Montana Childhood Lead Poisoning Screening Plan and Medical Case Management Recommendations

A state resource for healthcare providers on screening children and youth for lead poisoning and recommended actions based on blood lead levels

Version 1.0, September 2025

DEPARTMENT OF PUBLIC HEALTH & HUMAN SERVICES

Montana Childhood Lead Poisoning Prevention Program
Epidemiology and Scientific Support Bureau
Toxicology and Environmental Public Health Section
Phone: 406-444-0057
Confidential Fax: 800-616-7460

TABLE OF CONTENTS

Acronyms and Abbreviations

AAP	American Academy of Pediatrics
ARM	Administrative Rules of Montana
BLL	Blood lead level
BLRV	Blood lead reference value (3.5 µg/dL)
CDC	U.S. Centers for Disease Control and Prevention
CMS	U.S. Centers for Medicare and Medicaid Services
CPSC	U.S. Consumer Product Safety Commission
EPA	U.S. Environmental Protection Agency
EPSDT	Early and Periodic Screening, Diagnostic and Treatment
FDA	U.S. Food and Drug Administration
HUD	U.S. Department of Housing and Urban Development
µg/dL	Micrograms per deciliter
MT CLPPP	Montana Childhood Lead Poisoning Prevention Program
MT DPHHS	Montana Department of Public Health and Human Services
PEHSU	Pediatric Environmental Health Specialty Units
USDA	U.S. Department of Agriculture
WIC	Special Supplemental Nutrition Program for Women, Infants and Children

Introduction

LEAD IN MONTANA

Lead is a versatile and widely used metal of historical importance in Montana. While some uses of lead have been banned due to serious health effects from exposure, lead particles from historical use persist in the environment and lead continues to be used in some products, occupations and hobbies, leading to multiple pathways for childhood lead exposure.

Montana has a rich history of natural resource and energy development, which began with Montana's gold rush during the 1860s and continues through present day. Byproducts of mining, smelting and refining can contain lead and other harmful substances. As lead never breaks down, uncaptured lead particles from historical and current industrial activities persist in the environment, contaminating areas where Montanans live, farm and recreate. Investigation and cleanup of lead contamination is presently occurring at 12 Superfund sites in Montana with ongoing risk of human exposure to lead from nine of those sites (U.S. Environmental Protection Agency, 2025). Over 53,000 Montanans who reside near those areas are potentially exposed to lead (U.S. Census Bureau, 2023). This includes populated communities like Butte, Anaconda, East Helena and Black Eagle, which are legacy lead mining or smelting sites.

Historically, lead was commonly used in U.S. consumer products found in and around homes such as paint, plumbing materials and gasoline. With growing concerns about lead's toxicity, the use of lead in many of these products was phased out or significantly limited beginning in the 1970s. However, the risk of childhood lead exposure from the former use of these products remains in many settings, as discussed below:

- Lead-based Paint Homes, schools and daycares built before 1978 are likely to contain lead-based paint, which creates lead dust as the paint is damaged or deteriorates and during renovation and repair activities. Lead-based paint used in buildings built before 1960 contains higher concentrations of lead. It is estimated that half (49.8%) of Montana's housing was built before 1980 and a quarter (25.7%) was built before 1960 (U.S. Census Bureau, 2023). Children who are crawling, engaging in oral exploratory behavior or have pica are at high risk of ingesting lead dust and paint chips from these environments.

Image generated by Canva AI using the prompt "Teething baby at window with peeling paint."

- Lead in Drinking Water Homes, schools and daycares built before 1986 are more likely to have lead in pipes, faucets and plumbing fixtures than newer buildings. As plumbing materials with lead corrode, they can leach lead into drinking water. Additionally, some Montana communities may have lead service lines that connect the public water main to residences and other buildings. The amount of lead service lines in Montana is not fully known (Montana Department of Commerce, 2024).

- Leaded Gasoline Lead exhaust from the historical use of leaded gasoline in on-road vehicles persists in the environment near where vehicles were parked or driven. Leaded gasoline is still permitted for some aircraft, farm equipment and marine engines, posing ongoing exposure risks.
- Lead in Soil Soil can be contaminated with lead from deteriorating lead-based paint, leaded gasoline exhaust, residual agricultural pesticides containing lead and other environmental sources. Children can be exposed to lead-contaminated soil when playing in bare soil, handling toys that have been in soil or when ingesting or breathing in dust from soil during outdoor activities like riding dirt bikes or all-terrain vehicles. Lead-contaminated soil can be tracked indoors on shoes, pets, persons and their belongings and from the wheels of strollers, ride-on toys and mobility aids.

While significant strides have been made to remove lead from U.S. consumer products, recalls due to lead contamination are ongoing and sometimes involve products specifically made for children such as toys, sippy cups, clothing, children's jewelry and baby food. Imported goods like food, spices, cosmetics and medicines can also be contaminated with lead as lead-related standards and enforcement differ among countries.

Image generated by Canva AI using the prompt "Parent in dirty coveralls interacting with toddler when arriving home from work."

Lead is still used in some U.S. applications. Lead-acid batteries, solder, ammunition, fishing weights, cable sheathing, roof flashing, stained glass and ceramic glazes are a few examples of products that may contain lead. Montanans can be exposed to lead through occupations or hobbies that involve lead or generate lead dust or fumes. Children can be exposed to lead if they engage in these activities, access areas where these activities are carried out, such as workshops or garages, or if lead dust is tracked by workers or hobbyists into vehicles and homes on their person or belongings.

HEALTH EFFECTS OF LEAD EXPOSURE IN CHILDREN

The most common routes for lead exposure among children are ingestion and inhalation. Lead is absorbed into the bloodstream and deposited in the skeleton and soft tissues like the brain, kidneys, liver, and heart, where it accumulates over time, or is eliminated through urinary and fecal excretion. Lead can also cross the placenta and accumulate in a fetus. Blood lead levels represent only a small fraction of total lead body burden. There is no known safe blood lead level in children.

Children under 6 years of age are more vulnerable to the harmful health effects of lead than older children and adults because their gastrointestinal system absorbs more lead and because lead directly enters the nervous system, acting as a neurotoxicant to their developing brain. Childhood lead exposure can lead to cognitive impairment, decreased IQ, behavioral issues, hearing and speech problems, developmental delays, anemia and slowed growth. The harmful health effects of lead exposure can be permanent, even at low blood lead levels.

No safe blood lead level in children has been identified. Even low levels of lead can have harmful effects on a child's development and learning and some effects of lead exposure can be permanent. Early identification of lead poisoning through screening and blood lead testing is key to reducing long-term effects.

Children who are exposed to lead may have no visible signs or symptoms. Early identification of lead poisoning through routine screening and testing is crucial to minimizing the long-term health effects. The best way to prevent and treat lead exposure is to identify and remove all sources of lead where a child lives, learns and plays.

