



THE HEINZ ENDOWMENTS
& HIGHMARK FOUNDATION

Healthy Early Learning Program Creating Healthy Spaces

A report produced by: Women for a Healthy Environment

Women for a Healthy Environment (WHE) is a nonprofit organization whose mission is to educate and empower community members to act as ambassadors about environmental risks so they can make healthy choices for themselves and their family and advocate for change for a better tomorrow for all. Through educational programming, technical assistance and advocacy, the organization focuses on creating healthy environments in three key areas: homes, schools and early learning centers.

For the complete report, visit [WomenForAHealthyEnvironment.org](https://www.WomenForAHealthyEnvironment.org).



I. Background

The 1,000 Hours a Year program began on the premise that children spend approximately 1,000 hours each year in school buildings and even more hours in early learning (childcare) centers. With that significant amount of time, we must ensure a safe and healthy environment in which children can learn and thrive. This has been reinforced by the Administration for Children and Families in the U.S. Department of Health and Human Services publication *Caring for Our Children Basics: Health and Safety Foundations for Early Childcare and Education*.¹

“While high quality early care and education settings can have significant developmental benefits and other positive long-term effects for children well into their adult years, poor quality settings can result in unsafe environments that disregard children’s basic physical and emotional needs leading to neglect, toxic stress, injury, or even death. As a result, it is not surprising that health and safety has been identified in multiple parent surveys as one of the most important factors to consider when evaluating childcare options.”²

Additionally, research informs us that when the environment is free of environmental hazards there is a demonstrated increase in academic performance.

“Healthy school environments play an important role in the health and academic success of children. Exposure to environmental hazards in schools can negatively impact the health of children and school staff. Unhealthy school environments can also affect attendance, concentration, and performance, as well as lead to expensive, time-consuming cleanup and remediation activities.”³

Pennsylvania is noted for its aging infrastructure. Approximately 80% of homes were built before 1978, the year lead was banned from paint. Schools are on average 60 years old (higher than the national average) – putting children at increased risk for lead exposure. Additionally, because of their age-appropriate behaviors like crawling on the floor, putting things in their mouths, and exploring the spaces around them, children under the age of six are at the highest risk of lead poisoning. radon, another environmental hazard, is an odorless, colorless gas and the second leading cause of lung cancer. Southwestern PA is noted by the U.S. Environmental Protection Agency (EPA) as being at high risk for radon.⁶

The 1,000 Hours a Year program offers both technical support and funding to test and remediate for lead and radon in schools and early learning centers across the region, with an emphasis on prioritizing Environmental Justice communities, or the communities with the greatest need, and at highest risk for environmental exposures. Throughout this program, Women for a Healthy Environment (WHE) engages both commercial and home-based early learning providers in low-income communities within Allegheny County. Both settings foster the development of academic and social skills in a safe, caring environment.

II. Evidence-Based Approach To The Work

The science is clear; lead and radon impact a child's development, growth, and learning.

A. Lead: Lead is a heavy metal that was typically used as an additive in various items such as paint, plumbing materials, toys, costume jewelry, gasoline, and hobbies such as fishing and hunting. Exposure to lead can seriously harm a child's health, including damage to the developing brain and nervous system, learning and behavior problems, slowed growth and development, and impacts on hearing and speech. Lead exposure has been demonstrated to cause lower IQ, decreased ability to pay attention, and underperformance in school. Buildings built before 1978 have a high chance of containing leaded materials. When paint chips, peels, or cracks, lead dust results and can poison children when the lead is swallowed or inhaled. Additionally, many older buildings can contain leaded pipes or plumbing fixtures. According to the Centers for Disease Control and Prevention (CDC) and EPA:

- 535,000 U.S. children below the age of five have blood lead levels high enough to damage their health³
- Approximately 29 million housing units have lead-based paint hazards including deteriorated paint and lead-contaminated house dust⁴
- Lead exposure can cost \$5,600 in medical and special education costs for each seriously lead-poisoned child⁵

The good news is we know where lead is often located, we can test for it, and there are methods to make the environment lead-safe, thereby preventing any elevated blood lead levels in children.

B. Radon: Radon is a naturally occurring, radioactive gas that is estimated to cause 21,000 lung cancer deaths in the U.S. annually. According to the U.S. Environmental Protection Agency (EPA), about seven million U.S. homes and buildings have radon present. Radon gas occurs in almost all soil. It enters buildings through cracks and holes in the foundation. Due to its geology as well as extreme weather and seasonal changes, Pennsylvania is at high risk.

III. Description Of Centers Participating

Each of the participating centers fit the criteria of being minority owned centers located in areas burdened by significant environmental hazards, deemed as environmental justice communities by the EPA. The participating centers are located in the following municipalities: Penn Hills Township, Wilkinsburg Borough, and City of Pittsburgh – North Side neighborhood. The combined number of children positively benefited from this initiative is 284.

