



# Pediatric Screening for Elevated Lead Levels

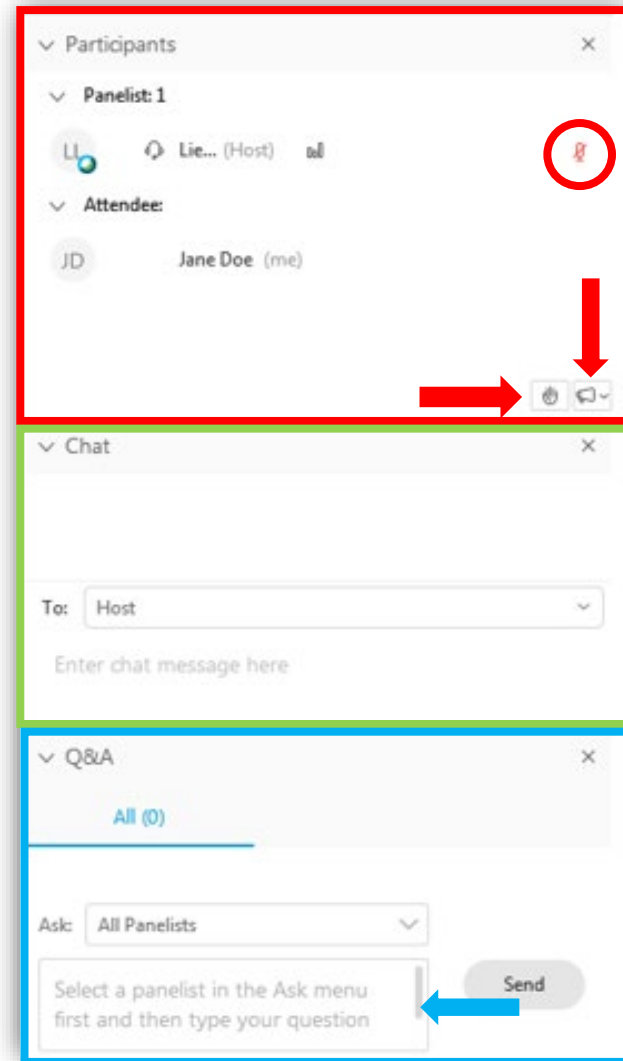
Robert Moore, MD, MPH, MBA  
Chief Medical Officer

# Agenda

- Welcome/Introductions/Housekeeping
- Health Effects of Lead
- Blood Lead Screening
- New Oversight Requirements
- Resources
- Contact Information
- Questions

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Dr. Robert Moore

Chief Medical Officer

# About Us



## Mission:

*To help our members, and the communities we serve, be healthy.*

## Vision:

*To be the most highly regarded managed care plan in California.*

# Case Study I

A 7-year-old girl is evaluated by her school for a learning disability. The psychologist evaluating the child knows that chronic low level lead exposure can cause brain damage and intellectual disabilities, so she refers the child to their primary care clinic.

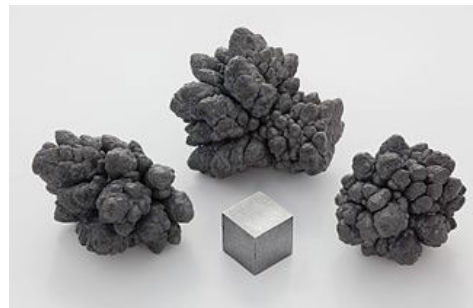
The mother has brought the child in for preventive health visits, but the pediatric provider did not routinely order lead testing at age 12 and 24 months, so the child was not screened at that time or afterward, until this referral.

Venous lead: 17 micrograms per deciliter (normal <5).

Environmental investigation: elevated lead levels in the water of the child's home.

# Lead Chemistry

- Transition metal
- First used 9000 years ago
- Properties: soft, dense, low melting point
- Low vapor point: air pollution
- Organic acid + Oxygen = Dissolved Lead Oxide
- “Hard water” with Carbonates and Sulfates forms protective coating inside lead pipes
- Plants grown in soil with high lead levels accumulate lead



82  
**Pb**  
LEAD 207.2

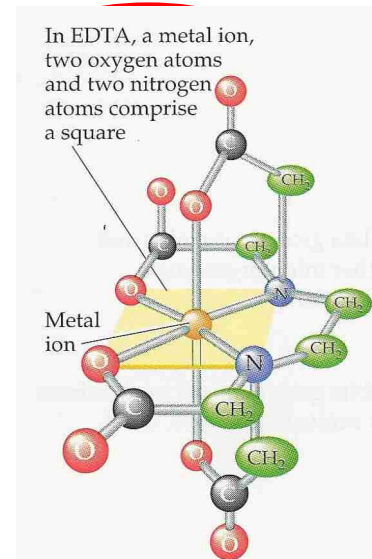
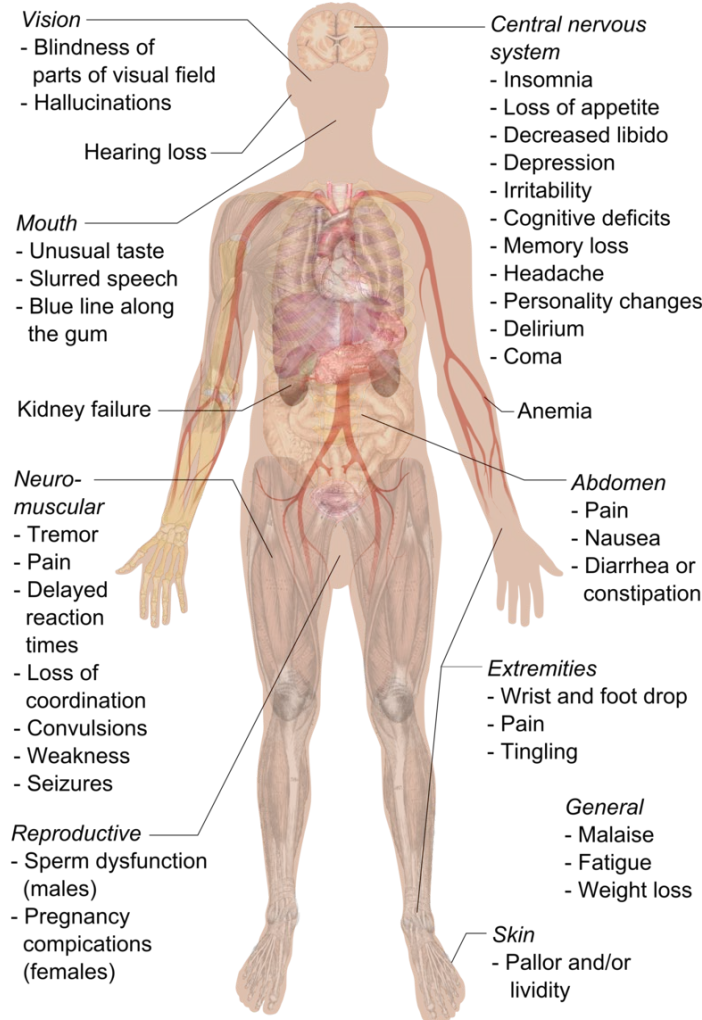
Periodic Table of the Elements

