>(if ≥ 2 years)</i>			
	HT <i>(must be taken within 60 days for WIC)</i>	in / cm	<input type="checkbox"/> 5-84th %ile <input type="checkbox"/> 85-94th %ile	<input type="checkbox"/> < 5 <input type="checkbox"/> 2-9		
	HC <i>(if ≤ 2 years)</i>	in / cm	BP <i>(if ≥ 3 years)</i>	/	<input type="checkbox"/> W <input type="checkbox"/> 2-9	
	HEENT Dental/Oral health		Yes <input type="checkbox"/> No <input type="checkbox"/>	Normal	Follow-up indicated	Please comment on any findings outside including timeframe for re-evaluation.
Preventive Screening	HEARING	Date performed: / /	L <input type="checkbox"/> Pass <input type="checkbox"/> Fail R <input type="checkbox"/> Pass <input type="checkbox"/> Fail	Audiometry OAE		
	VISION	Date performed: / /	L 20/ R 20/	both 20/	Method: <input type="checkbox"/> Snellen <input type="checkbox"/> Other <input type="checkbox"/> Tumbling E	
	LABS	HGB: g/dL	HCT: %	Date: / /	Date of screening: / /	
		HGB: g/dL	HCT: %	Date: / /	Screening tool(s) used: _____	
Lead: mcg/dL		Date: / /	Typically developing: Y N Referred			
Lead: mcg/dL		Date: / /	Gross motor	<input type="checkbox"/>	<input type="checkbox"/>	
Special Needs	Chronic medical conditions/related surgeries?		<input type="checkbox"/> No <input type="checkbox"/> Yes	List special needs/considerations and medications below (other than in attached special care plans). Please attach Special Meals Prescription Form, if applicable.		
	Medications or treatments?		<input type="checkbox"/> No <input type="checkbox"/> Yes			
	Allergies/sensitivities?		<input type="checkbox"/> No <input type="checkbox"/> Yes			
	Behavioral issues/mental health diagnoses?		<input type="checkbox"/> No <input type="checkbox"/> Yes			
	Limitations to physical activity?		<input type="checkbox"/> No <input type="checkbox"/> Yes			
	Special equipment needs?		<input type="checkbox"/> No <input type="checkbox"/> Yes			

Lead:	mcg/dL	Date:	/	/
Lead:	mcg/dL	Date:	/	/
Lead:	mcg/dL	Date:	/	/

The NH Early Childhood Health Assessment Record, birth through 3rd grade has spaces where children's lead level test results should be documented.



Require documentation on health forms for child care and school entry



**Reduce the Knowledge Gap:
Educate everyone, especially those with
young children.**



Questions?

Please visit Resource Room and our Exhibit Table for additional information and education and outreach materials.