IV. Description Of Work

The centers were subject to a full lead inventory and risk assessment (LIRA) and/or a radon test. Below is a summary of those results at each location, as well as information regarding any remediation that occurred.

The LIRA indicates the specific location of testing, the surface condition classification, and if the surface is classified as positive or negative for lead. A painted surface is considered to contain lead-based paint when a level of 1.0 mg/sq. cm. or greater is noted. Surfaces which are determined to be below the regulatory definition of 1.0 mg/sq. cm and are classified as negative for lead based paint may still contain lead. Acceptable levels for lead dust as per the EPA regulations are 10 ug/sf for floors, 100 ug/sf for windowsills, 400 ug/sf for window troughs, and porch floors 40 ug/sf.

As noted by one of WHE's certified risk assessors:

Lead based paint abatement regulation for the Commonwealth of Pennsylvania requires that a licensed lead abatement contractor be retained to address the noted interim controls within the facility. Renovations (where applicable) may be handled by a licensed EPA Renovation Repair and Painting contractor for any future designated renovations. The RRP rule covers all pre-1978 construction where a child under the age of six resides or is expected to reside. This regulation requires contractor containment preparation for renovations and specific clearance criteria for completion of renovation work to minimize any lead dust migration and accumulation within the home.

Maintenance of all negative and positive surfaces should be performed in a lead safe manner. Risk assessors note that high dust generation activities, such as dry sanding, grinding or removal, during remodeling of negative surfaces can lead to a lead dust hazard in the residence. This information is known and understood by WHE's contractors. Then proper disposal of building materials must occur because this material is classified as hazardous waste.

If remediation is required, an inspection by the lead risk assessor was subsequently performed to determine that the work was done in accordance with EPA and HUD regulations for childcare centers. This is known as clearance testing. The purpose of this inspection is to determine if cleaning activities have been adequate following remediation and lead based paint interim controls. The contractors had proper training, including EPA's Lead Renovation, Repair and Painting (RRP) certification. Federal law requires all renovation, repair, and painting firms (including sole proprietorships) working in housing, or facilities where children are routinely present, built before 1978, to be certified.⁷

1



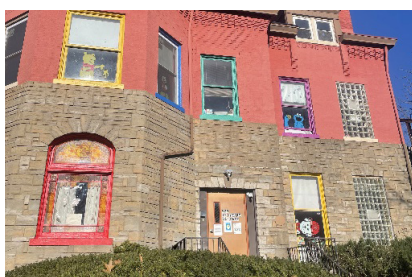
Description: Located in Wilkinsburg, PA, this is a 17,424 sq ft building that has the capacity to serve 30 children. 95 percent of the students are eligible for CACFP, WIC, SNAP, or federal funding.



XRF testing of toys to determine if lead is present.



Peeling paint on exterior window was depositing on the ground where children enter the center.



After: Windows were all repainted to address peeling paint

Testing: 1st Years Daycare was tested for lead in all potential sources of exposure including paint, dust, soil, and water. Lead-based paint was detected on the window and door components, as well as the baseboards. Elevated levels of lead in dust, above EPA/HUD guidelines, were detected within the several windowsills and on the floor surface in the entryway.

The water sample also indicated the presence on a first-draw sample; however, the second draw indicated no lead present. This informs us of the likelihood of leaching lead from solder or direct lead piping within the facility (the 1986 Safe Drinking Water Act mandated that new plumbing materials be lead-free). This was confirmed with WHE's X-ray fluorescence device. There was bare soil on the property, which also tested positive for lead.

Remediation: Extensive remediation was necessary at this location (grant funds from two sources were used to address the hazards). A summary follows:

- Windows – repainted all trim, sash, and sills with Bitrex additive.
- Baseboards and trim that tested positive but were intact (no visible chipping, peeling, etc.) – repainted and include Bitrex additive.
- Deteriorated doors – removed door, jam, and trim and replaced with new, then painted to center's preference.
- Replaced transom window along with trim attached. Framed new door pocket for new door and frame transom area for new drywall.
- Walls – intact but had lead present so painted and added Bitrex.
- Front windows – LBP chipping and near entrance of facility. Removed chipped paint then painted with Bitrex additive.



2

Description: Located on the Northside of Pittsburgh, this is a 2,800 sq ft building. The center serves 31 children of which 100 percent of students are eligible for CACP, WIC, SNAP, or federal funding.

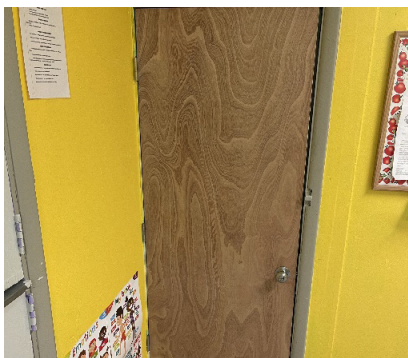


Closet door that tested positive for LBP

Testing: Angel Academy was tested for lead in all sources: dust, paint, soil, and water, as well as radon. Lead-based paint was identified in several areas and needed to be addressed.