ABOUT THE SCREENING PLAN

The Montana Childhood Lead Poisoning Screening Plan and Medical Case Management Guide is a state resource for healthcare providers on screening and testing children and youth for lead poisoning and recommended actions based upon blood lead level (BLL) using the U.S. Centers for Disease Control and Prevention (CDC) blood lead reference value (BLRV) of 3.5 micrograms of lead per deciliter of blood (µg/dL) to identify children with BLLs that are higher than most children's levels. The plan was developed by the Montana Department of Public Health and Human Services (MT DPHHS) with input from clinical, children's health and toxicology experts including the state epidemiologist, the state toxicologist and the MT DPHHS public health physician, who is board certified in public health and general preventive medicine. Input was also provided from the state's Childhood Lead Poisoning Prevention Program Advisory Committee, whose members include Montanans from diverse fields in environmental protection, healthcare, American Indian affairs, public health, social services and academia.

The plan was developed to be a single resource for healthcare providers that incorporates published guidance for the routine screening, testing and medical management of blood lead in children and youth from:

- CDC Childhood Lead Poisoning Prevention Program
- CDC Immigrant and Refugee Health
- The American Academy of Pediatrics (AAP) Lead Exposure Policy
- The Bright Futures/AAP Periodicity Schedule
- The U.S. Centers for Medicare and Medicaid Services (CMS) Early and Periodic Screening, Diagnostic and Treatment (EPSDT) Services

Montana uses the CDC blood lead reference value of 3.5 µg/dL as the level at which a child should receive follow-up medical care and public health case management services.

Image generated by Canva AI using the prompt "Preparing to collect blood sample from young child at health clinic."

HOW TO USE THE SCREENING PLAN

As a child with lead poisoning may not have visible signs or symptoms, all children who are at risk for lead exposure should have their blood tested for lead. The Childhood Lead Risk Questionnaire (p.14) is a lead risk assessment tool for healthcare providers to identify children at risk of lead exposure who need a blood lead test. The AAP/Bright Futures periodicity schedule recommends that healthcare providers administer the lead risk assessment tool during well-child visits at ages 6, 9, 12, 18 and 24 months, then at 3, 4, 5 and 6 years of age unless a blood lead test is already being performed during that visit. The risk assessment can be administered to older children, as well. A blood lead test is recommended if one or more responses to the questionnaire are "Yes/Unsure."

Some children are more likely to be exposed to lead than others, therefore, the screening plan recommends targeted blood lead testing at 12 and 24 months of age for Montana children who meet any of the following criteria:

INSURANCE

For children covered by a private insurance company, check with the insurer as coverage and reimbursement rates for blood lead testing vary by company and policy.

For patients with low access to healthcare due to insurance or the ability to pay for services, providers should check with their facility or local or Tribal public health department about assistance programs with a sliding fee schedule.

The Healthy Montana Kids Medicaid Plan covers the cost of blood lead screening and diagnostic tests for enrolled children and youth. Providers should refer to the Medicaid General Information for Providers referenced in Appendix C for reimbursement information.

- Participates in Medicaid, Healthy Montana Kids, Special Supplemental Nutrition Program for Women, Infants and Children (WIC), Head Start, Early Head Start or Foster Care or is an international adoptee.
- Resides in a zip code targeted for child blood lead testing based upon the age of housing stock or the presence of a Superfund site contaminated with lead with ongoing risk of human exposure. The list of targeted zip codes in Montana can be found in Targeted Zip Codes for Child Blood Lead Testing (pp. 9-13).

The screening plan incorporates Medicaid's age-specific requirements for blood lead testing of enrolled children, the CDC's blood lead screening guidance for children and youth who are refugees or international adoptees who recently arrived in the United States and the Bright Futures/AAP periodicity schedule for lead screening.

The screening plan is visually presented in the Childhood Lead Poisoning Screening Plan Flowchart (p. 8), which walks healthcare providers through a brief series of "yes" or "no" questions about a patient to identify the recommended lead screening activity that should be conducted during the age-specific well-child visit.

Public Health Reporting of Blood Lead Tests (p. 15) offers an overview of blood lead reporting requirements per the Administrative Rules of Montana (ARM).

Finally, Medical Case Management Recommendations (pp. 16-17) recommends actions for medically managing a child or youth with blood lead based upon the blood sample type and BLL.

THE MONTANA CHILDHOOD LEAD POISONING PREVENTION PROGRAM

The mission of the Montana Childhood Lead Poisoning Prevention Program (MT CLPPP) is to eliminate and prevent childhood lead poisoning through the promotion of blood lead testing and monitoring and strengthened linkages to recommended services for exposed children and their families and caregivers. MT CLPPP is funded through a 5-year cooperative agreement with the CDC that began in 2021. For more information on MT CLPPP program activities, visit our website at https://dphhs.mt.gov/publichealth/Epidemiology/TEPH/CLPPP/index.

Childhood Lead Poisoning Screening Plan Flowchart

State guidance for healthcare providers on screening children and youth for lead poisoning[a]

START HERE

IMPORTANT: Immediately perform a blood lead test if there is clinical suspicion of lead poisoning or when a patient has a known exposure to lead.

Newly arrived[b] refugee[c] or international adoptee[d] in the United States

NO

Participates in at least one of the following programs or is an international adoptee[d]:

- Medicaid or Healthy Montana Kids
- WIC
- Head Start or Early Head Start
- Foster Care

NO

Primary residence is in a targeted zip code for child blood lead testing

See page 13 for list of targeted zip codes in Montana

NO

Administer risk assessment

Complete **Childhood Lead Risk Questionnaire** at ages 6, 9, 12, 18 and 24 months, then at 3, 4, 5 and 6 years of age. Perform blood lead test if any "yes/unsure" response. Consider administering risk assessment to older children.[g]

YES

Perform a venous or capillary blood lead test[e,f]

Immediately test anyone 16 years of age and younger and all pregnant or lactating women and girls. Test youth older than 16 years of age if there is a high index of suspicion or clinical signs/symptoms.

Perform follow-up testing 3-6 months after initial testing as follows:

- All refugee children 6 years of age and younger regardless of initial test result.
- International adoptee at any age or refugee older than 6 years of age who had a BLL at or above 3.5 µg/dL.
- Refugee older than 6 years of age who has a risk factor (e.g., sibling with a BLL at or above 3.5 µg/dL, environmental exposure risk factors) regardless of initial test result.

YES

Perform a venous or capillary blood lead test[e,f]

Perform testing once at 12 months and once at 24 months of age. Perform one test by 6 years of age if not previously tested.