1 IA <b>H</b> Hydrogen 1.008																	18 VIIIA <b>He</b> Helium 4.003														
Atomic Number → <b>1</b> ← Symbol																															
Name → <b>Hydrogen</b> ← Atomic Weight																															
Electronegativity scale →																															
State of matter (color of name) GAS LIQUID SOLID SUPERCRITICAL																															
Subcategory in the metal-metalloid-nonmetal (color of background) A: Alkali metals B: Alkaline earths C: Transition metals D: Active metals E: Active nonmetals F: Noble gases																															
Unknown chemical properties																															
3 IIA <b>Li</b> Lithium 6.941	4 IIA <b>Be</b> Beryllium 9.012													13 IIIA <b>B</b> Boron 10.811	14 IVA <b>C</b> Carbon 12.011	15 VA <b>N</b> Nitrogen 14.007	16 VIA <b>O</b> Oxygen 15.999	17 VIIA <b>F</b> Fluorine 18.998	18 VIIIA <b>Ne</b> Neon 20.180												
11 IIA <b>Na</b> Sodium 22.990	12 IIA <b>Mg</b> Magnesium 24.305													13 IIIA <b>Al</b> Aluminum 26.982	14 IVA <b>Si</b> Silicon 28.086	15 VA <b>P</b> Phosphorus 30.974	16 VIA <b>S</b> Sulfur 32.06	17 VIIA <b>Cl</b> Chlorine 35.45	18 VIIIA <b>Ar</b> Argon 39.948												
19 IIA <b>K</b> Potassium 39.098	20 IIA <b>Ca</b> Calcium 40.078	21 IIIB <b>Sc</b> Scandium 44.956	22 IIIB <b>Ti</b> Titanium 47.88	23 IIIB <b>V</b> Vanadium 50.942	24 IIIB <b>Cr</b> Chromium 52.00	25 IIIB <b>Mn</b> Manganese 54.938	26 IIIB <b>Fe</b> Iron 55.845	27 IIIB <b>Co</b> Cobalt 58.933	28 IIIB <b>Ni</b> Nickel 58.69	29 IIIB <b>Cu</b> Copper 63.546	30 IIIB <b>Zn</b> Zinc 65.38	31 IIIB <b>Ga</b> Gallium 69.723	32 IIIB <b>Ge</b> Germanium 72.64	33 IIIB <b>As</b> Arsenic 74.922	34 IIIB <b>Se</b> Selenium 78.96	35 IIIB <b>Br</b> Bromine 79.904	36 IIIB <b>Kr</b> Krypton 83.80														
37 IIA <b>Rb</b> Rubidium 85.468	38 IIA <b>Sr</b> Strontium 87.62	39 IIIB <b>Y</b> Yttrium 88.906	40 IIIB <b>Zr</b> Zirconium 91.224	41 IIIB <b>Nb</b> Niobium 92.906	42 IIIB <b>Mo</b> Molybdenum 95.94	43 IIIB <b>Tc</b> Technetium 98.906	44 IIIB <b>Ru</b> Ruthenium 101.07	45 IIIB <b>Rh</b> Rhodium 102.905	46 IIIB <b>Pd</b> Palladium 106.42	47 IIIB <b>Ag</b> Silver 107.868	48 IIIB <b>Cd</b> Cadmium 112.415	49 IIIB <b>In</b> Indium 114.818	50 IIIB <b>Sn</b> Tin 118.710	51 IIIB <b>Sb</b> Antimony 121.757	52 IIIB <b>Te</b> Tellurium 127.6	53 IIIB <b>I</b> Iodine 126.905	54 IIIB <b>Xe</b> Xenon 131.29														
55 IIA <b>Cs</b> Cesium 132.905	56 IIA <b>Ba</b> Barium 137.327	57 IIIB <b>La</b> Lanthanum 138.905	58 IIIB <b>Ce</b> Cerium 140.12	59 IIIB <b>Pr</b> Praseodymium 140.908	60 IIIB <b>Nd</b> Neodymium 144.24	61 IIIB <b>Pm</b> Promethium 144.913	62 IIIB <b>Sm</b> Samarium 150.36	63 IIIB <b>Eu</b> Europium 151.964	64 IIIB <b>Gd</b> Gadolinium 157.25	65 IIIB <b>Tb</b> Terbium 158.925	66 IIIB <b>Dy</b> Dysprosium 162.50	67 IIIB <b>Ho</b> Holmium 164.930	68 IIIB <b>Er</b> Erbium 167.259	69 IIIB <b>Tm</b> Thulium 168.930	70 IIIB <b>Yb</b> Ytterbium 173.054	71 IIIB <b>Lu</b> Lutetium 174.967	72 IIIB <b>Hf</b> Hafnium 178.49	73 IIIB <b>Ta</b> Tantalum 180.948	74 IIIB <b>W</b> Tungsten 183.84	75 IIIB <b>Re</b> Rhenium 186.207	76 IIIB <b>Os</b> Osmium 190.23	77 IIIB <b>Ir</b> Iridium 192.222	78 IIIB <b>Pt</b> Platinum 195.084	79 IIIB <b>Au</b> Gold 196.967	80 IIIB <b>Hg</b> Mercury 200.59	81 IIIB <b>Tl</b> Thallium 204.38	82 IIIB <b>Pb</b> Lead 207.2	83 IIIB <b>Bi</b> Bismuth 208.98	84 IIIB <b>Po</b> Polonium 209	85 IIIB <b>At</b> Astatine 210	86 IIIB <b>Rn</b> Radon 222
87 IIA <b>Fr</b> Francium 223	88 IIA <b>Ra</b> Radium 226	89 IIIB <b>Ac</b> Actinium 227	90 IIIB <b>Th</b> Thorium 232.038	91 IIIB <b>Pa</b> Protactinium 231.036	92 IIIB <b>U</b> Uranium 238.029	93 IIIB <b>Np</b> Neptunium 237.048	94 IIIB <b>Pu</b> Plutonium 244.064	95 IIIB <b>Am</b> Americium 243.061	96 IIIB <b>Cm</b> Curium 247.070	97 IIIB <b>Bk</b> Berkelium 247.070	98 IIIB <b>Cf</b> Californium 251.083	99 IIIB <b>Es</b> Einsteinium 252.083	100 IIIB <b>Fm</b> Fermium 257.105	101 IIIB <b>Md</b> Mendelevium 258.105	102 IIIB <b>No</b> Nobelium 259.108	103 IIIB <b>Lr</b> Lawrencium 262.109	104 IIIB <b>Rf</b> Rutherfordium 261.102	105 IIIB <b>Db</b> Dubnium 262.109	106 IIIB <b>Sg</b> Seaborgium 266.107	107 IIIB <b>Bh</b> Bohrium 264.101	108 IIIB <b>Hs</b> Hassium 277.103	109 IIIB <b>Mt</b> Meitnerium 268.101	110 IIIB <b>Ds</b> Darmstadtium 271.103	111 IIIB <b>Rg</b> Roentgenium 272.103	112 IIIB <b>Cn</b> Copernicium 285.108	113 IIIB <b>Nh</b> Nihonium 284.106	114 IIIB <b>Fl</b> Flerovium 289.101	115 IIIB <b>Mc</b> Moscovium 288.103	116 IIIB <b>Lv</b> Livermorium 293.107	117 IIIB <b>Ts</b> Tennessine 289.101	118 IIIB <b>Og</b> Oganesson 294.109

# Lead Poisoning

- Easily absorbed in GI tract
- Bioaccumulation higher in children
- Enhanced clearance with chelation agents
- Toxicity
  1. Lead binds with sulfhydryl amino acids in enzymes
  2. Mimics or displaces other metals (Ca, Fe, Zn) used in enzymes

## Symptoms of Lead poisoning

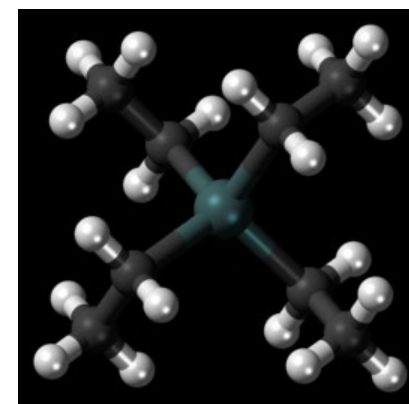


# Lead Exposure I

- Decades ago: mainly due to ingestion of lead-based paint by young children
  - White, red, and yellow pigments
  - Lead tastes sweet
- Lead-based paint prohibited for consumer use in the United States in 1978
- Leaded gasoline (1921-2000) was second most common cause



