

Childhood Lead Poisoning Prevention Program

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Health and Wellness for all Arizonans

Background



- Every year in Arizona, **approximately 800 children** have elevated blood lead levels.
- Even at low levels, children's intelligence, hearing, and growth can be irreparably damaged.
- Less than 20% of children received a blood lead test at 12 months of age in 2014.
 - Children with lead poisoning could have been missed.

OVERVIEW OF LEAD POISONING

Lead Poisoning

- Lead poisoning is a condition caused by swallowing or breathing in lead dust
- The Centers for Disease Control and Prevention (CDC) has a new reference value of **5 $\mu\text{g}/\text{dL}$** (micrograms per deciliter)
 - Lowered in 2012

Greatest Risk for Lead Poisoning



- Children less than six years of age
 - Their bodies absorb lead more easily than adults
 - Natural tendency to put everything into their mouth
- An unborn baby
 - A pregnant woman can pass lead to her baby
 - Premature birth & reduced birth weight
 - Small head circumference
 - Brain & nervous system damage



Health Effects

- Most children will not have any symptoms; the only way to detect lead poisoning is through a blood test.
 - Slowed development
 - Interferes with growth
 - Lower intelligence
 - Learning difficulties
 - Behavior problems
 - More irritable and/or lack of concentration
 - Damage to the brain, liver, kidney



SOURCES OF LEAD

Lead-based Paint

- Peeling or chipping paint
 - Lead-based paint in pre-1978 homes
 - Remodeling pre-1978 homes



Soil, Dust, Water

- Soil
 - Naturally occurring in the soil
 - Paint chips from external paint
- Dust
 - Peeling, chipping, flaking paint
 - Take-home
 - Remodeling
- Water
 - Private wells
 - Test your well for lead
 - <http://www.azdhs.gov/lab/license/private-well-owner-resources.php>



Occupational

- Bringing it home from work
 - Items you store at home
 - On your clothes
- Occupations:
 - Car & radiator repair workshops
 - Battery manufacturing
 - Construction
 - Mining
 - Scrap yards
 - Plumbing
 - Painter



Hobbies

- Making ceramics, stained glass
- Hunting-*lead bullets*
- Reloading bullets
- Indoor shooting ranges
- Fishing- *lead fishing weights*
- Refinishing furniture



Lead-glazed Pottery

- Consuming food or liquids cooked or stored in the pots.
- Commonly used for cooking beans and storing liquids
- Pot exchange program



Clay pottery is brightly decorated and usually imported

Toys & Jewelry

- Hand-me-downs
- Brought from another county, Discount stores
- Costume, play jewelry



Spices & Foods

- Imported spices
 - Turmeric
 - combined with lead oxide (orange or red powder)
 - East Indian and Asian import stores
 - Brought into the country
- Imported candies from Mexico
 - Certain ingredients such as chili powder and tamarindo
 - Ink of some candy wrappers



Home Remedies

- Greta & Azarcon
 - Used by some Hispanic families for empacho or stomach aches
 - Powders that contain up to 95% lead
 - Mixed with olive oil and given by mouth



Makeup

- Imported
 - India, Middle East, Asia
 - Sindoor
 - Kohl
 - Kajal
 - Surma



Reducing Exposures from soil and dust: Controlling dust in the home



Take off coats, outerwear, and shoes when entering your home.



Wash your hands after coming inside to prevent accidentally ingesting dust.



Vacuum carpets and rugs with a HEPA filter.



Use a wet mop on hard surface floors.



Wet dust furniture and window sills.