Administer risk assessment

Complete **Childhood Lead Risk Questionnaire** at ages 6, 9 and 18 months, then at 3, 4, 5 and 6 years of age. Perform blood lead test if any "yes/unsure" response. Consider administering risk assessment to older children.[g]

YES

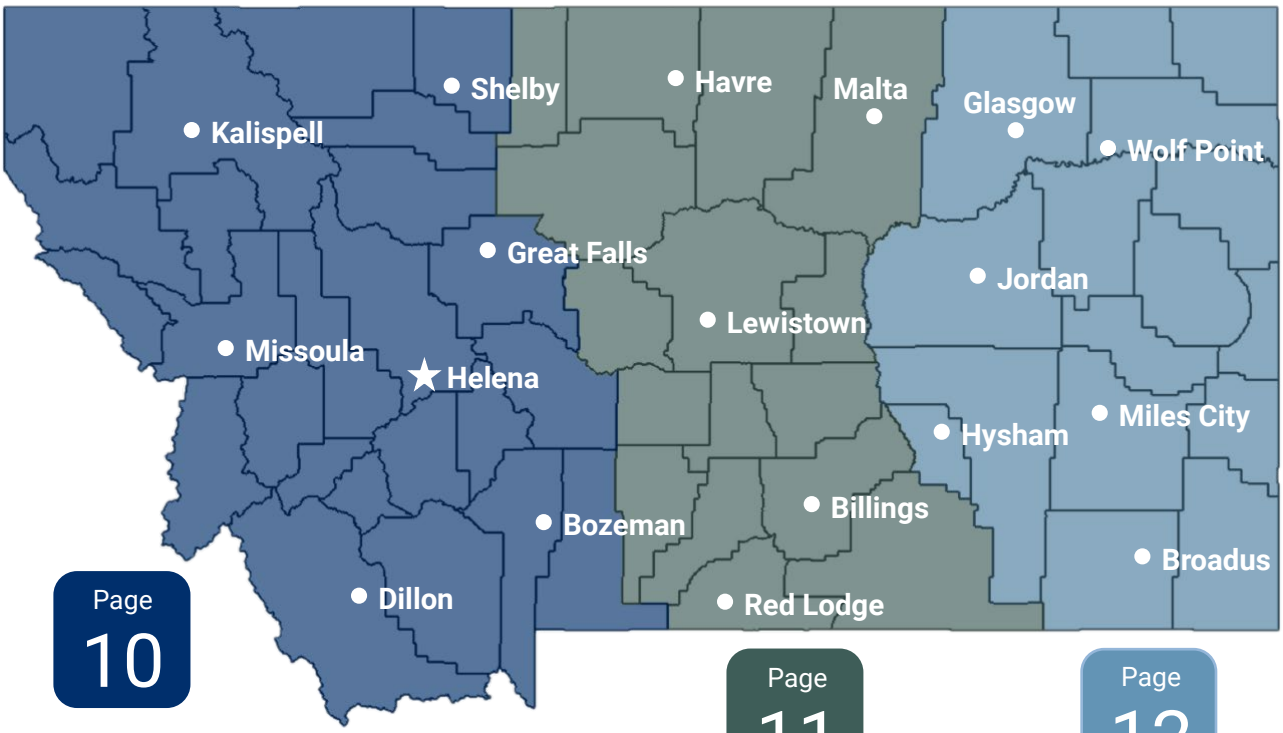
[a]The flowchart follows screening guidance by the CDC, AAP/Bright Futures Periodicity Schedule and the CMS EPSDT benefit. [b]Within 90 days of arrival in the United States. [c]Guidance from: U.S. Centers for Disease Control and Prevention. (2024). Immigrant and Refugee Health. Retrieved April 9, 2025, from https://www.cdc.gov/ immigrant-refugee-health/hcp/domestic-guidance/lead.html. [d]The CDC recommends international adoptees receive a blood lead test upon arrival in the United States and again at 12 and 24 months of age. [e]Capillary blood lead testing is only appropriate in persons under 16 years of age. All blood lead tests in persons aged 16 years and older should be from a venous sample. [f]See **Medical Case Management Recommendations (pp. 16-17)** for confirmatory and follow-up testing schedules and recommended clinical follow-up of children with BLLs at or above 3.5 µg/dL. [g]Check with the insurer. Coverage for blood lead testing varies.

Targeted Zip Codes for Child Blood Lead Testing

ABOUT TARGETED ZIP CODES

Targeted zip codes for child blood lead testing represent geographic areas of Montana where at least 25% of the total residential housing within that zip code was built before 1960 (U.S. Census Bureau, 2023), when housing was more likely to contain lead-based paint and paint contained higher levels of lead, or areas where there is a Superfund National Priorities List site that is contaminated with lead and there is presently risk of human exposure to lead from that site (EPA, 2025).

Universal blood lead testing is recommended for all children who reside in targeted zip codes at 12 months and 24 months of age, or at least once by 6 years of age if not previously tested, due to the risk of lead poisoning from exposure to excess lead levels in the environment. Healthcare providers should continue to administer the child lead risk questionnaire during well-child visits at ages 6, 9 and 18 months, then at 3, 4, 5 and 6 years of age.



USING ZIP CODES

- Use the zip code where the child primarily resides. A post office box zip code may be used if the child's physical address zip code is unknown.
- Only targeted zip codes in Montana are listed. If the child's zip code is not listed, answer "no" to "Primary residence is in a targeted zip code" when navigating through the Childhood Lead Poisoning Screening Plan Flowchart (p. 8).
- Targeted zip codes are grouped by Montana county. Refer to the map above to find the page number where targeted zip code data for a county can be found. If a county is not listed, there are no targeted zip codes for child blood lead testing within that county.
- A list of all targeted zip codes in Montana in numerical order can be found on page 13.

Targeted Zip Codes for Child Blood Lead Testing

Western Montana

Beaverhead
59724
59736
59739
59761

Broadwater
59647

Cascade
59401
59405
59414
59443
59463
59465
59472
59477
59480
59483
59487

Deer Lodge
59711
59756

Gallatin
59715
59760

Glacier
59427
59434

Granite
59832
59837
59858

Jefferson
59631
59632
59638
59759

Lake
59863
59865

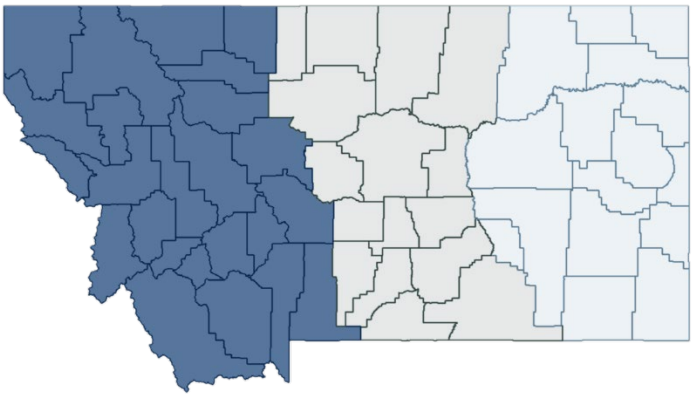
Lewis and Clark
59410
59601
59633
59635
59636

