



## **CHILDHOOD LEAD PREVENTION PROGRAM IN WASHINGTON STATE: BUILDING PARTNERSHIPS TO PREVENT AND REDUCE EXPOSURE**

Healthy Homes and Communities/Environmental Public Health  
Washington State Department of Health



# Today's Agenda

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- **Welcome and Introductions**
- **Background**
  - Health effects of lead
  - Sources of lead exposure
- **Lead in Drinking Water**
  - School testing program
  - Child care testing program
- **Child Lead Testing and Response**
- **Looking Ahead**
- **Questions and Discussion**



# Childhood Lead Poisoning Prevention Program OEPHS/ Healthy Homes and Communities Section

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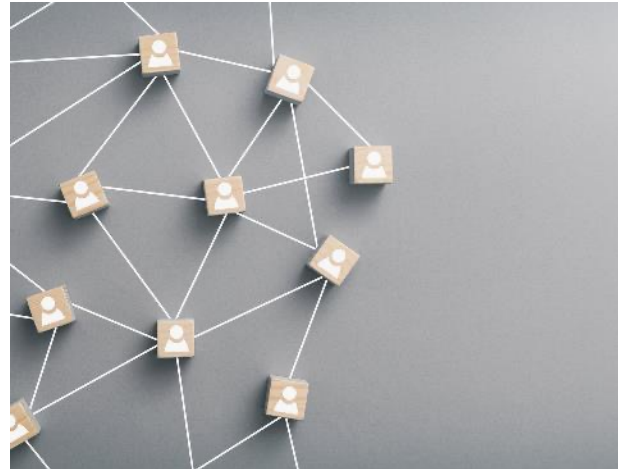
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## Child Lead Prevention & Response Team

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# Childhood Lead Poisoning Prevention Program

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## Primary bodies of work include:

- Testing promotion
- Case management coordination with local health jurisdictions
- School and child care water testing
- Partnership and education



# Building Partnerships

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What would you like to learn about lead?

What concerns do you have about lead?

What types of collaborations would you be interested in?

# Background

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Have you ever known or worked with a child or family affected by lead exposure?



# Lead

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## **Lead is a naturally occurring toxic metal.**

- It occurs naturally but much of its presence in the environment stems from historic use in paint, gasoline and from industry.
- It is a neurotoxin.
- The most widespread source of lead exposure for children is in lead-based paint and dust that remains in older buildings.





# Key Risk Factors

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- Age – children under the age of six.
- Housing – time spent in a home or building built before 1978.
- Location – near a site known to be contaminated.
- People with lower incomes – enrolled in Apple/Medicaid.
- Family member or friend with an elevated lead level.

## Key Risk Factors

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- Recent immigrant or refugee.
- Family member who is at risk for lead exposure (through occupation or hobby).
- Family uses traditional or imported cosmetics/remedies.
- Children experiencing food insecurity.
- Children with developmental delays or other conditions that increase exposure risk.

# Health Effects of Lead

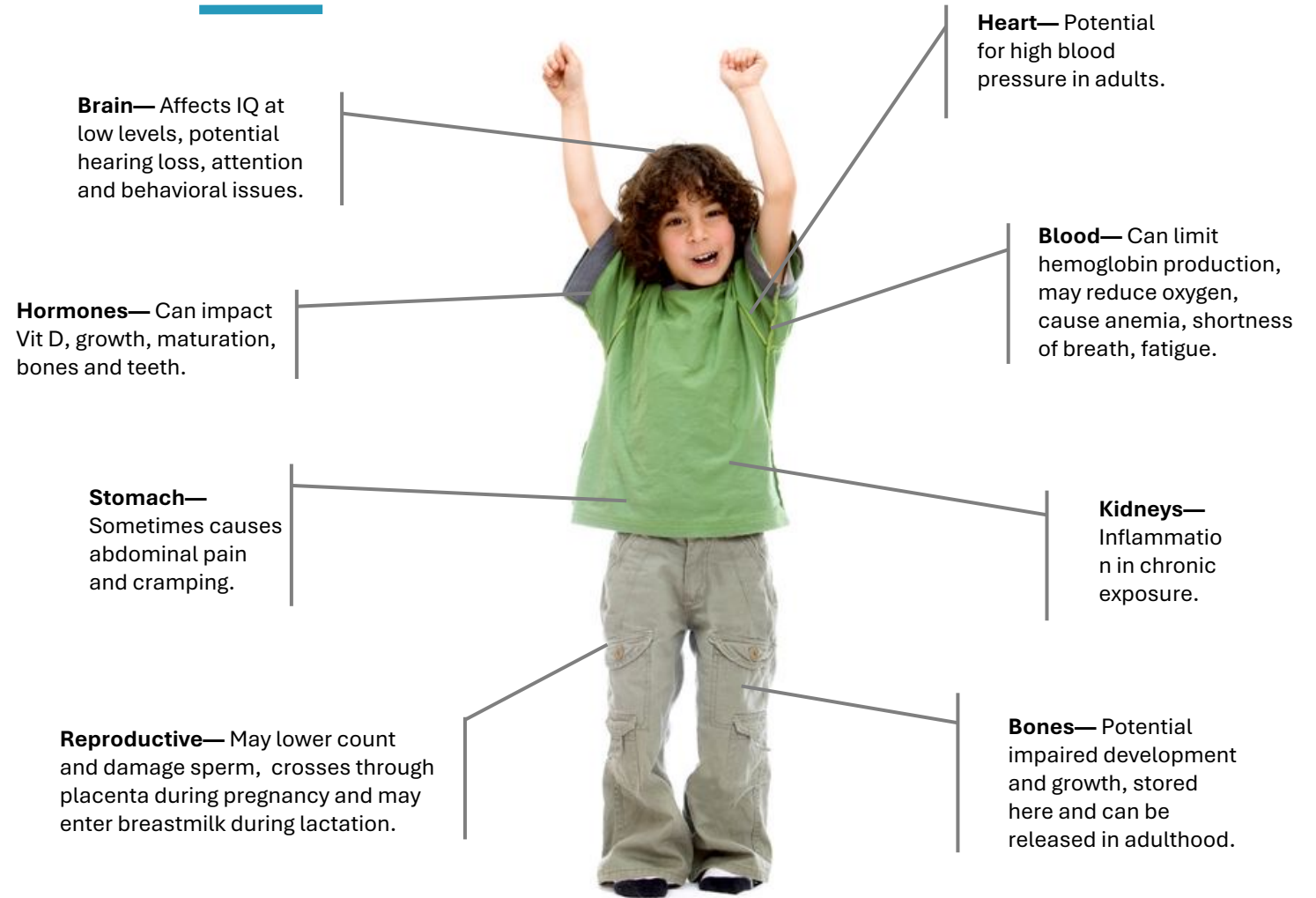
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# Children are the Most Vulnerable