Nutrition

**Foods high in
Vitamin C, Iron,
and Calcium**



ELEVATED BLOOD LEAD LEVEL FOLLOW-UP

Blood Lead Reporting

- Arizona Revised Statutes 36-173
 - Clinical laboratories are required to report all blood lead results (regardless of the level) to ADHS
 - Allows ADHS to identify children with elevated levels and maintain a registry
 - Providers are required to report blood lead levels for children $\geq 10\mu\text{g}/\text{dL}$

Overview of Follow-Up Activities

- Communicate with health care providers and families
- The blood lead level will initiate certain interventions
 - **(5-9 μ g/dL):** notification to provider, mailed letter and health education materials to families
 - **(10-20 μ g/dL):** In addition to above, phone interview to identify source
 - **(>20 μ g/dL):** In addition to above, if source is unidentified, team will go to home to do an investigation

Follow-up blood lead testing

- It is extremely important for children to receive follow up blood lead testing to ensure blood lead levels are decreasing
- There are different follow up schedules depending on the original blood lead level
 - (5-9 $\mu\text{g}/\text{dL}$): 6 months
 - (10-20 $\mu\text{g}/\text{dL}$): 2-3 months, or 1 month if source is unidentified
 - (20- 44 $\mu\text{g}/\text{dL}$): 2 weeks-1 month
 - (>45 $\mu\text{g}/\text{dL}$): ASAP within 1 week
- Chelation treatment is considered for blood lead levels >45 $\mu\text{g}/\text{dL}$

CASE-STUDIES

Hobby exposure



- Family with 10 children (ages 2-17) with elevated blood lead levels ranging from 10.2 $\mu\text{g}/\text{dL}$ to 43.9 $\mu\text{g}/\text{dL}$
- Father was making lead bullets in a shed in the backyard
- Team did an investigation of the home
 - Took soil, water, paint, and dust wipe samples
 - Elevated concentrations of lead were found
 - in the **soil** along the pathway from the shed to the front door (**tracking it in on shoes**)
 - and on **dust wipe samples** leading from outside the back door and throughout the downstairs of the house
 - **Conclusion: Lead from the bullets was being brought into the house on clothes, hands, and shoes**

Toy exposure



- 2yr old level escalated from a 18.4 $\mu\text{g}/\text{dL}$ to a 30.6 $\mu\text{g}/\text{dL}$ with in 6 months.
- The team went to the child's home in February 2015
- 11 samples were taken
- Positive lead check swabs for 2 toys (purchased at swap meet)
- We took toys and gave them to the lab for processing, 1 toy was found with high levels of lead
- Child recently retested at 6 $\mu\text{g}/\text{dL}$ in May 2015

TARGETED SCREENING RECOMMENDATIONS

Targeted Screening Plan

High Risk Zip Codes

- Identified 152 “High Risk Zip Codes” using census data and historic lead poisoned cases.

2014 High Risk Lead Poisoning Zip Codes

Apache County	
City	Zip Codes
Espe	85925
St. Johns	85936
Dennehotso, Teec Nos Pos	86535

Cochise County	
City	Zip Codes
Benson	85602
Bisbee	85603
Douglas	85607
Hereford	85615
Mc Neal	85617
San Simon, Portal	85632
Sierra Vista	85635
Tombstone	85638
Willcox, Ft Grant	85643

Coconino County	
City	Zip Code
Flagstaff	86004
Williams	86046

Gila County	
City	Zip Code
Globe	85001
Miami	85539

Graham County	
City	Zip Codes
Byles	85530
Pima	85543
Safford	85546
Thatcher	85552

Greenlee County	
City	Zip Codes
Clifton	85533
Duncan	85534
Morenci	85540

La Paz County	
City	Zip Codes
Parker	85344
Salome	85348

Maricopa County	
City	Zip Codes
Avenale	85323, 85392
Buckeye	85326
Chandler	85225, 85226
El Mirage	85335
Glendale	85301, 85302, 85303, 85304
Gila Bend	85337
Goodyear	85338
Guadalupe	85233
Laveen	85339
Mesa	85201, 85202, 85203, 85204, 85205, 85207, 85208, 85210, 85212, 85215
Pecoria	85345
Phoenix	85003, 85006, 85007, 85008, 85009, 85012, 85013, 85014, 85015, 85016, 85017, 85018, 85019, 85020, 85021, 85022, 85023, 85028, 85029, 85031, 85032, 85033, 85034, 85035, 85037, 85040, 85041, 85042, 85043, 85051, 85053
Scottsdale	85250, 85251, 85254, 85257
Surprise	85378
Tempe	85281, 85282, 85283
Tolleson	85353
Tonopah	85354
Youngtown	85363