Lincoln
59923
59933

Madison
59710
59735
59747
59754
59755

Meagher
59053
59642
59645

Mineral
59867
59872



Missoula
59801
59802
59851

Park
59018
59047
59082
59086

Pondera
59416
59425
59432
59486

Powell
59713
59722
59843
59854

Ravalli
59840

Sanders
59845
59848
59853
59856
59873

Silver Bow
59701
59748
59750

Teton
59419
59422
59433
59436
59467
59468

Toole
59444
59454
59474
59482
59484

Targeted Zip Codes for Child Blood Lead Testing

Central Montana

Big Horn
59025
59031
59034
59050
59089

Blaine
59523
59526
59529
59535
59542
59547

Carbon
59007
59014
59026
59029
59068
59071

Chouteau
59420
59440
59442
59446
59450
59460
59520

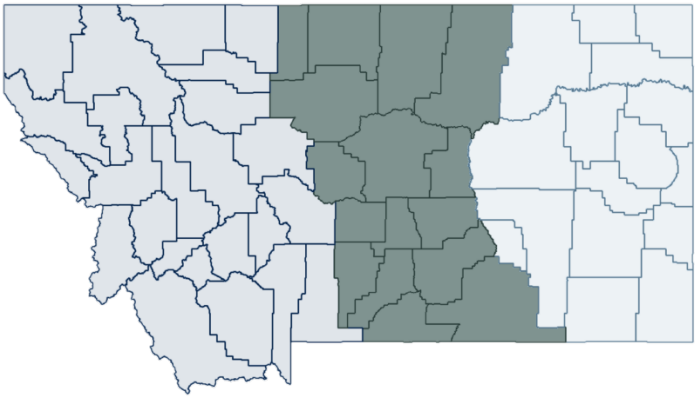
Fergus
59032
59418
59424
59430
59451
59457
59464
59471
59489

Golden Valley
59046
59074

Hill
59501
59525
59528
59530
59532
59540

Judith Basin
59447
59452
59462
59469
59479

Liberty
59461
59522
59531
59545



Musselshell
59059
59072

Petroleum
59087

Phillips
59261
59537
59538
59544

Stillwater
59001
59028
59063
59067
59069

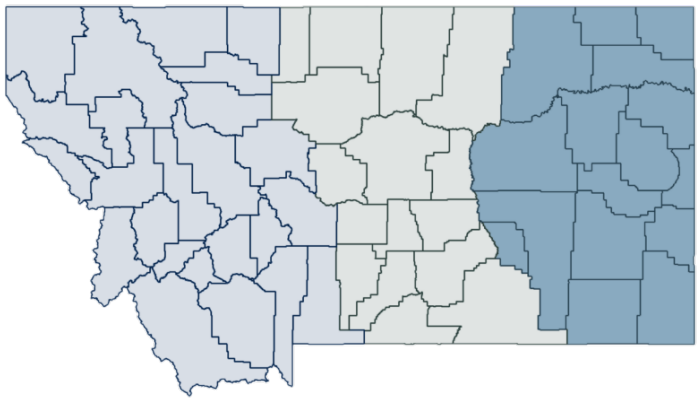
Sweet Grass
59011
59055

Wheatland
59036
59078
59453

Yellowstone
59006
59024
59044
59064
59101
59102

Targeted Zip Codes for Child Blood Lead Testing

Eastern Montana



Carter
59311
59316
59319
59324

Custer
59301
59336
59338
59351

Daniels
59222
59253
59263
59276

Dawson
59259
59315
59330
59339

Fallon
59313
59344

Garfield
59337

McCone
59214
59215
59274

Powder River
59062
59343
59345

Prairie
59326
59349

Richland
59221
59262

Roosevelt
59201
59218
59226
59255

Rosebud
59012
59312
59327
59333

Sheridan
59219
59242
59247
59252
59254
59256
59257
59258
59275

Treasure
59038

Valley
59223
59225
59230
59240
59241
59244
59248
59250
59260
59273

Wibaux
59353

Targeted Zip Codes for Child Blood Lead Testing

Montana Statewide

Listed in numerical order

59001
59006
59007
59011
59012
59014
59018
59024
59025
59026
59028
59029
59031
59032
59034
59036
59038
59044
59046
59047
59050
59053
59055
59059
59062
59063
59064
59067
59068
59069
59071
59072
59074
59078
59082
59086
59087
59089
59101
59102
59201
59214
59215
59218
59219
59221
59222
59223
59225
59226
59230
59240
59241
59242
59244
59247
59248
59250
59252
59253
59254
59255
59256
59257
59258
59259
59260
59261
59262
59263
59273
59274
59275
59276
59301
59311
59312
59313
59315
59316
59319
59324
59326
59327
59330
59333
59336
59337
59338
59339
59343
59344
59345
59349
59351
59353
59401
59405
59410
59414
59416
59418
59419
59420
59422
59424
59425
59427
59430
59432
59433
59434
59436
59440
59442
59443
59444
59446
59447
59450
59451
59452
59453
59454
59457
59460
59461
59462
59463
59464
59465
59467
59468
59469
59471
59472
59474
59477
59479
59480
59482
59483
59484
59486
59487
59489
59501
59520
59522
59523
59525
59526
59528
59529
59530
59531
59532
59535
59537
59538
59540
59542
59544
59545
59547
59601
59631
59632
59633
59635
59636
59638
59642
59645
59647
59701
59710
59711
59713
59715
59722
59724
59735
59736
59739
59747
59748
59750
59754
59755
59756
59759
59760
59761
59801
59802
59832
59837
59840
59843
59845
59848
59851
59853
59854
59856
59858
59863
59865
59867
59872
59873
59923
59933

Childhood Lead Risk Questionnaire

A lead risk assessment tool for healthcare providers to identify children who need a blood lead test

INSTRUCTIONS: Administer this lead risk assessment during well-child visits at ages 6, 9, 12, 18, and 24 months, then at 3, 4, 5, and 6 years of age unless a blood lead test is already being performed. This lead risk assessment tool does not replace blood lead testing requirements for Medicaid-enrolled children.

A capillary or venous blood lead test is recommended if one or more responses are "Yes/Unsure." If responses to all of the questions are "No," re-evaluate at the next age referenced above or more often if deemed necessary.

Questions to ask child's parent or caregiver	Yes/Unsure	No
1. Is your child a refugee or international adoptee who arrived in the United States in the past 90 days?	**TEST**[a]	☐
2. Does your child participate in Medicaid, Healthy Montana Kids, WIC, Head Start, Early Head Start or Foster Care or are they an international adoptee who has been in the United States for more than 90 days?	**TARGETED TESTING**[b]	
3. Does your child reside in a targeted zip code for child blood lead testing (refer to page 13 for list of targeted zip codes in Montana)?	**TARGETED TESTING**[b]	
4. Does your child live in or often visit a home, childcare center or other building built before 1960?		
5. Does your child live in or often visit a home, childcare center or other building built before 1978 that has been remodeled or renovated in the past six months or has peeling or chipping paint?		
6. Are you aware of any high levels of lead detected in a water test (5 ppb or higher) from where your child lives or often visits, including a childcare center or school?		
7. Are you aware of any family member, household member, or frequent playmate of your child who had high levels of lead in their blood (≥ 3.5 µg/dL) or lead poisoning within the past 6 months?		
8. Does your child live with or frequently spend time with someone whose job or hobby can expose them to lead?		