- Developing children are much more sensitive to the adverse effects of lead.
- Especially harmful to developing brains and nervous systems.
- Children absorb more of the lead they are exposed to.
- Young children exhibit more hand-to-mouth behavior, increasing their exposure and intake.



# Sources of Lead

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# Lead-Based Paint in Older Homes

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## Most common source of exposure

- Used in houses up to 1978
- Chips and dust from deteriorating paint
- Can get into soil around the house
- Renovation risk





## Other Exposure Risks



- Hobbies / sports
- Costume jewelry
- Recalled products
- Imported pottery
- Imported aluminum cookware
- Job exposures
- Drinking water



## Hunting and Fishing

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- Game meat harvested with lead ammunition
- Poorly ventilated firing ranges
- Cleaning firearms or handling lead ammunition
- Many subsistence hunters have switched to lead-free ammunition
- Lead in products used to hunt and fish
- Melting lead to make (cast) bullets, sinkers, decoys and other metal items
- Child exposed from making lead fishing sinkers
- Use lead-free options



Source: [Lead | US EPA](#)

# Recent Refugees - Unique Source of Lead Exposure

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## Exposure in country of origin to:

- Leaded gasoline
- Industrial emissions
- Ammunition manufacturing



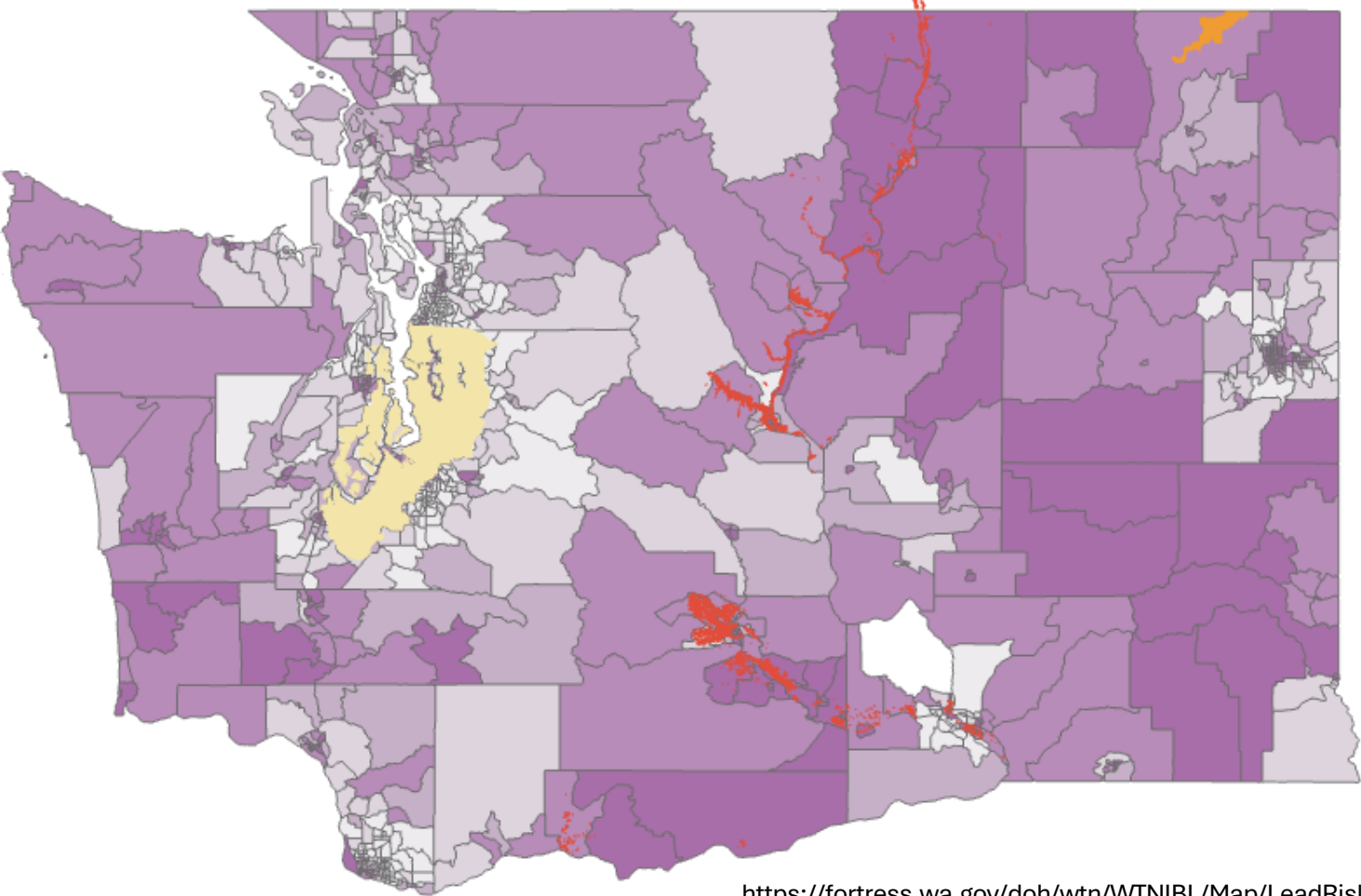
## Continued use post-arrival:

- Traditional remedies
- Cultural products
- Imported spices
- Imported aluminum cookware





# Lead Exposure Risk Mapping



The Washington Tracking Network (WTN) Lead Risk Indicator is calculated utilizing data on **age of homes** and **poverty** within census tracts.

## Legend

- Historical Orchards
- Upper Columbia Plume
- Tacoma Smelter Plume

## Lead Risk - WTN

- 1-2
- 3-4
- 5-6
- 7-8
- 9-10

<https://fortress.wa.gov/doh/wtn/WTNIBL/Map/LeadRisk>

# Questions?

# Lead in Drinking Water

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# Primary Prevention

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- Lead can enter water through plumbing materials and is impacted by water acidity
- There is no safe level of lead in drinking water
- Easy to test fixtures and remediate
- Only statewide investment in lead primary prevention
- Not the biggest source of exposure



# School Testing Program

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# Current Laws

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[Chapter 28A.210.410 RCW: Lead contamination at drinking water outlets](#)

[Chapter 43.70.830 RCW: Lead contamination in drinking water in school buildings – Sampling and testing – Data-sharing agreement](#)

[Chapter 43.70.835 RCW: Lead contamination in drinking water in school buildings – State – tribal compact schools](#)

## **Key Components:**

- Requires testing for lead in drinking water in all public K-12 schools built or with all plumbing replaced before 2016
- State tribal-compact schools may opt-in to testing
- Specific requirements around sampling and testing protocol
- Lowered action threshold to above 5ppb
- Requirements regarding remediation and communication placed on schools and the Office of Superintendent of Public Instruction (OSPI)



## DOH's Role

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- Ensure that initial sampling and testing completed by June 30, 2026, and then every five years
- Initial sampling and testing is complete if:
  - DOH conducts sampling and testing or;
  - A school contracts for sampling and testing that meets the technical requirements and submits test results to DOH for review or;
  - A school already completed sampling and testing that meets requirements, and results are submitted to DOH for review.
- Provide technical guidance and assistance
- Management of testing data

## Partnering with Schools

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- OSPI provides school building information to DOH
- DOH sends initial outreach email to school leaders to gather building information to guide testing
- Schedule sampling
- Lead test results in four to six weeks
- Results are shared with the school and OSPI and eventually publicly
  - State-tribal compact school data is not shared or posted publicly



# Action Plans and Remediation

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- Actions plans must be completed within six months of receiving results
- Include a schedule of mitigation/remediation activities
  - Mitigation and remediation may be the same
  - Signage is an effective tool – “hand wash only”
  - Remediation may mean disruption – lead levels may increase
  - Post-remediation testing is required
- Provide the public with notice and opportunity to comment on the plan
- Publicly post the most recent lead test results
- Adopted by school governing body



## 2022–2023 Data

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During the 2022–2023 school year, the LISDW program sampled a total of 121 schools. Most sampling occurred in the southwest and southeast regions of the state.

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**3,961 total samples**

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**75%** of schools had at least one elevated outlet

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Sink faucets in low use areas most common elevated fixture

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Among schools with one elevated outlet, **50%** have less than **11%** of their total outlets testing above the action level

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Mean 0 ppb

Median 2.4 ppb

Maximum 341 ppb

# Child Care Testing Program

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# Free Water Testing for Lead and Copper

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- Provides free water testing for child care and early learning sites
- Tests for lead and copper in water used for drinking, formula and food preparation
- Funded through the Environmental Protection Agency (EPA)'s Water Infrastructure Improvement (WIIN) for the Nation grant
- NPAIHB, Oregon, and Idaho also have WIIN funding
- Overall goal - Protect young children from lead exposure





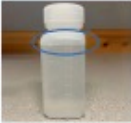


# How does it work?

- Register through [Survey Monkey link](#) on the Department of Health (DOH) [webpage](#)
- Mail in Program: DOH staff follows up and sends out testing supplies
- Collect water and send to lab
- Once samples are received by the lab, results can take 3-4 weeks

## Water Sampling Instructions

**Included Materials:** Sampling bottles, barcode stickers, a "blank" sample (small sample bottle with water already in it), chain of custody form, plastic bag (to keep form dry).