Mohave County	
City	Zip Codes
Kingman	86401, 86409
Bullhead City	86442

Navajo County	
City	Zip Codes
Whitewater	85941
Holbrook	86025
Kayenta	86033
Winslow	86047

Pima County	
City	Zip Codes
Ajo	85321
Green Valley	85614
Sahuarita	85629
Sells, Pisinemo	85634
Tucson	85701, 85704, 85705, 85706, 85710, 85711, 85712, 85713, 85714, 85715, 85716, 85719, 85730, 85735, 85736, 85741, 85745, 85746, 85750, 85756, 85757

Pinal County	
City	Zip Codes
Apache Junction	85119, 85120
Casa Grande	85122, 85194
Coolidge	85128
Eloy	85131
Florence	85132
Kearny	85137
Maricopa	85138, 85139
Superior	85173
Oracle	85623
San Manuel	85631
Winkelman, Dudleyville	85192

Santa Cruz County	
City	Zip Codes
Nogales	85621
Tubac	85646
Rio Rico	85648

Yavapai County	
City	Zip Codes
Prescott	86301
Prescott Valley	86314
Ash Fork	86320
Flagstaff	86321
Cottonwood	86326

Yuma County	
City	Zip Codes
Roll	85347
San Luis	85349
Somerton	85350
Wellton	85356
Yuma	85364, 85365

Childhood Lead Poisoning Prevention Program
For more information visit our website at www.azhealth.gov/lead or call 602-364-3118.



Targeted Screening Recommendations

- **All children living in high risk zip codes**
 - should receive **a blood lead test** at the age of 12 months and again at 24 months.
- **All children NOT living in high risk zip codes**
 - should complete a high risk questionnaire at 12 months and again at 24 months.
 - *If the child is identified as high risk from the questionnaire, then the child should receive **a blood lead test**.*

NEW HEALTH EDUCATION MATERIALS



Health and Wellness for all Arizonans

New Health Education Materials

General Handout

- General information about sources of lead, cleaning, and nutrition
 - For families
 - Front side-English
 - Back side-Spanish
- Printing flyer this summer

Childhood LEAD Poisoning
Children can get LEAD poisoning by breathing in or swallowing dust that contains lead.

Arizona Department of Health Services
azhcah.gov/lead

Even at low levels, LEAD can cause irreversible damage to hearing, growth, and development.

For more information or any questions contact the Office of Environmental Health & Childhood Lead Poisoning Prevention Program @ 602-364-3119.

Sources of LEAD

Home

Lead can be in paint in old homes built before 1978

- Chipped paint
- Dirt
- Old furniture and toys
- Play or costume jewelry
- Pewter/Crystal

Imported Goods

Items brought back from other countries may contain LEAD

- Glazed pottery
- Asian, Hispanic, Indian spices
- Mexican candy (tamarindo and chili)

Jobs

Working with LEAD increases your risk of bringing LEAD dust into your home through your clothes, shoes, or skin.

Car repair, mining, construction, plumbing

- Change work clothes before entering home
- Wash work clothes separately

Hobbies

Certain hobbies increase your risk of coming in contact with LEAD

- Hunting (lead bullets)
- Fishing (lead sinkers)

Travel

Traveling outside the U.S. may increase your risk of coming in contact with LEAD-based items and bringing them back to your home.

- Be careful what you bring back from your trips or vacation

Home Remedies

Using home remedies can be dangerous

- Traditional and folk remedies
- Greta, Azarcan, Pay-oo-ah

Beauty Products

Some beauty products contain LEAD

- Sindoor, Khol, Kajal, Surma

Cleaning

Keep LEAD dirt and dust out of your home with these helpful tips.

- Wash Hands
- Keep shoes out
- Mop and wet wipe
- Wash Toys
- HEPA filter

Nutrition

These foods can help lower your child's lead level.