*Sunflowers*, by Vincent van Gogh, using lead chromate for bright yellow



**Tetraethyl lead**, formerly added to gasoline to prevent knocking

# Lead Exposure II

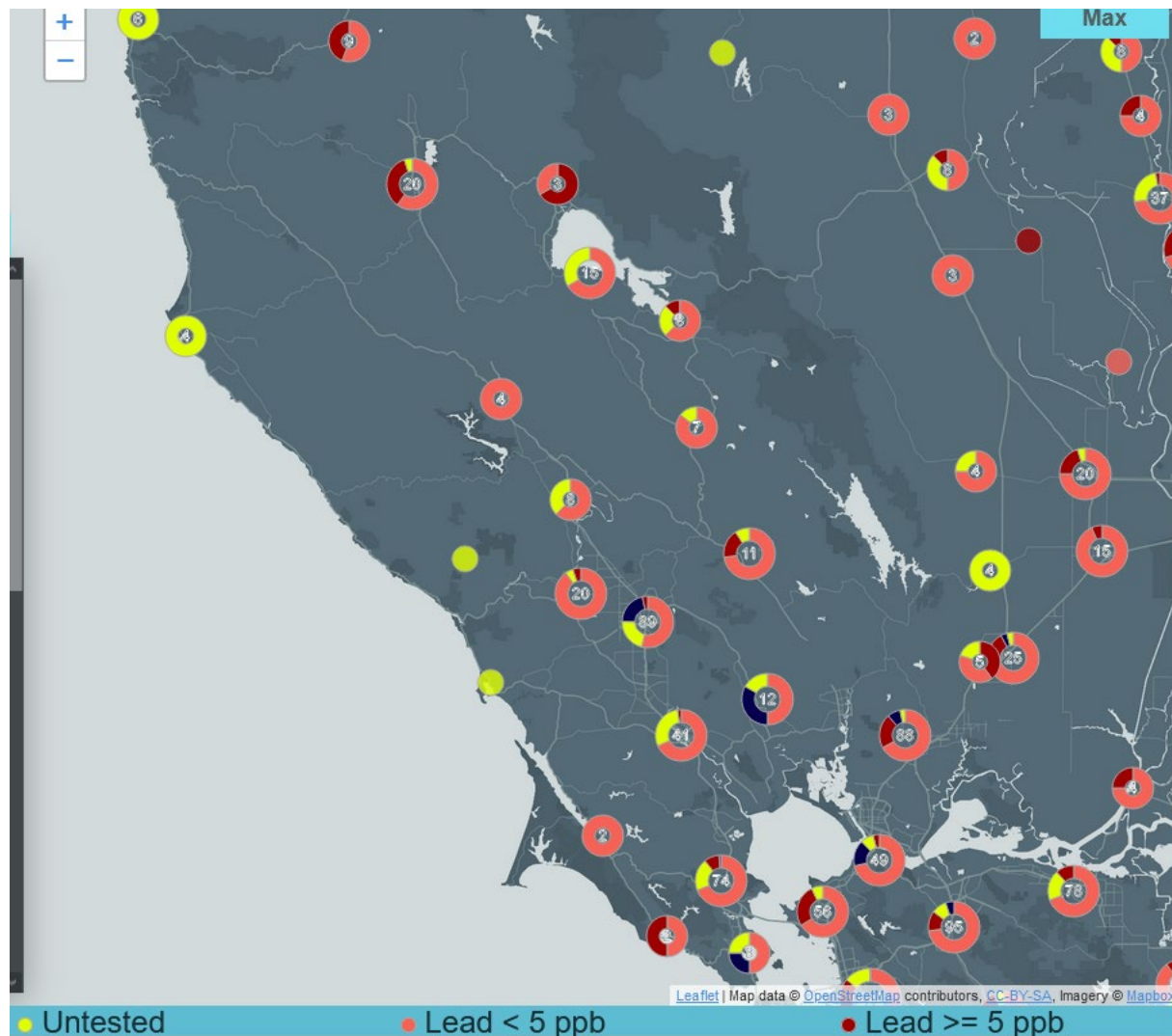
- Other sources of lead toxicity are now more common, including:
  - Lead pipes and lead solder affecting drinking water (restricted since 1986)
  - Ceramics (especially imported) that use lead-based glaze, affecting food and liquids served on these ceramics.
  - Toys (mostly imported) contaminated with lead
  - Candies (mostly imported) contaminated with lead
  - Home remedies



- 
- Map of lead levels in the Lake Superior region. The map shows various locations with circular markers. Yellow markers indicate 'Untested' locations, and red markers indicate 'Lead >= 5 ppb'. Some red markers also contain a number, likely representing lead concentration in ppb. A legend at the bottom identifies the markers: yellow circle for 'Untested', red circle for 'Lead < 5 ppb', and red circle with a number for 'Lead >= 5 ppb'. The map includes a scale bar and a north arrow.
- Legend:
- Untested
  - Lead < 5 ppb
  - Lead >= 5 ppb

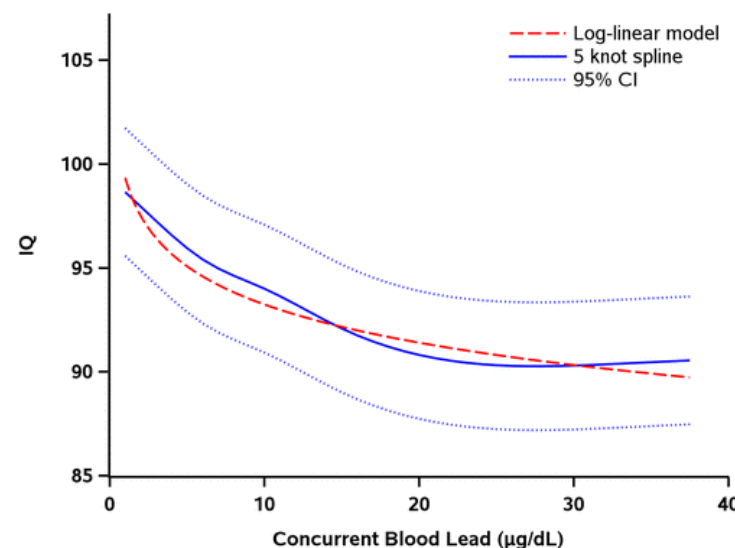
# Lead in Water in California: Southern Counties

- Lowest in Sonoma County
- Highest in Solano County



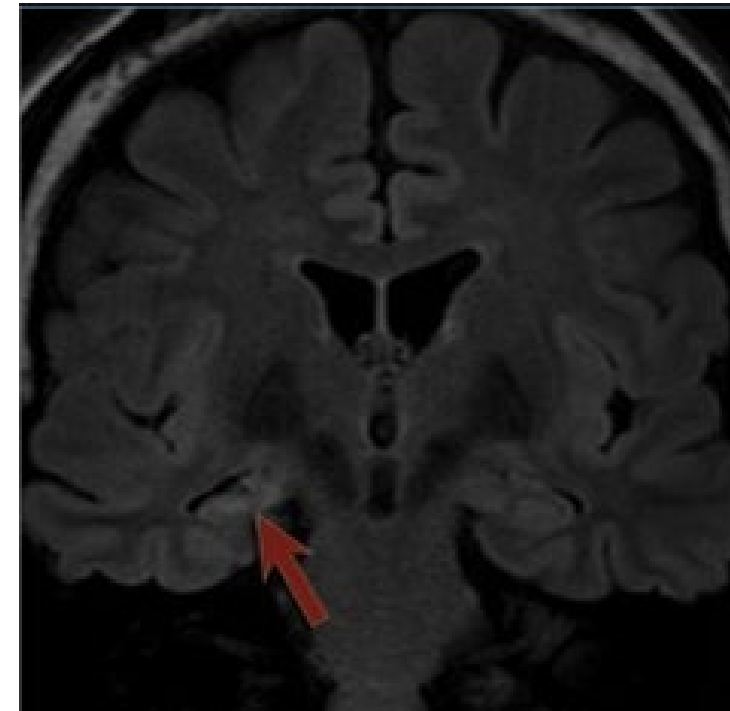
# Lead Toxicity

- Children: inhibits synapse formation in brain
- Over the last 2 decades, a growing body of evidence shows that even mild elevations of blood lead are associated with structural brain abnormalities and intellectual dysfunction.
  - [https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/CLPPB/Pages/prov\\_ed.aspx#](https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/CLPPB/Pages/prov_ed.aspx#)



# Lead Toxicity

- Recent long-term (34-year) study controlling for socio-economic status and showing both structural and intellectual effects associated even with low elevations of blood lead levels, in a dose-response relationship.
  - <https://jamanetwork.com/journals/jama/issue/324/19>



Hippocampal atrophy

# Bottom Line

- **No Level of Lead in the Body is Known to be Safe**

“Low-level lead exposure, even at blood lead concentrations below 5  $\mu\text{g}/\text{dL}$  (50 ppb), is a causal risk factor for diminished intellectual and academic abilities, higher rates of neurobehavioral disorders such as hyperactivity and attention deficits, and lower birth weight in children. No effective treatments ameliorate the permanent developmental effects of lead toxicity.”