- 1** Identify all water fixtures that are used for drinking, cooking, or making formula.
- 2** Give each water fixture a unique name for easy identification. Write that name on the sample bottle AND the chain of custody form. Each sample has two barcode stickers. Place one sticker directly on the bottle (use tape if needed) and the other on the chain of custody form next to the fixture's name.  

- 3** Prepare the "blank sample," the small bottle that is already filled with water. Pour the water from the blank sample into an empty sample bottle and throw away the bottle it came in. Place one barcode sticker directly on the blank sample bottle and the other on the chain of custody form by the pre-filled column "blank sample." This sample helps us know your test results are accurate.  

- 4** Collect COLD water samples from fixtures that have not been used for 8-18 hours. Collect first-draw samples in the morning after the water has been sitting still the night before. Collect the water sample immediately after turning on the faucet or valve, not allowing any water to spill. Fill each sample bottle with COLD water up to the 250ml mark on the bottle.  


**Sampling tips:**

  - Do not use the water fixture for 8-18 hours before taking the samples.
    - To prevent people from accidentally using the water before sampling, you can tape off the area and post "do not use" signs.
  - Do not use the facility's restrooms, sinks, or other water-using appliances or fixtures the morning before sampling as this can disrupt the water we want to sample.
  - Do not collect a sample from a fixture that has not been used in over 18 hours. If your facility is closed on the weekend, do not sample on Monday, and do not sample on the first day after a holiday or facility closure.
  - Do not remove aerators or clean them before sampling.
  - Water samples are time sensitive. Get the samples back in the mail to the DOH lab within a day or two after collecting them.
- 5** Make sure the chain of custody form is completed and make a copy or take a photo of the form for your records.

## Results

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- Based on individual results, participants receive an email with official results from DOH:
  - No action is needed
  - Action is needed
- Actionable levels are 15 parts per billion for lead (ppb) and 1300 ppb for copper
- EPA sets these levels – we want results **BELOW** these levels
- Testing data is shared with the EPA in alignment with grant requirements

## Support for High Levels

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- Take problem fixtures out of use and post “do not use for drinking/cooking” signage
- DOH provides technical assistance and support
- Funding is available to “fix” outlets that test at or above 15ppb
- Follow up testing is also available
- Overall goal - Make this process as simple for child care/early learning provider as possible

# Questions?



# Testing for Lead Exposure



# Blood Lead Testing

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## Two methods for blood lead testing:

- Venous
- Capillary (needs confirmatory test)



Screen for risk factors at 12 and 24 months of age at well-child check ups.

Test when child has risk factors or when parent requests blood lead test.



## Who Should Get Tested?

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- Kids who are covered by Medicaid (Apple Health) should have a blood lead test at 1 and 2 years old – even if they don't have other risk factors!
- Kids who aren't covered by Medicaid should have a blood lead test at 1 and 2 years old if they have 1 or more risk factors for lead exposure.
- All newly arrived refugee and immigrant children 16 years and younger should have a blood lead test.
- People who are pregnant or lactating and may have been exposed to lead.

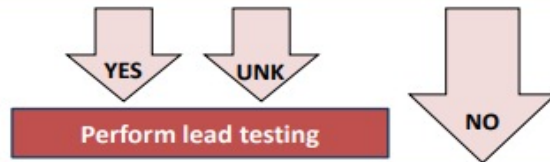
# Recommendations for Blood Lead Testing in WA

## Does the child have any of the following risk factors:

- Lives in or regularly visits any house built before 1950.\*
- Lives in or regularly visits any house built before 1978 that has recent or ongoing renovations or remodeling.
- From a low income family (defined as incomes <130% of the poverty level.)\*\*
- Known to have a sibling or frequent playmate with elevated blood lead level.
- Is a recent immigrant, refugee, foreign adoptee, or child in foster care.
- Has a parent or principal caregiver who works professionally or recreationally with lead. (See sidebar for examples.)
- Uses traditional, folk, or ethnic remedies or cosmetics (such as Greta, Azarcon, Ghasard, Ba-baw-san, Sindoor or Kohl.)

\* Screening may not be indicated if the home has previously undergone lead abatement or tested negative for lead after remodeling.

\*\* Federal law mandates testing for all children covered by Medicaid.



## Healthcare providers should consider testing additional children per clinical judgment, such as:

- Child whose parents have concern or request testing (including older children that have risk of exposure.)
- Child living within a kilometer of an airport or lead emitting industry or on former orchard land.
- Child with pica behavior.
- Child with neurodevelopmental disabilities or conditions such as autism, ADHD, and learning delays.