- Vitamin C: Potatoes, Tomatoes, Strawberries, Oranges
- Calcium: Cheese, Milk, Peas, Steak, Chicken, Fish, Eggs
- Iron: [Foods with iron]

Rev 4/2015

New Health Education Materials

Home Checklist

- Checklist to identify potential lead sources in the home
 - For families
 - *goal is to look for lead sources and eliminate them before baby/child is exposed
- Currently only available in English
- Electronic version available



Are you expecting a child or have a young toddler at home?
Is your home LEAD safe?

Lead can be harmful when it gets into the body, especially for young children and pregnant women.

Lead poisoning can cause permanent developmental, hearing, behavioral, and learning problems.

We can be exposed to lead through a wide range of sources.

Young children are most at risk because they are still developing, put everything in their mouths, and absorb lead easily.

Lead-based Paint	Hobbies	Soil	Toys & Jewelry	Pewter & Crystal
Gleazed Pottery	Spices & Candy	Home Remedies	Work-related	Make-up

Complete this checklist to find sources of lead in your home.

Was your home built before 1978?
If yes, then it is likely to contain lead-based paint.

Lead-based paint is hazardous when it peels, flakes, or chips because it becomes a hazardous fine dust that mixes with household dust.

The Environmental Protection Agency (EPA) regulates laws related to lead-based paint. The EPA trains and certifies contractors to use lead-safe work practices to protect your family from lead. Visit the EPA website to find an EPA-certified professional in Arizona. <http://tinyurl.com/AZEPALead>

Complete these actions to prevent exposure to lead-based paint.

- Have an EPA-certified professional check home for lead.
- Have an EPA-certified professional repair peeling, chipping, or flaking lead-based paint.
Sanding or scraping lead-based paint will make hazardous dust.
- Have an EPA-certified professional perform necessary renovations on home.
- Cover bare lead-contaminated soil with vegetation or pavement.
- Establish a cleaning routine.

Cleaning

- Wet-wipe surfaces and mop hard floors often. No sweeping or dry dusting.
- Clean carpet and rugs with a vacuum with a HEPA filter.
- Keep shoes outside or in the garage.
- Wash children's hands, toys, bottles, and pacifiers often.

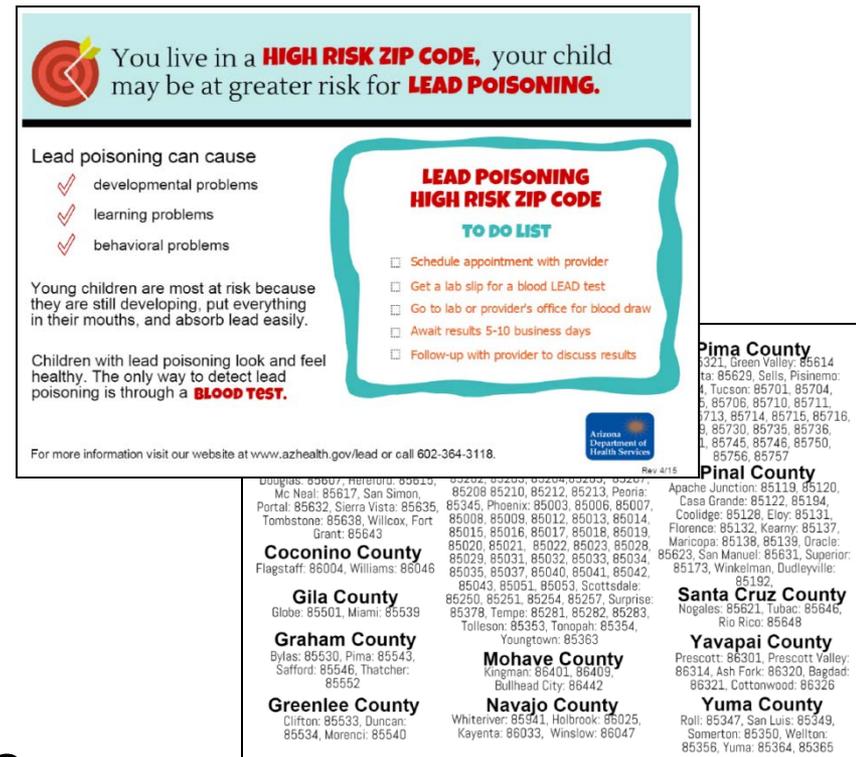
For more information visit our website at www.azhealth.gov/lead or call 602-364-3118.