--AAP, 2016

# Blood Lead Screening

- **Federal and state law require** clinicians caring for Medi-Cal patients to conduct blood lead screening on ***all*** children at ages 12 and 24 months, and to talk about potential lead exposures at ***every*** well child visit from 6 months to 6 years of age.
- California State Auditor report noted low rates of testing, statewide, including the counties served by Partnership HealthPlan of California (PHC), in particular in our northeastern counties (Shasta, Siskiyou, Trinity, Lassen and Modoc counties), AB 2276 and All Plan Letter 20-016 converged to require enhanced enforcement and oversight of legal requirement for lead testing.
- At the direction of DHCS, **PHC will be auditing compliance** with these requirements as part of our regular Site Review process. The usual progressive discipline options will be exercised for non-compliant sites.

# USPSTF Recommendations

## Clinical Summary: Screening for Elevated Blood Lead Levels in Children and Pregnant Women

<b>Population</b>	Children 5 years and younger and pregnant persons
<b>Recommendation</b>	No recommendation. Grade: I (insufficient evidence)

<b>Screening Tests</b>	<p>Elevated blood lead levels can be detected by measuring capillary or venous blood lead levels. Capillary blood testing is recommended for initial screening. Patients with positive screening results from capillary blood samples should have confirmatory venous blood testing.</p> <p>Questionnaires to identify children at increased risk of elevated blood lead levels are poorly accurate. The most commonly used questionnaire is the Centers for Disease Control and Prevention screening questionnaire.</p>
<b>Treatment and Interventions</b>	<p>Treatment options include residential lead hazard control measures, educational interventions (eg, counseling on household dust control measures), environmental interventions (eg, soil abatement, dust or paint removal, or removal of contaminated water sources), nutritional interventions, and chelation therapy. Finding the source of lead exposure is essential in preventing repeated or future exposures.</p>

For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, please go to <https://www.uspreventiveservicestaskforce.org>.

# CDC Recommendations

## CDC Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP) Recommendations for Providers (2012)

- All children enrolled in Medicaid should be screened with a blood lead test at ages 12 and 24 months or at ages 36--72 months if they have not previously been screened.
- ACCLPP recommends administration of a blood lead screening test for all children enrolled in Medicaid at ages 12 and 24 months; children who have not previously been screened should have a blood lead test at ages 36--72 months (11). Administering a risk-assessment questionnaire instead of a blood lead test does **not** meet Medicaid requirements.
- Recommends *universal* blood lead screening in areas where more than 27% of the housing was built before 1950, or where at least **12%** of children 12 to 36 months of age have blood lead levels greater than 10 µg per dL.

CDPH follows the CDC recommendation

## Case II

A young mother from Lassen County brings her 12 month old baby in for a well child visit. The mother completes the Staying Health Assessment, in which no developmental concerns are expressed. She is breastfeeding her baby, who also eats age appropriate solid foods. The baby is not taking a vitamin supplement. A capillary blood specimen is obtained to check the hemoglobin level, which is found to be 10.9 g/dL.

The child is given information about iron-rich foods, given a prescription for multivitamin with iron and fluoride, and instructed to go to the laboratory for a venous blood draw for a CBC and blood lead level.

The child is next seen in 3 months, but the mother did bring her child to the lab, worried about how traumatic it would be to draw the blood. The child is receiving the vitamin supplement about twice a week (the mother found that giving it daily led to constipation).

Finally at age 2, a blood lead test is performed, and the lead level is found to be 18.2 mcg/dL, and the CBC shows a microcytic anemia, with a hemoglobin of 9.2 g/dL.

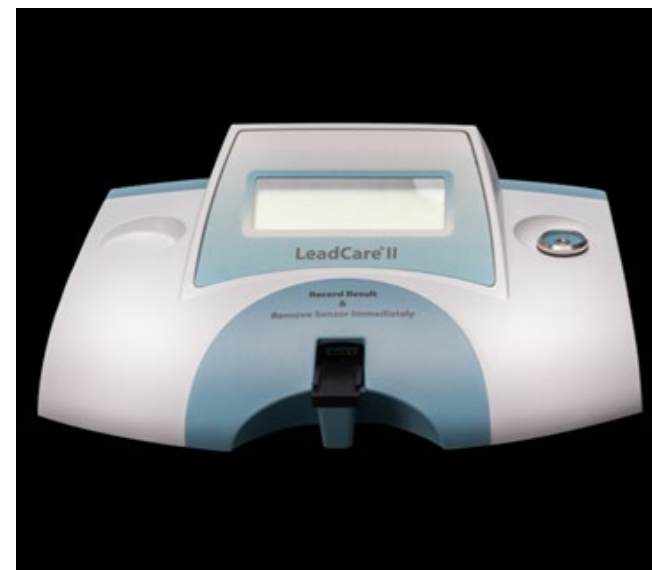
# Options for Screening

- Venous blood sample, usually drawn in lab
- Capillary blood sample, drawn in lab
- Capillary blood sample, drawn in PCP office, sent to lab for analysis
- Capillary blood sample, drawn in PCP office, analyzed in PCP office using point of care device



# In-Office CLIA-waived Lead Testing

- LeadCare II
- Cost: Approximately \$2500
- Result immediately available
- Must register with CDPH  
(takes some time)
- Required to regularly send all  
results directly to CDPH
- If abnormal result, must be  
confirmed with venous lead  
test



# California Law on Screening

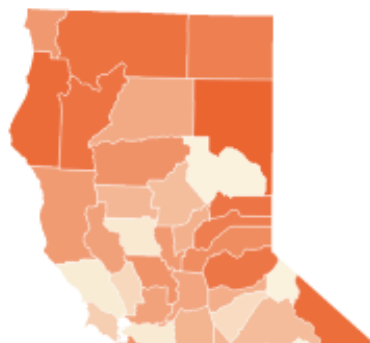
<p><b>ANTICIPATORY GUIDANCE</b></p>	<p>At each periodic assessment from 6 months to 6 years. Under California state laws and regulations, <b>all</b> health care providers are <b>required</b><sup>1</sup> to inform all parents and guardians about:</p> <ul style="list-style-type: none"> <li>• The risks and effects of childhood lead exposure.</li> <li>• The requirement that children enrolled in Medi-Cal receive blood lead tests.</li> <li>• The requirement that children not enrolled in Medi-Cal who are at high risk of lead exposure receive blood lead tests.</li> </ul>
<p><b>BLOOD LEAD TEST</b></p>	<ul style="list-style-type: none"> <li>• All children in publicly supported programs such as Medi-Cal, Women, Infants and Children (WIC), and CHDP at both 12 months and 24 months of age.<sup>1</sup></li> <li>• Perform a "catch up" test for children age 24 months to 6 years in a publicly supported program who were not tested at 12 and 24 months.<sup>1</sup></li> </ul>
<p><b>ASSESS</b></p>	<ul style="list-style-type: none"> <li>• If child is not in a publicly supported program: <ul style="list-style-type: none"> <li>- Ask: "Does your child live in, or spend a lot of time in, a place built before 1978 that has peeling or chipped paint or that has been recently remodeled?" <b>Blood lead test if the answer to the question is "yes" or "don't know."<sup>1</sup></b></li> </ul> </li> <li>• Blood lead test if a change in circumstances has put child at risk of lead exposure.</li> <li>• <i>Other indications for a blood lead test:<sup>2</sup></i> <ul style="list-style-type: none"> <li>- <i>Parental request</i></li> <li>- <i>Sibling, playmate or other close contact with an increased blood lead level</i></li> <li>- <i>Suspected lead exposure (see possible sources of lead exposure on other side)</i></li> <li>- <i>History of living in or visiting country with high levels of environmental lead</i></li> </ul> </li> </ul>

<sup>1</sup> Health and Safety Code, sections 105285-105286; California Code of Regulations, Title 17, Sections 37000 to 37100

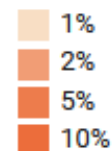
<sup>2</sup> Items in italics are not in regulations but also should be considered.