## LEAD RISK EXPOSURE EXAMPLES:

### Occupations and Hobbies:

- Remodeling and demolition
- Painting
- Work or visit gun range
- Mining, smelting, battery recycling
- Making lead fishing weights or ammunition
- Stained glass
- Soldering and welding

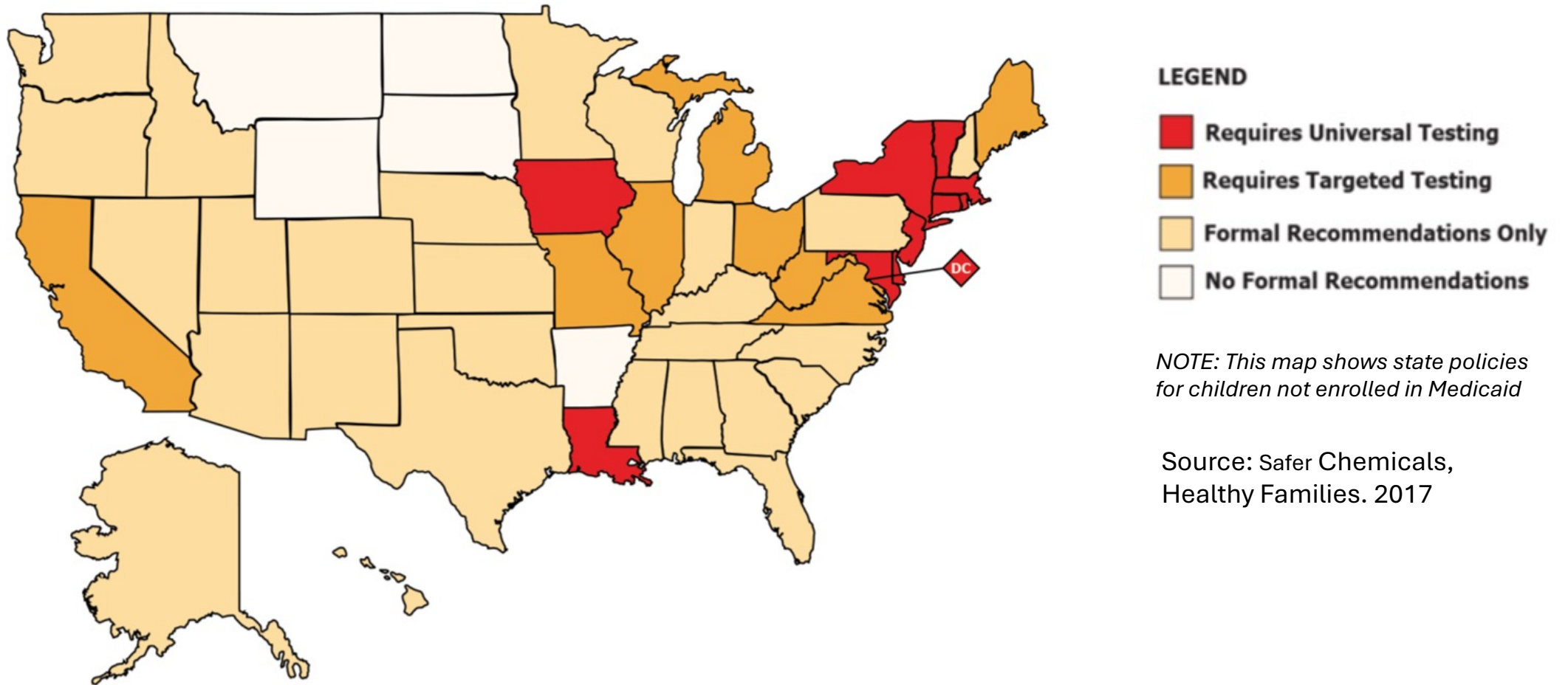
### Consumer Products:

- Pottery or porcelain with lead glaze
- Informally imported foods, candies and spices
- Antique furniture and inexpensive jewelry

Health care providers should use this tool to screen for risk factors at ages 12 and 24 months, or any time there is a question about whether to test a child.