Examples:

Abatement	*Fishing weights or "sinkers"*	*Scrap Metal*
Antique furniture refinishing	*Mining, smelting, or refining*	*Shooting or ammunition*
Auto or boat repair	*Painting older buildings*	*Soldering*
Construction & renovation	*Pipefitting or plumbing*	*Stained glass*
Demolition	*Pottery making or glazing*	*Welding*

9. Does your child chew on painted surfaces or eat non-food items such as paint chips, dirt or clay?		
10. Does your child eat imported spices or candy (like tamarind, plum, turmeric, or chili) or eat or drink from serveware or cookware that has been imported or hand-carried to the United States?		
11. Do you have any concerns that your child may have been exposed to lead that we haven't talked about?		

[a]Refer to page 8 for recommended blood lead testing of recently arrived refugees and international adoptees. [b]Children who meet any targeted blood lead testing criteria should be tested at 12 months and 24 months of age. Test by 6 years of age if not previously tested. Ask lead risk assessment questions 4-11 at other well-child visits.

Additional healthcare provider considerations for testing	Yes	No
Are you conducting a diagnostic work-up for any of the following: • Developmental problems such as growth, speech or language delays? • Neurodevelopmental disabilities or conditions such as autism, attention-deficit/hyperactivity disorder, or learning delays? • Signs/symptoms consistent with lead poisoning such as irritability, headaches, vomiting, seizures or other neurological symptoms, anemia, loss of appetite, abdominal pain and cramping, or constipation?	☐	☐
Does the child have a known or suspected exposure to lead? *(e.g., swallowed item suspected to contain lead; consumed food product recalled due to lead contamination)*	**IMMEDIATELY TEST**	☐

Public Health Reporting of Blood Lead Tests

Overview of the blood lead reporting requirements per the Administrative Rules of Montana

BLOOD LEAD TESTS THAT ARE REPORTABLE TO PUBLIC HEALTH

Blood lead is a condition of public health importance in Montana. Per ARM 37.114.203, the following blood lead test results must be reported to the local or Tribal health department:

- Lead levels in a capillary blood specimen at or above the BLRV of 3.5 µg/dL in a person less than 16 years of age
- All venous blood lead test results, regardless of BLL and patient age

Local and Tribal health department contact information can be found at https://dphhs.mt.gov/publichealth/EHFS/countytribalhealthdepts.

Reportable status of blood lead tests in Montana based upon specimen type, BLL and patient age

Blood specimen type	BLL	Patient age	Required to be reported to public health
Capillary	< 3.5 µg/dL	Less than 16 years of age[a]	No
Capillary	≥ 3.5 µg/dL	Less than 16 years of age[a]	Yes
Venous	Any blood lead level	Any age	Yes

[a]Capillary blood lead tests are only appropriate in persons under 16 years of age. All blood lead tests in persons aged 16 years and older should be from a venous sample. Venous blood lead tests are appropriate for all ages.

WHO REPORTS BLOOD LEAD TESTS TO PUBLIC HEALTH

Healthcare providers, laboratory professionals and administrators of healthcare facilities or laboratories are examples of persons who must immediately report cases of blood lead that meet reporting requirements to the local or Tribal health department. Some laboratories electronically report blood lead test results to satisfy this requirement. See ARM 37.114.201 for a full list of reporters and exceptions.

WHAT TO INCLUDE IN REPORTS TO PUBLIC HEALTH

Reports of cases of blood lead to the local or Tribal health department must include, if available:

- Patient's first and last name and middle initial
- Patient's date of birth
- Patient's physical address including city, state and zip code
- Gender, race and ethnicity of the patient
- Name and address of the patient's physician
- Name of the reporter or another person that the local health officer can contact for more information related to case management or investigation of the case
- Blood lead test results including collection date, BLL, specimen type, laboratory and ordering physician

See ARM 37.114.205 for more information on report contents.

Medical Case Management Recommendations

Recommended actions for healthcare providers based upon blood lead levels in children and youth

This guidance is from the CDC's recommended actions for healthcare providers based upon a child or youth's initial capillary or confirmatory venous BLL (2025) and incorporates the public health reporting requirements in Montana.

INITIAL CAPILLARY BLOOD LEAD LEVEL

Medical case management recommendations based upon capillary BLL in children and youth

Below 3.5 µg/dL

- Provide education on common sources of lead exposure and how to prevent exposure.
- Continue to screen at well-child visits per screening plan flowchart.

3.5 µg/dL and higher

All actions listed above, plus:

- Confirm blood lead level with a venous blood lead test within time frame specified in **Table 1**.
- Report capillary blood lead test result to public health.

Table 1. Schedule for confirmatory venous test based upon capillary BLL in children and youth

Initial capillary BLL	Timeframe to confirm with venous blood test[a,b]
3.5 – 9 µg/dL	Within 3 months
10 – 19 µg/dL	Within 1 month
20 – 44 µg/dL	Within 2 weeks
≥45 µg/dL	Within 48 hours

[a]The higher the capillary BLL, the more urgent it is to get a venous sample for confirmatory testing. [b]CDC recommends that healthcare providers use a venous draw for confirmatory blood lead testing.

Table 2. Schedule for follow up blood lead tests based upon confirmed venous BLL in children and youth

Confirmatory venous BLL	Early follow-up testing (2-4 tests after initial venous test)[a]	Later follow-up testing after BLL is declining
3.5 – 9 µg/dL	Every 3 months[b]	Every 6 – 9 months
10 – 19 µg/dL	Every 1 – 3 months[b]	Every 3 – 6 months
20 – 44 µg/dL	Every 2 weeks – 1 month	Every 1 – 3 months
≥45 µg/dL	As soon as possible	As soon as possible

[a]Changes in BLL due to seasonal weather changes may be more apparent in colder climate areas. Greater exposure in the summer months may necessitate more frequent follow-ups. [b]Some healthcare providers may choose to repeat blood lead tests within a month. Repeated testing may confirm that the child's blood lead level is decreasing.

CONFIRMED VENOUS BLOOD LEAD LEVEL

Medical case management recommendations based upon venous BLL in children and youth

Below 3.5 µg/dL

- Provide education on common sources of lead exposure and how to prevent exposure.
- Report venous blood lead test result to public health.
- During well-child visits:
  - Perform routine assessments of developmental milestones.
  - Discuss the child's diet and nutrition with a focus on calcium and iron intake.
  - Conduct recommended childhood lead screening activities based on the screening plan flowchart.

3.5 – 19 µg/dL

All actions listed above, plus:

- Obtain an environmental exposure history to identify potential sources of lead.
- If the child is under 6 years of age, inquire if they reside in U.S. Department of Housing and Urban Development (HUD)-assisted housing. A confirmed blood lead level ≥3.5 µg/dL in a child under 6 years of age may trigger a HUD environmental investigation if the housing was built before 1978. Families or caregivers should notify their local Public Housing Agency for more information.
- Ensure the child does not have iron deficiency. Follow testing and treatment guidelines from the AAP (2025).
- Discuss the child's diet and nutrition with a focus on calcium and iron intake.
- Check the child's development to ensure appropriate milestones are being met per AAP guidelines (2025).
- Refer caregivers to supportive services, as needed. For example:
    - Developmental specialists
    - Early Intervention Program
    - WIC
- Conduct follow-up blood lead testing at recommended intervals in **Table 2**.