# County Prevalence of Elevated Lead

## Elevated Blood Lead Levels In Children, By County



Percentage of Children Tested  
With  $\geq 4.5$  Micrograms of Lead  
Per Deciliter of Blood



### Northern Region

- Del Norte 2.2%
- Humboldt 10.3%
- Trinity 7.8%
- Siskiyou 8.3%
- Shasta 1.8%
- Modoc 3.9%
- Lassen 12.7%

### Southern Region

- Marin 1.3%
- Sonoma 0.7%
- Napa 1.1%
- Solano 1.9%
- Yolo 2.4%
- Mendocino 2.1%
- Lake 1.9%

# Oversight Requirements

- **Member Outreach:** Beginning January 1, 2021, PHC must identify, at least quarterly, all members aged 6 months to 6 years, who have no recorded blood lead screening.
  - ✓ PHC will reach out to the members directly to recommend lead screening
  - ✓ PHC will mail a list of members which our data show to be due for a lead test to Primary Care Providers (PCPs) who are also expected to reach out to these members and remind them of the need to be tested.
- **Auditing parent refusals:** If providers elect not to order the screening they must document in detail, the reason for not conducting the screening.
  - ✓ Documentation should include *signature of parent/guardian who refused screening* or the reason the signature could not be collected.
  - ✓ PHC will be required to audit compliance with this requirement by conducting chart audits.