Rev. 4/18

New Health Education Materials

Targeted Zip Code Flyer

- ½ page, front and back
- Information about lead poisoning health effects, high risk zip codes
- “To do” to complete for a blood lead test
- Currently only available in English
- Electronic version available



The flyer is titled "Targeted Zip Code Flyer" and is designed to inform residents of high-risk zip codes about lead poisoning. It features a target icon with a red arrow in the center, symbolizing a high-risk area. The main message is: "You live in a **HIGH RISK ZIP CODE**, your child may be at greater risk for **LEAD POISONING**."

Lead poisoning can cause

- ✓ developmental problems
- ✓ learning problems
- ✓ behavioral problems

Young children are most at risk because they are still developing, put everything in their mouths, and absorb lead easily.

Children with lead poisoning look and feel healthy. The only way to detect lead poisoning is through a **BLOOD TEST**.

LEAD POISONING HIGH RISK ZIP CODE TO DO LIST

- Schedule appointment with provider
- Get a lab slip for a blood LEAD test
- Go to lab or provider's office for blood draw
- Await results 5-10 business days
- Follow-up with provider to discuss results

For more information visit our website at www.azhealth.gov/lead or call 602-364-3118.

Arizona Department of Health Services

Rev 4/16

Pima County
321, Green Valley, 85614
4, Tucson, 85701, 85704,
5, 85708, 85710, 85711,
7, 85713, 85714, 85716, 85718,
9, 85730, 85735, 85736,
1, 85745, 85746, 85750,
85756, 85757

Pinal County
Apache Junction, 85119, 85120,
Casa Grande, 85122, 85194,
Coolidge, 85128, Eloy, 85131,
Florence, 85132, Kearny, 85137,
Maricopa, 85138, 85139, Oracle,
85623, San Manuel, 85631, Superior,
85173, Winkelman, Dudleyville,
85192

Santa Cruz County
Nogales, 85621, Tubac, 85646,
Rio Rico, 85648

Yavapai County
Prescott, 86301, Prescott Valley,
86314, Ash Fork, 86320, Bagdad,
86321, Cottonwood, 86326

Yuma County
Roll, 85347, San Luis, 85349,
Somerton, 85350, Wellton,
85356, Yuma, 85364, 85365

Coconino County
Flagstaff, 86004, Williams, 86046

Gila County
Globe, 85501, Miami, 85539

Graham County
Bylas, 85530, Pima, 85543,
Safford, 85546, Thatcher,
85552

Greenlee County
Clifton, 85533, Duncan,
85534, Morenci, 85540

Mohave County
Kingman, 86401, 86409,
Bullhead City, 86442

Navajo County
Whiteriver, 86341, Holbrook, 86025,
Kayenta, 86033, Winslow, 86047

**Douglas, 85607, Herdona, 86010,
Mc Neal, 85617, San Simon,
Portal, 85632, Sierra Vista, 85635,
Tombstone, 85638, Wilcox, Fort
Grant, 85643**

**85202, 85203, 85204, 85207, 85209,
85208, 85210, 85212, 85213, Peoria,
85345, Phoenix, 85003, 85006, 85007,
85008, 85009, 85012, 85013, 85014,
85016, 85018, 85017, 85018, 85019,
85020, 85021, 85022, 85023, 85028,
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85250, 85251, 85254, 85257, Surprise,
85378, Tempe, 85281, 85282, 85283,
Tolleson, 85363, Tonopah, 85354,
Youngtown, 85363**



Contact Information

- Webpage: www.Azdhs.gov/lead
- Melissa Tegarden- Health Educator
 - 602-364-2965 or 480-532-4126
 - Melissa.tegarden@azdhs.gov
- Amber Asburry- Project Leader
 - 602-364-3884
 - Amber.Asburry@azdhs.gov
- Stephen Grieco-Shapiro-Epidemiologist
 - 602-364-4676
 - Stephen.Grieco-Shapiro@azdhs.gov