20 – 44 µg/dL

All actions listed above, plus:

- Conduct a complete health history and physical exam, assessing for signs and symptoms of lead poisoning.
- Inquire with the local or Tribal health department about an environmental investigation of the home to identify potential sources of lead. The capacity to conduct environmental investigations of homes varies across jurisdictions based upon available resources. Families or caregivers can also seek fee-based services from a certified lead risk assessor or inspector.
- Consider obtaining an abdominal x-ray to evaluate for ingested lead sources such as lead-based paint chips, lead shot or fishing weights. Initiate bowel decontamination, if indicated.
- Contact the Montana Poison Center (1-800-222-1222) or the Pediatric Environmental Health Specialty Unit in Region 8 (PEHSU; 877-800-5554) for clinical guidance.

45 µg/dL and higher

All actions listed above, plus:

- Conduct a detailed neurological exam.
- Perform an abdominal x-ray. Initiate bowel decontamination, if indicated.
- If the patient exhibits signs or symptoms of lead poisoning, including confusion, weakness, seizures, coma, nausea, vomiting, and abdominal pain, admit them to a hospital as soon as possible.
- Consider admitting the patient to a hospital if either of these conditions apply:
    - The patient's home is not lead-safe and they are unable to find a lead-free living space.
    - The source of lead exposure has not been identified and the potential for further lead exposure is still possible.
- Consult with a medical toxicologist or pediatrician with experience in treating lead poisoning to initiate gastrointestinal decontamination and/or chelation therapy, if indicated. These specialists may be contacted at the Montana Poison Center (1-800-222-1222) or the PEHSU in Region 8 (877-800-5554).

Contributors

MT DPHHS prepared this resource for healthcare providers in Montana who provide medical care to children and youth. This publication was made possible by cooperative agreement CDC-RFA-EH21-2102 with the CDC National Center for Environmental Health.

MT DPHHS Childhood Lead Poisoning Prevention Program

Amy Hallmark, M.S.
Environmental Health Epidemiologist
Toxicology and Environmental Public Health Section
Public Health and Safety Division

Dawn Nelson
State Toxicologist
Toxicology and Environmental Public Health Section
Public Health and Safety Division

MT CLPPP would also like to acknowledge Abbie Phillip, former epidemiologist at MT DPHHS, for her initial contributions to the screening plan.

MT DPHHS Reviewers

Maggie Cook-Shimanek, M.D., M.P.H.
Public Health Physician
Public Health and Safety Division

Laura Williamson, M.P.H.
State Epidemiologist and Bureau Chief
Epidemiology and Scientific Support Bureau
Public Health and Safety Division

External Reviewers

Members, Montana Childhood Lead Poisoning Prevention Program Advisory Committee

References

American Academy of Pediatrics. (2024). *Lead exposure*. Retrieved May 29, 2025, from https://www.aap.org/en/patient-care/environmental-health/promoting-healthy-environments-for-children/lead/?srsltid=AfmBOooNSSUClBoeRjdgCGJes_TUe6nl-GkxW5bYuo1mrtWVViH5M6po.

American Academy of Pediatrics. (2025). *Bright Futures/American Academy of Pediatrics recommendations for preventive pediatric health care*. Retrieved May 23, 2025, from https://downloads.aap.org/AAP/PDF/periodicity_schedule.pdf.

American Academy of Pediatrics. (2025). *Pediatric nutrition* (9th ed.) (F.R. Greer & S.A. Abrams, Eds). American Academy of Pediatrics. DOI: 10.1542/9781610027700

Montana Department of Commerce. (2024). *Lead service lines*. Retrieved July 29, 2025, from https://commerce.mt.gov/Infrastructure-Planning/Programs-and-Services/Community-Technical-Assistance/lead-service-line.

U.S. Census Bureau, U.S. Department of Commerce. (2023). *ACS demographic and housing estimates. American Community Survey, ACS 5-Year Estimates Detailed Tables, Table DP05*. Retrieved July 29, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP05?q=United+States&t=Populations+and+People&g=040XX00US30.

U.S. Census Bureau, U.S. Department of Commerce. (2023). *Year structure built. American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B25034*. Retrieved January 2, 2025, from https://data.census.gov/table/ACSDT5Y2023.B25034?q=Montana%20zip%20code%20year%20housing%20built&t=Year%20Structure%20Built&g=010XX00US_040XX00US30$8600000.

U.S. Centers for Disease Control and Prevention. (2024). *People at increased risk for childhood lead poisoning.* Retrieved May 29, 2025, from https://www.cdc.gov/lead-prevention/risk-factors/index.html#:~:text=Children%20from%20low%2Dincome20households%20and%20those%20who%20live%20in,more%20likely%20to%20 contain%20lead.

U.S. Centers for Disease Control and Prevention. (2025). *Recommended actions based on blood lead level.* Retrieved May 23, 2025, from https://www.cdc.gov/lead-prevention/hcp/clinical-guidance/index.html.

U.S. Centers for Disease Control and Prevention. (2025). *Risk factors and refugees and immigrants*. Retrieved May 29, 2025, from https://www.cdc.gov/lead-prevention/risk-factors/refugees-immigrants.html.

U.S. Centers for Medicare and Medicaid Services. (2016). *Lead screening*. Retrieved May 29, 2025, from https://www.medicaid.gov/medicaid/benefits/early-and-periodic-screening-diagnostic-and-treatment/lead-screening.

U.S. Environmental Protection Agency. (2024). *Protect your family from sources of lead*. Retrieved May 29, 2025, from https://www.epa.gov/lead/protect-your-family-sources-lead.

U.S. Environmental Protection Agency. (2025). *National Priorities List sites.* Retrieved April 21, 2025, from https://www.epa.gov/superfund/national-priorities-list-npl-sites-state.

APPENDIX A.