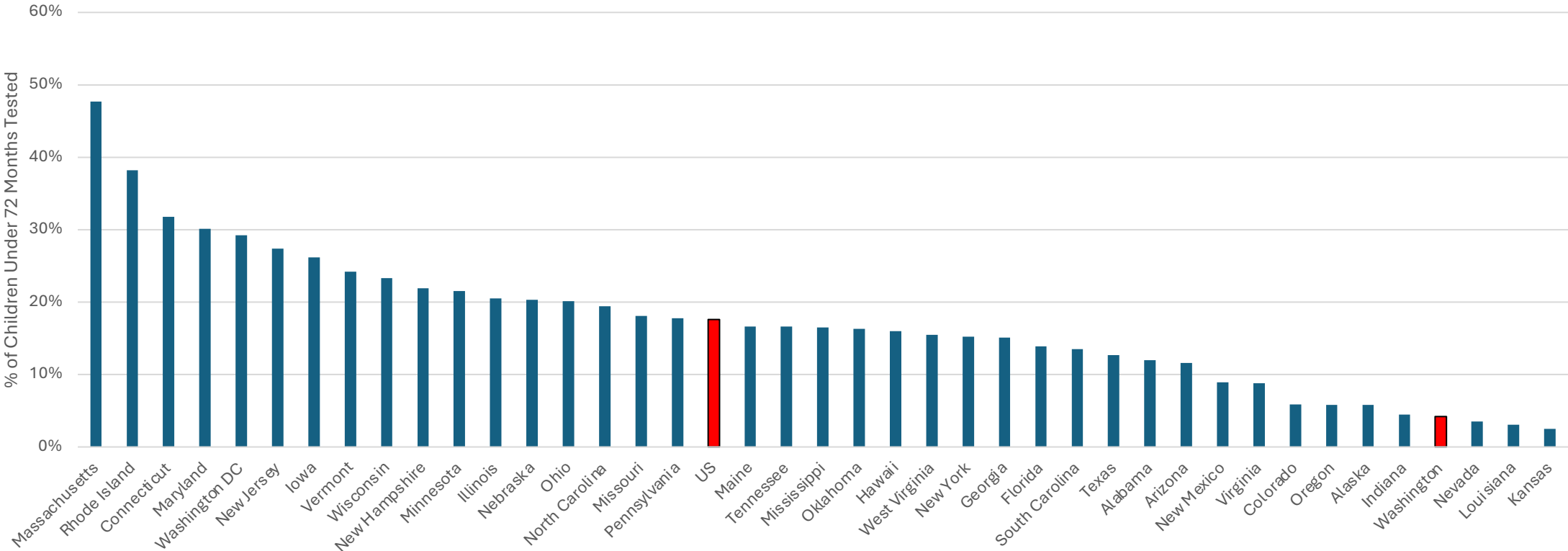


# Testing Practices Across the U.S., 2017



# Testing Rates by States, 2018

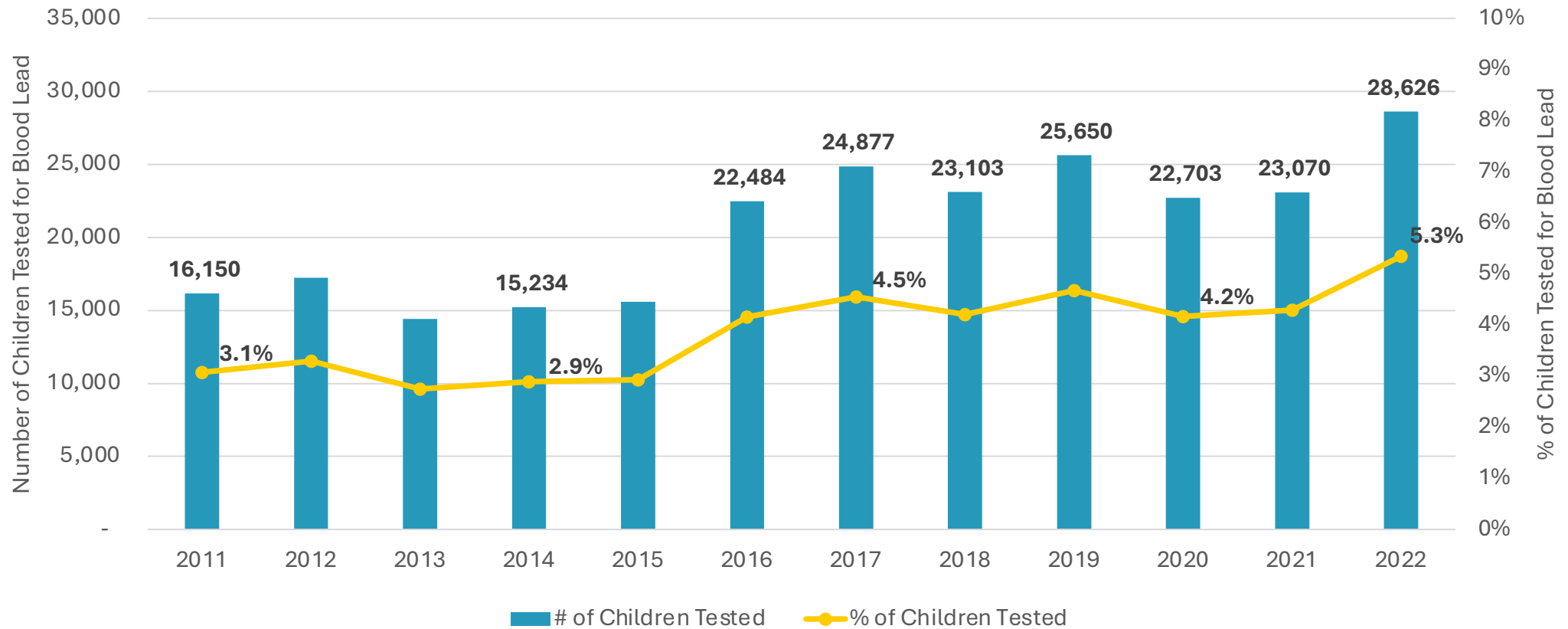
Annual Testing Rate of Children Under 72 Months of Age, 2018  
in states reporting annually to CDC



Source: CDC National Childhood Blood Lead Surveillance Data <https://www.cdc.gov/nceh/lead/data/national.htm>