# Lead Screening in Children (LSC)

## Northwest Region

Current Rate

**71.82**



## Northeast Region

Current Rate

**14.81**



## Southwest Region

Current Rate

**52.07**



## Southeast Region

Current Rate

**51.46**



Admin

Updated:  
Oct. 2020

Source:  
HEDIS MY 2019  
Final Rates

## Benchmarks

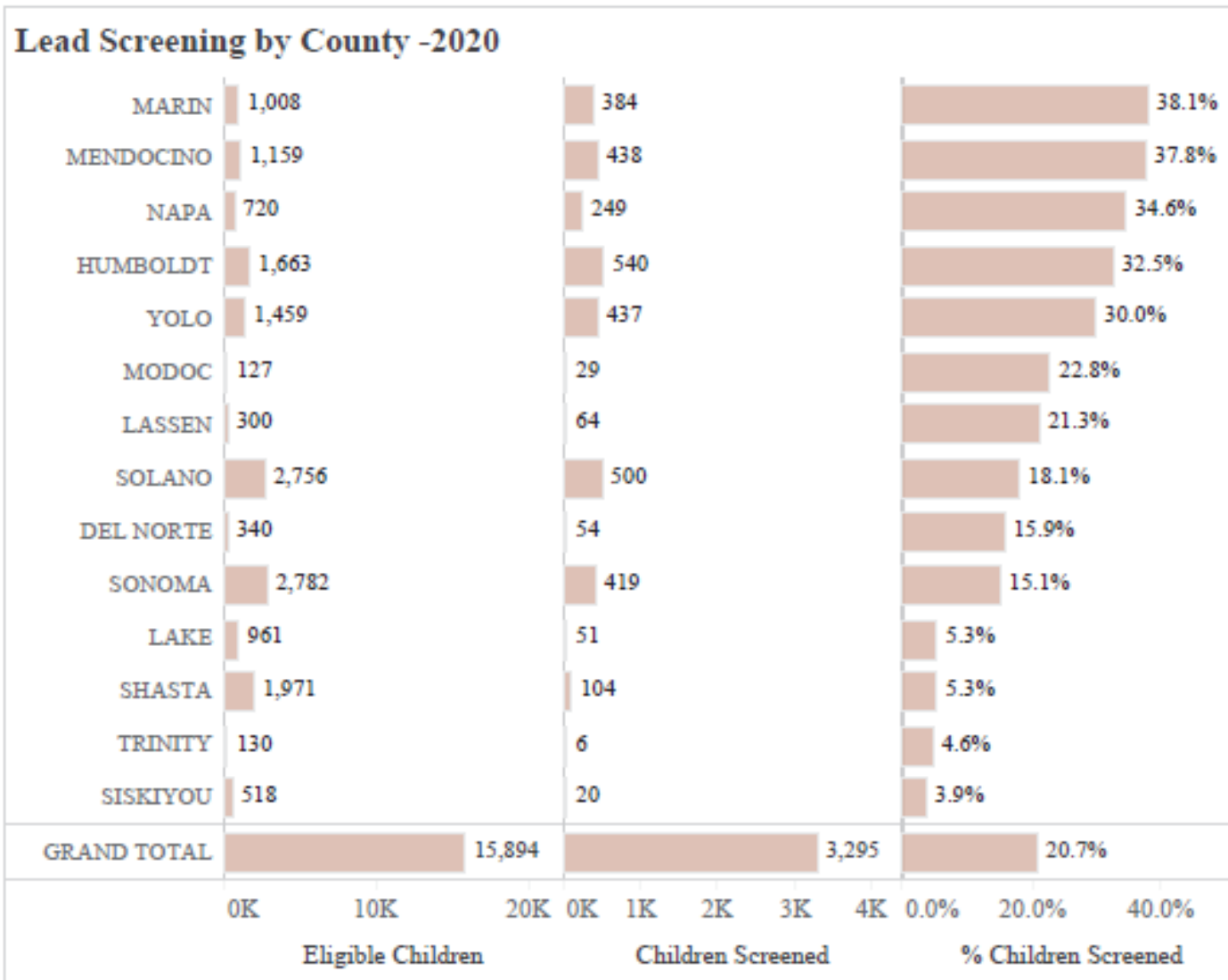
25<sup>th</sup>: 62.53

50<sup>th</sup>: 73.13

75<sup>th</sup>: 80.08

90<sup>th</sup>: 85.64

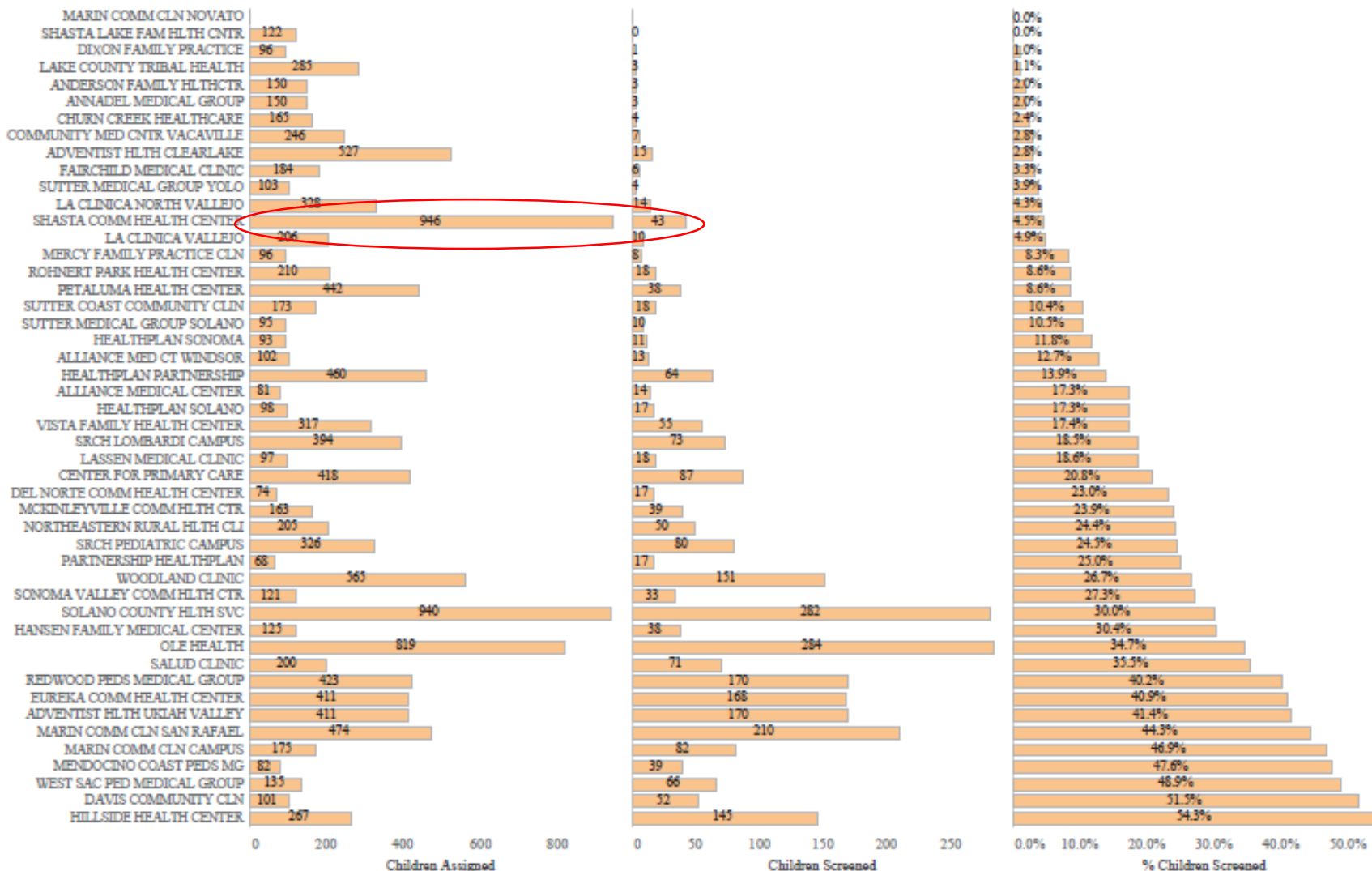
# PHC County Data



# Screening Rates: Large Providers

## Lead Screening by PCP, CY 2020

Exclusion - PCPwith <50 children assigned



## Case III

A Spanish-speaking father brings in a 4 year old boy for a well child visit. The child had a normal hemoglobin and lead test at age 13 months of age. The child has been having intermittent abdominal pain for months, which the parents attributed to food allergies. The child is awake and alert, but not very talkative.

The nurse practitioner uses a standardized screening tool for evaluating for exposure to lead, and discovers that the child is given candies from Mexico as treats from the boy's grandparents in Mexico.

The nurse practitioner gives the father a Spanish language handout on avoiding lead exposure. She searches an on-line database and discovers that the brand of candy sometimes has elevated lead content. She orders a venous lead test and a CBC. The lead level is 47 mcg/dL, and the hemoglobin is 9.3 g/dL.

# Supportive Materials

## 1. Anticipatory Guidance:

- Counselling Parents at all visits from age 6 months to 6 years
  - Risks and Effects of Childhood lead exposure
  - State requirement of a blood screening test of all children with Medi-Cal at ages 12 and 24 months

## 2. Risk assessment for potential sources of lead exposure (ages 6 months to 6 years)

- If risk is identified, blood screening test is required.
- Do at *every* visit, even if blood lead test is also planned

## 3. Form for documenting parental refusal to screen for elevated lead levels

# Anticipatory Guidance Materials

## California Department of Public Health Lead Poisoning Prevention Branch:

- **Protect your Child from Lead**
  - General pamphlet
  - 21 Languages
- **What Can you Do to Protect Your Child from Lead?**
  - First page: briefly describes dangers of lead; spaces for entering results of lead test and order for lead test
  - Second page: more detail about potential sources of lead exposure
  - English and Spanish only

# Protect your Child from Lead

## Protect your child from LEAD



**Lead can be found in many places inside and outside your home.**

**Lead can hurt your child.** Lead can harm a child's brain. Lead poisoning can make it hard for children to learn, pay attention and behave. Most children who have lead poisoning do not look or act sick.

**Take these steps to keep your family safe from lead.**

### Taking Care of Your Child

**Do not let your child chew on painted surfaces or eat paint chips.** Some old paint has lead in it. When paint gets old, it breaks down into dust. This dust spreads all around your home.



**Wash your child's hands and toys often.** Always wash hands before eating and sleeping. Lead dust and dirt can stick to hands and toys that children put in their mouths.

**Feed your child healthy meals and snacks every day.** Make sure to give your child fruit and vegetables with every meal, and foods that have:

- **calcium** (milk, plain yogurt, almond milk, soy milk, spinach, kale, tofu, cheese, calcium-fortified cereals)
- **iron** (beef, chicken, turkey, eggs, cooked dried beans, almonds, cashews, peanuts, pumpkin seeds, potatoes, oatmeal)
- **vitamin C** (oranges, tomatoes, tomatillos, limes, bell peppers, purple cabbage, papaya, jicama, and broccoli)



Calcium, iron and vitamin C help keep lead from hurting your child.

**Avoid giving your child sweets.** Some candies from outside the USA have lead in them. Fresh fruit and vegetables, lean meats, whole grains and dairy products are healthier choices for your child.

**Talk to your child's doctor about testing for lead.**

### Inside and Outside Your Home

**Let water run until it feels cold** (usually at least 30 seconds) before using it for cooking or drinking. Always use water from the cold tap for cooking, drinking, or baby formula (if used). If water needs to be heated, draw water from the cold water tap and heat the water on the stove or in a microwave.

**Keep your home clean and dust-free.**

Wet mop floors, wet wipe windowsills, vacuum, and wash all surfaces often. This keeps lead in dust and dirt from spreading in the house.



**Keep furniture away from paint that is chipped or peeling.**

Move cribs, playpens, beds and high chairs away from damaged paint. This helps keep lead in paint chips and dust away from your child.



**Never sand, dry scrape, power wash or sandblast paint** unless it has been tested and does not have lead in it.

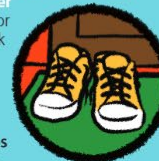
**There may also be lead in the dirt around your home from the past use of lead in gasoline and in factories.**

**Cover bare dirt outside where your child plays.** Use grass or other plants, bark, gravel, or concrete. This keeps lead in the dirt away from your child.

**Take off shoes or wipe them on a doormat before going inside.** This keeps lead in dirt outside.

**Change out of work clothes and shoes, and wash up or shower before getting in a car or going home if you work with lead.** Lead is in many workplaces:

- painting and remodeling sites
- radiator repair shops
- places that make or recycle batteries



Ask your employer to tell you if you work with lead. Children can be poisoned from lead dust brought home on skin, hair, clothes, and shoes, and in the car.

### Things you Buy and Use

**Avoid using water crocks or dishes and pots that are worn or antique, from a discount or flea market, made of crystal, handmade, or made outside the USA unless they have been tested and don't have lead.**



**Do not let your child put jewelry or toys in his or her mouth.** Some jewelry and toys have lead in them. There is no way to tell if there is lead in jewelry and toys. Even items marked "Lead Free" can have lead in them.