Explanation of Child Lead Risk Factors

Lead Risk Question	Risk Factor Explanation
1. Is your child a refugee or international adoptee who arrived in the United States in the past 90 days?	The CDC recommends that refugees and international adoptees receive a blood lead test within 90 days of arrival in the United States due to pre-migration and post-migration risk factors for lead exposure. Children may be exposed to lead in other countries through the environment, cultural practices, traditional medicines and consumer products. Refugees may continue to use or consume hand-carried or imported products that are contaminated with lead after arriving in the United States. Children who have resettled in the United States from other countries are also more likely to be malnourished and have other health conditions that can increase lead absorption compared with children born in the United States (CDC, 2025).
2. Does your child participate in Medicaid, Healthy Montana Kids, WIC, Head Start, Early Head Start or Foster Care or are they an international adoptee who has been in the United States for more than 90 days?	This question identifies children who are required or are targeted to receive blood lead testing at 12 and 24 months of age or at least once by the age of 6 if not previously tested. Children enrolled in Medicaid or Healthy Montana Kids are required to receive blood lead testing at these age-specific well-child visits per CMS (2016). Montana has implemented targeted blood lead testing in children who are at high risk of lead exposure due to socio-economic risk factors during these same age-specific well-child visits. Children who participate in WIC, Head Start or Early Head Start are targeted for blood lead testing since higher blood lead in children has been linked to low-income households (CDC, 2024). Children who are in Foster Care are targeted for blood lead testing due to factors like frequent changes in housing and potential lack of coordinated healthcare services. The CDC recommends international adoptees be tested upon arrival in the United States (Question 1) and again at 12 and 24 months of age as they may have been exposed to lead hazards in other countries.
3. Does your child reside in a targeted zip code for blood lead testing?	Children who reside in a geographical area with at least 25% of housing stock built before 1960 or near a Superfund National Priorities List site that is contaminated with lead with ongoing risk of human exposure to lead are targeted for blood lead testing at 12 and 24 months of age or at least once before the age of 6 if not previously tested because they are at high risk of lead exposure from their environment.
4. Does your child live in or often visit a home, childcare center or other building built before 1960?	Lead-based paint is one of the most common causes of lead poisoning in children. Lead-based paint produced before 1960 contained much higher concentrations of lead than paint manufactured in later years and is estimated to have been used in 69% of homes built between 1940-1959 and 87% of homes built before 1940 (EPA, 2024). Children who are crawling, engaging in oral exploratory behavior or have pica are at high risk of ingesting lead-contaminated dust and paint chips from deteriorating or damaged paint in their environment.
5. Does your child live in or often visit a home, childcare center or other building built before 1978 that has been remodeled or renovated in the past six months or has peeling or chipping paint?	Lead-based paint is one of the most common causes of lead poisoning in children and was banned for residential use in 1978. Lead-based paint is estimated to have been used in 1 in 4 homes (24%) built between 1960 and 1978 (EPA, 2024). Lead-based paint that is in poor condition and activities that disturb lead-based paint like remodeling, renovation and repairs can release lead-contaminated dust and paint chips into the environment, exposing children to lead.

Lead Risk Question	Risk Factor Explanation
6. Are you aware of any high levels of lead detected in a water test (5 ppb or higher) from where your child lives or often visits, including a childcare center or school?	Water is a potential source of lead exposure in children. While no consumption of lead in water is safe, lead-contaminated water can pose a serious health risk for infants who are fed formula mixed with tap water and children who consume large quantities of tap water. The most common sources of lead in drinking water are corroding lead pipes, faucets and plumbing fixtures. Homes, schools and other buildings built before 1986, when the use of lead in new plumbing installations and repairs was banned, are more likely to have lead in water from internal plumbing sources than newer buildings (EPA, 2024). Water service lines that carry water from the main water supply to homes, schools or other buildings can also be a source of lead in drinking water.
7. Are you aware of any family member, household member, or frequent playmate of your child who had high levels of lead in their blood ($\geq$ 3.5 µg/dL) or lead poisoning within the past 6 months?	Children who live, play, or frequently visit the same environment as other people with lead poisoning may be exposed to the same source of lead.
8. Does your child live with or frequently spend time with someone whose job or hobby can expose them to lead?	People who work around lead as an occupation or hobby can bring home lead on their skin, clothes, shoes and other items, exposing others to lead. Children who have access to areas where lead is used or to products that contain lead may be exposed.
9. Does your child chew on painted surfaces or eat non-food items such as paint chips, dirt or clay?	Children can be exposed to lead by chewing on surfaces that contain lead-based paint or lead-contaminated dust. Eating non-food items including but not limited to paint chips, sheetrock, chalk, crayons, paper, rocks, dirt or clay can expose children to lead. Children with pica behavior are at increased risk of lead exposure (AAP, 2024).
10. Does your child eat imported spices or candy (e.g., tamarind, plum, turmeric, or chili) or eat or drink from serveware or cookware that has been imported or hand-carried to the United States?	Imported foods, candies and spices from other countries may contain lead or be wrapped in packaging printed with lead ink. Ceramic and glassware products from other countries used to serve, store or cook food may contain lead glazes or decorative paints with lead. Some aluminum and brass cooking pots and pressure cookers from other countries also contain high levels of lead.
11. Do you have any concerns that your child may have been exposed to lead that we haven't talked about?	This question provides the opportunity for a parent or caregiver to discuss other lead exposure concerns that are not addressed in the brief childhood lead risk questionnaire. For example, they might have received a recall notice related to a food or product that the child uses that was contaminated with lead. They might have concerns related to feeding their child wild game that was shot with lead bullets, which can contaminate the meat with lead, or reside next to an old mine or outdoor gun range where lead can be released into the environment. Healthcare providers are encouraged to test a child for blood lead if their parent or caregiver suspects the child has been exposed to lead.

APPENDIX B.

Additional Resources

BLOOD LEAD SPECIMEN COLLECTION

CDC Video on Reducing Lead Contamination during Blood Specimen Collection

The CDC developed a video, "Mission Unleaded: How to test children for lead with maximum accuracy," that discusses how to reduce the risk of lead contamination during the blood specimen collection process. The video can be accessed at https://www.youtube.com/watch?v=e1VL1p9Yaas.

Montana Public Health Laboratory

The Montana Public Health Laboratory publishes a laboratory services manual that includes instructions for collecting capillary and venous blood lead samples and submitting specimens to the laboratory for testing. The laboratory services manual can be accessed at https://dphhs.mt.gov/assets/publichealth/Lab/PublicHealthLabTesting/PHLLabManual.pdf. For more information, contact the Montana Public Health Laboratory at 1-800-821-7284.

Quality Practices for Testing Whole Blood for Lead

The Association of Public Health Laboratories published a quality improvement checklist for reliably collecting blood lead samples and measuring blood lead. The document can be accessed at https://www.aphl.org/aboutAPHL/publications/Documents/EH-Blood-Lead-Best-Practices.pdf.

CLINICAL CONSULTATION

Montana Poison Center

The Montana Poison Center is staffed by trained nurses, pharmacists and physician toxicologists and provides free clinical consultation to healthcare providers who are treating patients with lead poisoning. Contact the Montana Poison Center at 1-800-222-1222.

Rocky Mountain Region PEHSU

The Rocky Mountain Region PEHSU is a network of experts in children's environmental health based out of Denver, Colorado that serves Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming. PEHSU provides medical consultation to healthcare providers on preventing and treating harmful environmental exposures. For more information, visit https://www.denverhealth.org/services/ community-health/pediatric-environmental-health-specialty-unit or contact Rocky Mountain PEHSU at 1-877-800-5554.