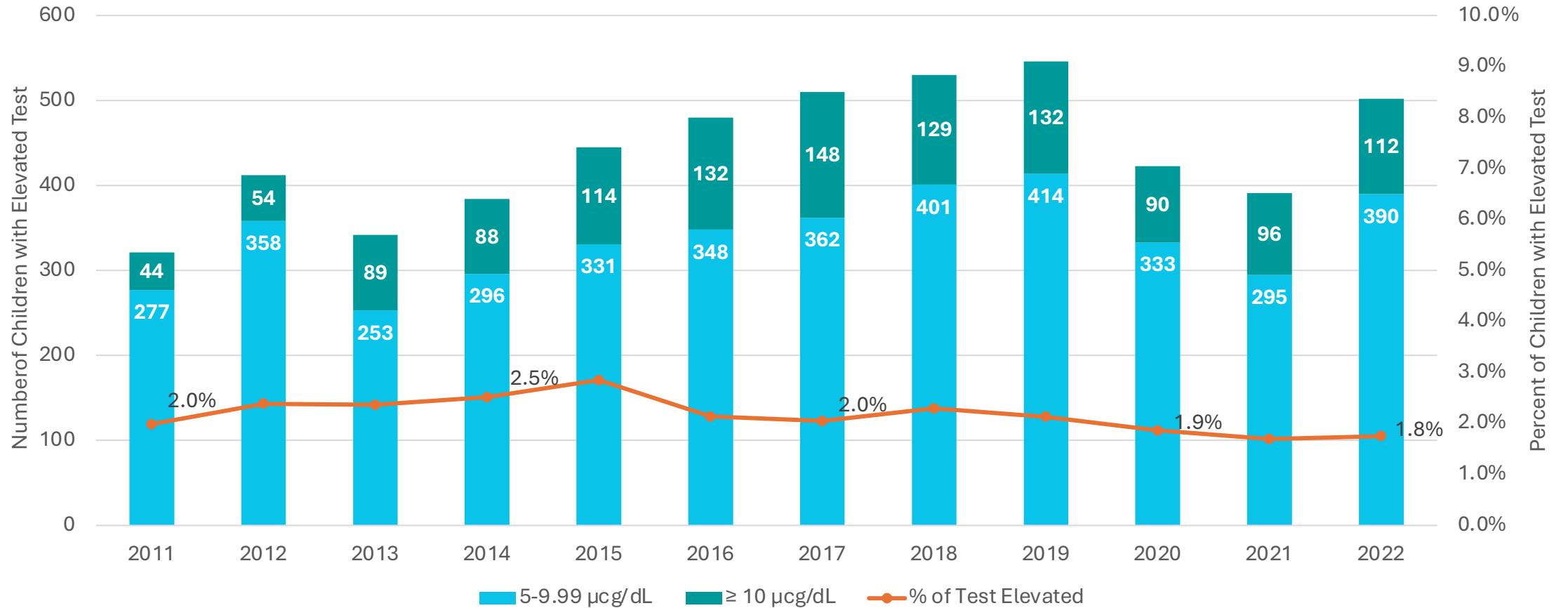
# Data: Test Number and Rate

## Number and Percent of Children 0-5 Years Old Tested for Lead in Washington State, 2011-2022



# Children with a Higher Test Result

Elevated Blood Lead Level ( $\geq 5\mu\text{g}/\text{dL}$ ) Test Rates of Children <72 Months of Age in Washington, 2011-2022





# Response

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# Blood Lead Levels

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- **Extremely High-Very Rare : >70 µg/dL**
  - Life threatening (can cause brain swelling and seizures)
- **Very High-Rare: >40 µg/dL**
  - Non-specific symptoms (anemia, tummy aches/colic, constipation)
- **Low-Most common in the US: 5-15 µg/dL**
  - Learning problems and behavior problems, slowed growth, hearing decreases
- **Elevated Blood Lead in WA State**
  - Greater than or equal to 5 µg/dL
  - CDC Reference Value is 3.5 µg/dL
    - Why? 97.5% of children in the U.S. between 1- years are below this value

# Response to Elevated Blood Lead (EBLL) Cases

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Cases reported to the state are provided to LHJ for response.

Response may include telephone contact, a home assessment, and other services.

DOH provides technical assistance and can conduct response to EBLL cases at local health request.

## Goals of response:

- Identify likely source(s) of lead exposure
- Provide education on reducing exposure
- Encourage follow-up blood lead testing
- Connect families to appropriate resources



# Helping Children Thrive

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- **Children exposed to lead need extra support to grow and thrive:**
  - Reduction or removal of lead in the immediate environment
  - Parent education about lead-safe cleaning and harm reduction
  - Nutritious diet rich in calcium, iron, vitamin C
  - Early enrichment
  - Education and collaboration with those who work with young children
  - Referrals to services, including developmental screening





# Questions?

# Looking Ahead

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## How Can I Reduce Exposure?

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- **Wash hands often**, especially after playing outside and before eating.
- For homes built before 1978, regularly check for signs of chipping, peeling, or deteriorating paint. Find out about lead-safe practices at <https://www.epa.gov/lead>.
- **Damp dust and mop** frequently and use a **HEPA vacuum** to clean carpets.
- **Remove shoes before entering the home** to avoid tracking soil inside. **Cover bare soil** with mulch or grass.
- If **household members work with lead**, have them shower and change clothes before entering the home. Wash work clothes separately from the family's clothes.
- **Run taps for a few minutes prior to use** and only use **cold water for cooking or mixing formula**.