**Talk to your doctor before using imported products that often have lead in them, like**

- **natural remedies** — bright orange, yellow, or white powders for stomach ache or other illnesses
- **make-up** — Kohl, Khali, Surma, or Sindoor
- **food or spices**, like chapulines or turmeric



**These items have lead in them — keep them away from your child:**

- lead fishing sinkers
- lead bullets
- lead solder

### More Information

Go to [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or contact:



# What Can You Do . . .



## What Can You Do to Protect Your Child From Lead?

Name \_\_\_\_\_

Date of Birth \_\_\_\_\_

Lead is a poison. It can harm your child's brain, kidneys, and other organs. Lead can make it hard for a child to learn and behave. Lead is harmful even in very small amounts, and it is most dangerous for young children.

Children with lead in their bodies usually do not look or act sick. Your child may not tell you that he or she feels bad. A blood lead test is the only way to know if there is lead in your child's body.

Most children in California have a blood lead level less than 5µg/dL.

☐ Your child must get a blood test for lead.  
 Go to \_\_\_\_\_ to get your child tested.

Children who may come into contact with lead should have a blood test to check for lead when they are 1 and 2 years old. By taking the steps shown on the back of this page, you can help keep your child safe from lead.

☐ Your child had a blood test for lead on \_\_\_\_\_. His/Her blood lead level was \_\_\_\_\_.

This is not a high blood lead level, but it is important to keep your child away from lead. You can take the steps shown on the back of this page to help keep your child safe from lead.

☐ Your child had a blood test for lead on \_\_\_\_\_. His/Her blood lead level was \_\_\_\_\_. It is important that you take the steps on the back of this page to keep your child away from lead.

Make sure that your child has another blood lead test in \_\_\_\_\_ months.

### Take these steps to help keep your child safe from lead

Lead may be in...	What can you do?
Old paint inside or outside the home — most lead paint is in homes built before 1978	Move cribs, high chairs, and playpens away from cracked or peeling paint. Do not allow your child to chew on windowsills or other painted surfaces. Call your local lead poisoning prevention program about testing paint for lead.
Dust on windowsills, floors, and toys	Wet mop floors and wet wipe windowsills and other surfaces. Wash toys often. Wash children's hands before eating and sleeping.
Dirt outside your home	Cover bare dirt with stones, grass, plants, or gravel. Wipe shoes or take them off BEFORE going in the house.
Clothing or hair if you work around lead	Shower and change clothes BEFORE coming home from work and BEFORE holding your child.
Pottery and dishes made outside of the US, in places such as Mexico or China	Call your local lead poisoning prevention program for more information about testing pottery and dishes for lead.
Natural Remedies • Azarcon — orange or yellow powder • Greta — orange or yellow powder • Paylooh — red powder	Do not let anyone give natural remedies to your child. Ask your doctor to help you find other remedies.
Some cosmetics • Surma • Kohl • Khali	Do not use these on children. Call your local lead poisoning prevention program about testing cosmetics for lead.
Inexpensive jewelry for children	Do not allow young children to play with or touch these items.
Some candies from Mexico	Choose healthy snacks for your child, like fresh fruits, vegetables, lean meats, and dairy products.
Other items, like: • Fishing sinkers • Bullets • Stained glass-making kits	Keep these items away from your child. Wash hands well after touching these items.

For more information about keeping your child safe from lead, call your local lead poisoning prevention program.



[www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb)

# Risk Factor Screening

- No CDPH standard currently
- Not covered in mandated Staying Healthy Assessment questionnaire
- Several other states with examples online
  - South Carolina
  - Illinois
  - New Mexico
  - Oregon
- May use one of these or adapt them for your practice
- Generally one page long

## Child Lead Exposure Questionnaire

Please answer these questions with: **Yes, No, or Don't Know.** The answers will help you and your health care provider decide if your child needs a blood test for lead.

1.	Is your child enrolled in or eligible for Medicaid? <i>Children enrolled in Medicaid are required by law to be tested for lead at 12 months and again at 24 months of age, and between the ages of 36 months and 72 months of age, if not tested at 12 and 24 months of age.</i>	Yes	No	Don't know
2.	Is your child enrolled in any public assistance programs such as WIC or TANF?	Yes	No	Don't know
3.	Does your child live in, or regularly visit (for daycare or babysitting), a house built before 1950? <i>Older houses may have lead-based paint, which breaks down into dust that can be swallowed or inhaled by your child.</i>	Yes	No	Don't know
4.	Does your child live in or regularly visit a house that has recently been remodeled? <i>Remodeling in an older house, or even one built as late as 1978, can create dust that contains lead, if lead-based paint is present.</i>	Yes	No	Don't know
5.	Does any other child of yours or a child of a relative or friend have an elevated blood lead level?	Yes	No	Don't know
6.	Does your child live with or regularly visit an adult whose work or hobby uses lead?	Yes	No	Don't know
7.	Do you (or any family members, or a curandera or sobador) give your child orange, red, or yellow powder such as Greta or Azarcon, or use "Navajo" clay for stomach ache, nausea, and diarrhea?	Yes	No	Don't know
8.	Do you use Kohl, Alkohl, or Surma on your child's skin? Or use traditional Middle Eastern, Oriental, and Ayurvedic preparations?	Yes	No	Don't know
9.	Does your home have imported plastic/vinyl mini-blinds? <i>Some imported plastic mini-blinds made before 1996 have lead in them.</i>	Yes	No	Don't know
10.	Does your child eat, put things in his/her mouth, or chew on things that aren't food? <i>Dirt, wood (especially window sills), paint chips, jewelry, shell casings, fishing sinkers, lead shot, shoes, or socks can have lead or lead dust on/in them.</i>	Yes	No	Don't know
11.	Do you use imported pottery for cooking, storing, or serving food? <i>Some Mexican, Chinese, and Italian potteries have lead in the glaze, which can get into the food.</i>	Yes	No	Don't know
12.	Does your child live or play near a junkyard, dump, mine, smelter, busy street, or highway? <i>These places can have lead dust in the air or in the dirt. Even if the smelter or mine is closed, lead can still be in the dirt.</i>	Yes	No	Don't know
13.	Does your child eat tamarind/chile candy or salt/lemon/chile seasonings or chapulines that are made in Mexico? <i>Some of these products may contain lead.</i>	Yes	No	Don't know

If you answered **Yes** to any of these questions, your child may be at risk for being exposed to lead! Your child's health care provider will need to order a blood test.

# Blood Lead Screening

**If a child's screening test result is  $>5$  mcg/dL:**

1. Parental Lead Education
2. Follow-up venous lead testing
3. Complete History and Physical Exam, including neurodevelopmental assessment
4. Nutrition counseling to increase iron and calcium intake
5. Report result to county health department, who will perform an environmental investigation

**In addition, if a child's screening test result is  $> 10$  mcg/dL:**

6. Order a hemoglobin and iron levels to ensure no iron-deficiency

**In addition, if a child's screening test result is  $>45$  mcg/dL:**

7. Chelation therapy

**If lead level is  $>70$  mcg/dL, hospitalization recommended**

# Follow Up of Elevated Lead

## Recommended Venous Blood Lead Level Confirmation Schedule

Blood lead level ( $\mu\text{g}$ per dL [ $\mu\text{mol}$ per L])	Time to confirmation testing
$\geq 5$ to 9 (0.24 to 0.43)	One to three months
10 to 44 (0.48 to 2.13)	One week to one month
45 to 59 (2.17 to 2.85)	48 hours
60 to 69 (2.90 to 3.33)	24 hours
$\geq 70$ (3.38)	Urgently, as an emergency test

*Adapted from Centers for Disease Control and Prevention. Recommended actions based on blood lead level. Updated March 26, 2018. [https://www.cdc.gov/nceh/lead/acclpp/actions\\_blls.html](https://www.cdc.gov/nceh/lead/acclpp/actions_blls.html).*

# Key Takeaways

- Elevated blood lead levels greater than 5 mcg/dL are considered elevated, with action required
- All PHC children must have blood lead tests ordered at age 12 and 24 months, with a catch up test afterwards up until age 6 if not tested previously
- Rates of testing in the PHC region are variable, but all could be better
- Parental refusal must now be documented in the medical record. This will be evaluated at periodic medical record reviews
- Obtaining a capillary lead test at the time of the well-child visit is a best practice to increase screening rates.