LEAD EDUCATION AND TRAINING FOR HEALTHCARE PROVIDERS

AAP Training Video

AAP created a 6-minute video, "The Pediatrician's Role in Screening, Testing and Counseling for Lead Exposure," that provides recommendations to healthcare providers on how to identify children at risk of lead poisoning and mitigate their lead exposure. The video can be accessed at https://players.brightcove.net/6056665225001/default_default/index.html?videoId=6354752291112.

CDC's Childhood Lead Poisoning Prevention Training

The CDC developed a video training series to educate healthcare providers and public health professionals about the hazards of lead and the importance of increasing lead testing and linkage to care services. The training videos can be accessed at https://www.cdc.gov/lead-prevention/php/trainings/childhood-lead-poisoning-prevention.html.

PEHSU Lead for Health Professionals Website

PEHSU provides a lead resource page for healthcare providers that addresses common questions about lead exposure sources, signs and symptoms, testing, and pregnancy and lactation. The resource page can be accessed at https://pehsu.net/health-issue/lead-hcp/.

PEHSU National Classroom

PEHSU offers several free e-learning courses about lead and other environmental topics for healthcare providers. These courses can be accessed at https://education.acmt.net/pehsu.

LEAD-RELATED RECALLS AND ALERTS

U.S. Consumer Product Safety Commission (CPSC) Recalls

Consumer products that have been recalled in the United States due to lead hazards can be found on the CPSC's Recalls and Product Safety Warnings website. The website can be accessed at https://www.cpsc.gov/recalls.

U.S. Department of Agriculture (USDA) Recalls

Meat, poultry, or egg products that have been recalled in the United States due to lead hazards can be found on the USDA's Recalls and Public Health Alerts website. The website can be accessed at https://www.fsis.usda.gov/recalls.

U.S. Food and Drug Administration (FDA) Recalls

FDA-regulated products that have been recalled due to lead hazards can be found on the FDA's Recalls, Market Withdrawals, and Safety Alerts website. The website can be accessed at https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts.

MONTANA LEAD IN SCHOOLS PROGRAM

Lead in Water Test Results from Montana Schools

Beginning January 17, 2020, all schools regulated through the Montana Office of Public Instruction are required to conduct initial and routine water sampling to test for lead in school drinking water and other water that can be used for human consumption. A lead measurement of five parts per billion (5 µg/L) or higher from a fixture sample requires follow-up action. Lead in water test results for schools are publicly available and can be accessed at https://deq.mt.gov/water/Programs/dw-lead.

PARENT/CAREGIVER RESOURCES

FACTS ABOUT CHILD LEAD EXPOSURE

All Children Can Be Exposed to Lead

The CDC provides a fact sheet with real-world examples of how children have been exposed to lead in the home environment. The fact sheet can be accessed at https://www.cdc.gov/lead-prevention/media/pdfs/all-children-can-be-exposed-to-lead-H.pdf.

Know the Facts: Protect Your Child from Lead Exposure

The CDC created a fact sheet for parents and caregivers about child lead exposure, the harmful effects, and how to protect children from exposure. The fact sheet can be accessed at https://www.cdc.gov/lead-prevention/media/pdfs/know-the-facts-H.pdf.

Lead Poisoning Prevention Videos

The AAP created videos to educate families about lead exposure and how to prevent it. The videos can be accessed at https://www.aap.org/en/patient-care/lead-exposure/lead-exposure-in-children/.

LEAD AND DRINKING WATER

Consumer Tool to Identify Water Filters Certified to Reduce Lead in Drinking Water

The U.S. Environmental Protection Agency (EPA) developed a two-page tool to help consumers identify point-of-use and pitcher filters certified to reduce lead in drinking water. The tool can be accessed at https://www.epa.gov/system/files/ documents/2024-06/how-to-id-filters-certified-to-reduce-lead-in-drinking-water-epa_june-2024.pdf.

Protect Your Tap: A Quick Check for Lead

The EPA developed an online step-by-step guide with pictures to learn how to find lead pipes and service lines in the home and also provides tips to reduce exposure to lead in drinking water. The guide can be accessed at https://www.epa.gov/ ground-water-and-drinking-water/protect-your-tap-quick-check-lead-0.

LEAD-BASED PAINT AND DUST IN THE HOME

Effective Cleaning Techniques for Lead Dust in the Home

The EPA developed a two-page information sheet on cleaning techniques to safely remove lead dust in the home. The information sheet can be accessed at https://www.epa.gov/sites/default/files/2020-10/documents/module_2_key_messages.pdf.

Find a lead risk assessment, inspection or abatement firm

The EPA provides a locator on their website to help homeowners find lead risk assessors and inspectors and lead-based paint abatement contractors in their area. The locator can be accessed at https://cdxapps.epa.gov/ocspp-oppt-lead/firm-location-search.

Protect Your Family from Lead in Your Home Pamphlet

The EPA created a pamphlet that explains how to check for lead hazards in the home and simple steps to protect household members from lead exposure. The pamphlet can be accessed at https://www.epa.gov/lead/protect-your-family-lead-your-home-english.

Renovate Lead-Safe Fact Sheet

The EPA created a one-page fact sheet on being lead-safe during do-it-yourself home renovation projects. The fact sheet can be accessed at https://www.epa.gov/system/files/documents/2022-11/Renovate%20Lead-Safe%20Fact%20Sheet.pdf.

NUTRITION

Fight Lead Poisoning with a Healthy Diet

The EPA published a brochure on meals and snacks that provide calcium, iron and vitamin C to help the body absorb less lead. Many of the foods listed are offered in WIC food packages. The brochure can be accessed at https://www.epa.gov/ sites/default/files/2020-01/documents/fight_lead_poisoning_with_a_healthy_diet_2019.pdf.

PEDIATRIC LEAD SCREENING

AAP and Bright Futures Periodicity Schedule

AAP and Bright Futures provide recommendations for preventive pediatric health care by age. A periodicity schedule of these recommendations can be accessed at https://downloads.aap.org/AAP/ PDF/periodicity_schedule.pdf.

AAP Policy Statement: Prevention of Childhood Lead Toxicity

AAP's policy statement on the prevention of childhood lead toxicity can be accessed at https://www.aap.org/en/patient-care/lead-exposure/.

Immigrant and Refugee Lead Screening Guidance

The CDC provides lead screening guidance for health care providers who conduct the initial medical screening for refugee infants, children, adolescents, and pregnant and lactating women and girls upon their arrival in the United States. This guidance can be accessed at https://www.cdc.gov/immigrant-refugee-health/hcp/domestic-guidance/lead.html.

Medicaid Blood Lead Testing Requirements

CMS requires all children enrolled in Medicaid and Children's Health Insurance Program to receive blood lead tests at 12 and 24 months of age. Any child between the ages of 24 and 72 months with no record of a previous blood lead test must also be tested. Information on this requirement can be found at https://www.medicaid.gov/medicaid/benefits/early-and-periodic-screening-diagnostic-and-treatment/lead-screening.

Medicaid General Information for Providers Manual

Information on blood lead testing and EPSDT well child visits can be accessed at https://medicaidprovider.mt.gov/manuals/generalinformationforprovidersmanual.