## Next Steps/Partnership

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- Visit the [Washington Tracking Network](#) to learn about lead risk in your community.
- Contact us to learn more about childhood lead poisoning prevention efforts in your community.
- Visit the DOH website to find materials and resources for raising awareness, particularly among health care providers, that children in WA are still being exposed to lead.
- We are just beginning to connect with Tribal partners, and we want to learn how best to work together.

# Lead Publications

**Does your child need a lead test?**

Does your child . . .

Yes No

live in or regularly visit a home built before 1978, especially if it has had recent repairs?

have a sibling or friend with an elevated blood lead level?

have a parent or caregiver who works with lead, either at their job or their hobby?

come from a country outside the U.S.?

use traditional remedies or cosmetics, such as greta, azarcon, or kohli?

have Apple Health/Medicaid?

If you answered **YES** to any of these questions or if you think your child has had any contact with lead, **your child needs a blood lead test.**

Tear off the card below and give it to your child's doctor at your next well child visit. If your child has Apple Health insurance, take advantage of their no-cost testing, even if you answered **NO** to other questions.

**My child needs a blood lead test.**  
 Provider: A lead risk factor questionnaire identified this child as having one or more risk factors for lead exposure.

Federal law mandates that all children enrolled in Medicaid are required to get blood lead tests at ages 12 and 24 months.

For more information, visit [doh.wa.gov/lead](http://doh.wa.gov/lead).

Lead Test Card

**Has your child been tested for lead?**



Children who have been exposed to lead usually do not look or act sick. A blood lead test is the best way to find out. Ask your health care provider about getting your child tested for lead today.

To learn more about childhood lead exposure, talk to your health care provider or visit [www.doh.wa.gov/lead](http://www.doh.wa.gov/lead).

Childhood Lead Poisoning Prevention Program

DDH 311-019 June 2023  
 To request this document in another format, call 1-800-525-0127.  
 Deaf or hard of hearing customers, please call 711 (Washington Relay) or email [ask@doh.wa.gov](mailto:ask@doh.wa.gov).



Lead Testing Poster

WASHINGTON STATE DEPARTMENT OF HEALTH  
**Lead and Your Child**  
 Childhood Lead Poisoning Prevention Program

**QUICK GUIDE**

**Understanding How Lead Affects Your Child**

**What are the symptoms of lead exposure?**  
 Children who have been exposed to lead may not look or act any different. A blood test is the best way to tell if your child has been exposed to lead.

**How can lead hurt my child?**  
 Even at low levels, lead can hurt your child. Lead affects many parts of your child's body, especially the brain. Children under the age of 6 are most at risk for the harmful effects of lead.

Lead can cause:

- Difficulty with learning and attention
- Problems with hearing and speech
- Delayed growth and development
- Behavior problems like hyperactivity and aggression

**Where did my child get exposed to lead?**  
 Children can get exposed to lead by breathing it in or by eating it. The most common source for child lead exposure is from lead-based paint in homes built before 1978. Old lead paint can rub off and become tiny particles of dust a child may breathe in or eat when it gets on their hands or other objects they put in their mouths. Sometimes paint can come off in larger chips, which some children may put in their mouths. The lead dust and chips can even get into the soil around older homes and buildings, or where an old building once stood.

Other sources of lead include:

- Soil near old industrial sites, former orchard lands, and heavily traveled roads
- Drinking water that goes through lead pipes or plumbing fixtures with lead
- Lead passed to a fetus during pregnancy or to an infant through breastmilk
- Particles of lead carried home from a family member's work or hobby
- Some metal or painted toys or costume jewelry
- Some traditional remedies or cosmetics
- Some imported ceramics and aluminum cookware

**Help your child's brain growth**  
 While exposure to lead can harm your child's brain, that doesn't mean it always will. You can take steps to help improve your child's brain development.

Have your child get regular developmental screenings to make sure they are meeting their milestones.

To have your child screened, talk with your doctor, or call the Help Me Grow Washington Hotline at 1-800-322-2588.

**Contact us:**  
 1-800-909-9898  
[lead@doh.wa.gov](mailto:lead@doh.wa.gov)  
[doh.wa.gov/lead](http://doh.wa.gov/lead)



Lead and Your Child – Family Quick Guide



## Lead Publications Available

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- DOH has multiple lead publications available to download for free on our website: [Lead Publications | Washington State Department of Health](#).
- Print versions of the Lead Test Card can be ordered for free by emailing [lead@doh.wa.gov](mailto:lead@doh.wa.gov) or calling 800-909-9898.
- Print versions of the Lead Testing Poster and Lead and Your Child – Family Quick Guide will be available for free soon. You can pre-order print copies by emailing [lead@doh.wa.gov](mailto:lead@doh.wa.gov) or calling 800-909-9898.
- Many publications are available in multiple languages.

# Questions and Discussion

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# References

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[Tribal Lead Curriculum | US EPA](#)

[Local Lead Action Plan Template | US EPA](#)

[Local Lead Action Plan: A Guide for Local Leaders Demo](#)

[Recalls | CPSC.gov](#)

[Recalls, Market Withdrawals, & Safety Alerts | FDA](#)



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