# Resources

All Plan Letter 20-016:

<https://www.dhcs.ca.gov/formsandpubs/Documents/MMCDAPLsandPolicyLetters/APL2020/APL20-016.pdf>

AB2276:

[https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201920200AB2276](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201920200AB2276)

Prevention of Childhood Lead Toxicity:

<https://pediatrics.aappublications.org/content/138/1/e20161493>

Lead Levels in California Schools:

<https://calpirg.org/feature/cap/get-lead-out-statewide-map>

Elevated Lead by Counties:

<https://khn.org/news/california-isnt-testing-enough-children-for-lead-prompting-legislation/>

Standard of Care Guidelines on Childhood Lead Poisoning for California Health Care Providers:

[https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/CLPPB/CDPH%20Document%20Library/CLPPB-care%20guideline\\_sources%20of%20lead.pdf](https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/CLPPB/CDPH%20Document%20Library/CLPPB-care%20guideline_sources%20of%20lead.pdf)



# Contact Information

Monday - Friday  
8 a.m. - 5 p.m.

Claims Questions  
(707) 863-4130

Partnership HealthPlan of California  
[www.partnershiphp.org](http://www.partnershiphp.org)

Clinical Questions  
Contact your Regional  
Medical Director

Other Questions  
Contact your local Provider  
Relations Representative

# Questions



# Pediatric Blood Lead Screening Frequently Asked Questions

## Am I required to conduct blood lead screenings?

Federal and state law require clinicians caring for Medi-Cal patients to conduct blood lead screening on *all* children at ages 12 and 24 months, and to talk about potential lead exposures at *every* well child visit from 6 months to 6 years of age.

At the direction of DHCS, **PHC will be auditing compliance** with these requirements as part of our regular Site Review process. The usual progressive discipline options will be exercised for non-compliant sites.

## Am I going to receive a report and what do I do with it?

Yes, you will receive a report, each quarter, which includes a list of members and the data will show which members are due for a lead test. You are expected to reach out to these members and remind them of the need to be tested. Your designated Provider Relations representative will be following up with you to confirm receipt of list each quarter.

## How do I read the report?

The quarterly report is broken up in categories showing members by age who:

- No prior test as of the report date (6 months-1 y/o; 1-2 y/o)
- Had a prior test done as of the report date (18 months-2 y/o; 2-6 y/o)
- Had a single test before 18 months of age and are due for a second screening test (2-3 y/o)
- No prior tests and are due for a single screening test (2-6 y/o)

## Who needs a blood screening test?

All child members in accordance with the following:

- a) At 12 months and at 24 months of age.
- b) When the network provider performing a Periodic Health Assessment (PHA) becomes aware that a child member who is 12 to 24 months of age has no documented evidence of a blood lead screening test taken at 12 months of age or thereafter.
- c) When the network provider performing a PHA becomes aware that a child member who is 24 to 72 months of age has no documented evidence of a blood lead screening test taken.
- d) At any time a change in circumstances has, in the professional judgement of the network provider, put the child member at risk.
- e) If requested by the parent or guardian.

## What are the options for screening?

- Venous blood sample, usually drawn in lab
- Capillary blood sample, drawn in lab
- Capillary blood sample, drawn in PCP office, sent to lab for analysis
- Capillary blood sample, drawn in PCP office, analyzed in PCP office using point of care device

## What forms should be used to billed claims?

Fee-for-service claims and capitated encounters for covered blood lead level screening and treatment services shall be submitted to PHC using appropriate and current claims forms/format (CMS-1500/UB-04 claim forms, or their electronic equivalents (837-P/837-I)). Consistent with DHCS APLs 14-019 and 17-005, capitated encounters shall be validated, by PHC, for completeness and accuracy when making payment and/or submission to DHCS. This includes screening blood lead screening encounters for the use of appropriate indicators.

## Do I have to document reasons for not performing the blood lead screening test in the child member's medical record?

Yes, you must document why you did not perform the blood lead screen test in the child member's records. If consent has been withheld, the provider must obtain a signed statement of voluntary refusal. If you are unable to obtain a signed statement of voluntary refusal because the party that withheld consent refuses or declines to sign it, or is unable to sign it (e.g., when services are provided via telehealth modality), then **you must document the reason for not obtaining a signed statement of voluntary refusal in the child's medical record. DHCS will consider the above-mentioned documented efforts that are noted in the child's medical record as evidence of compliance with blood lead screening test requirements.**

## What resources are available for reference?

- **All Plan Letter 20-016:**  
<https://www.dhcs.ca.gov/formsandpubs/Documents/MMCDAPLsandPolicyLetters/APL2020/APL20-016.pdf>
- **AB 2276:**  
[https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201920200AB2276](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201920200AB2276)
- **California State Audit Report:**  
<https://www.auditor.ca.gov/pdfs/reports/2019-105.pdf>
- **Standard of Care Guidelines on Childhood Lead Poisoning:**  
[https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/CLPPB/CDPH%20Document%20Library/CLPPB-care%20guideline\\_sources%20of%20lead.pdf](https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/CLPPB/CDPH%20Document%20Library/CLPPB-care%20guideline_sources%20of%20lead.pdf)
- **PHC Provider Webinar: Pediatric Screening for Elevated Lead Levels:**  
[http://www.partnershiphp.org/Providers/Medi-Cal/Pages/ProviderEducationTraining\\_Materials.aspx](http://www.partnershiphp.org/Providers/Medi-Cal/Pages/ProviderEducationTraining_Materials.aspx)

Please contact your Provider Relations Representative if you have more questions.

# Keeping Your Child Safe from Lead and Other Heavy Metals in Baby Foods



A recent congressional report found heavy metals, including lead, arsenic, cadmium, and mercury, in baby foods and baby juices. Heavy metals are especially dangerous for young children. This news can leave parents with a lot of questions. Here is more information and tips for parents to keep their children safe.

## What can I do?

- Feed your child healthy meals and snacks and not too much of one thing.
- Limit higher risk foods for heavy metal exposure and make safer choices (see list below).
- Wash hands often, especially before eating. Use lead-safe dishware and cold tap water for drinking, cooking, and baby formula.
- **If you think your child may have been exposed to lead, ask your child's doctor about a blood lead test.**

## Why is this important?

- There is no known safe level of lead in the body, especially for children.
- Lead can make it hard for children to learn, pay attention, and behave.
- Lead adds up in the body over time, so it is important to reduce lead exposure from all sources.

## Tips for making safer food choices:

### Cereal, snacks, & teething foods

Foods containing rice or rice flour can contain arsenic. Teething biscuits can contain lead, arsenic, and cadmium.

Instead, try these rice-free foods and healthy snacks: **oatmeal, quinoa, multi-grain cereal, fruit, yogurt, cheese, and eggs.**

For teething pain, try **frozen banana** slices, cold **peeled cucumber**, or a clean cold wet washcloth or spoon (watch for choking).



### Fruits & vegetables

Veggies that grow underground, like carrots and sweet potatoes, are a good source of nutrients, but can contain lead and cadmium.

**Mix it up!** Serve a variety of fruits and vegetables from every color of the rainbow during the week.



### Drinks

Juice, especially apple, pear, and grape, can contain lead and arsenic.

**Water** and **milk** are safer drink options.<sup>1</sup> You can also choose whole or pureed fruit.



## Where can I get more information?

- Childhood Lead Poisoning Prevention Branch – [cdph.ca.gov/Programs/CLPPB](https://cdph.ca.gov/Programs/CLPPB)
- Healthy Babies Bright Futures – [hbbf.org](https://hbbf.org)
- Healthy Children.Org – [HealthyChildren.org](https://HealthyChildren.org)
- Food and Drug Administration (FDA) Response to Questions About Levels of Toxic Elements in Baby Food, Following Congressional Report – [fda.gov/food/news-events-cfsan/cfsan-constituent-updates](https://fda.gov/food/news-events-cfsan/cfsan-constituent-updates)

<sup>1</sup> The American Academy of Pediatrics recommends breastmilk or formula for the first year of life.