The results indicated no lead was in the dust, soil, or water samples. In addition, radon levels were also within an acceptable range. Lead based paint was identified on a closet door requiring attention.

Remediation: The door was removed according to EPA RRP regulations and the new door jamb was fitted for a new lead-free door. The door was then painted to match the previous door's color and proper clean-up was completed. The center was retested by the risk assessor and passed clearances showing that lead remediation was successful and no lead hazards remained.



Installation of new closet door before it was painted



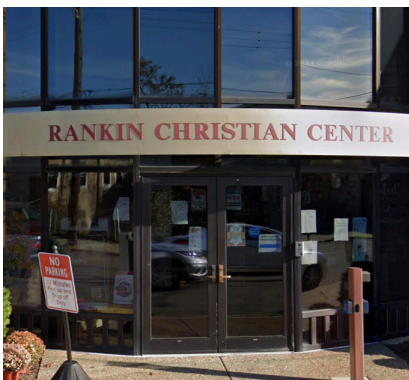
Prepping the work area for lead renovations



Lead-safe cleanup performed after lead renovations

3

Description: Located in Rankin, PA, this facility has the capacity to serve 40 children. This is a Keystone STAR 3 facility with certified teachers and staff with no less than CDA credentials.



Lead hazards were identified on the frame of a door (casing/door jamb) at the main entrance.

Testing: A full Lead Inventory and Risk Assessment was completed at Blessed Assurance Christian Family Childcare, meaning testing was conducted for lead in dust, paint, soil, and water. Lead hazards were identified on the frame of a door (casing/door jamb) at the main entrance, an interior door casing, and interior window components (casing and windowsills) of several rooms.

In addition, the center was tested for radon. All tests depicted readings below the DEP action level of 4pCi/l. No further action was necessary; however, the Department of Environmental Protection recommends that large buildings be tested every five years as radon fluctuates over time.

Remediation:

- Removed all lead-based paint and re-painted using paint Bitrex around doors.
- Removed all lead-based paint from window casing and windowsill.
- Re-painted using paint containing Bitrex.
- Performed specialized lead dust cleaning of windowsills.



Lead hazards were identified on the interior window components (casing and windowsills)

4



Description: Located in Penn Hills, PA and this center is in a 9,882 sq ft building with multiple tenants. The center has the capacity to serve 120 children and is enrolled in the subsidized childcare program. The center is affiliated with Keystone STARS program and currently holds a Level 2 designation, which is also an approved Head Start site.

Testing: A full Lead Inventory and Risk Assessment was completed at Future Focus Daycare, meaning testing was conducted for lead in dust, paint, soil, and water. The assessment results indicated there were no lead safety hazards present. The center staff were reminded to conduct proper maintenance and upkeep of lead-based painted components to maintain lead safety standards within the facility.

In addition, the center was tested for radon. All tests depicted readings below the DEP action level of 4pCi/l. No further action was necessary; however, the Department of Environmental Protection recommends that large buildings be tested every five years as radon fluctuates over time.

Remediation:

Not applicable.

5



Description: Located in Penn Hills, PA and this facility is in a 3,500 sq ft building serving 51 children. 95 percent of children served are eligible for CACFP, WIC, SNAP, or federal funding. Learning 2 Learn Childcare Center is a Keystone Stars Level Four center which is the highest rating possible.

Testing: A full Lead Inventory and Risk Assessment was completed at Learning 2 Learn Childcare Center, meaning testing was conducted for lead in dust, paint, soil, and water. The assessment results indicated there were no lead safety hazards present. The center staff were reminded to conduct proper maintenance and upkeep of lead-based painted components in order to maintain lead safety standards within the facility.

Remediation:

Not applicable.

6



Description: Located in Wilkinsburg, PA and this center has the capacity to serve 12 children. The center participates in the federally subsidized childcare program.

Testing: A combined Lead Based Paint Inspection/Risk Assessment including water testing was performed at Trecha's Home Daycare and Child Development. Lead based paint hazards requiring treatment were identified on the following components:

- Porch – ceiling, box beam, and ceiling trim
- Windows – sashes. Lead based paint in fair or intact condition was identified on the following additional components. Care should be taken when working on components adjoining these lead positive components to minimize disturbance. These components, as well those LBP containing components identified in the sections above, are to be enrolled in an ongoing monitoring program.

Dust and water samples indicated there was no lead present. In addition, there was no bare soil, meaning no potential lead exposure hazard to children. The center was also tested for radon. All tests showed readings below the DEP action level of 4 pCi/l and no further action was necessary.

Remediation:

- Removed all lead-based paint from window sashes in three rooms.
- Re-painted all sashes with paint containing Bitrex.
- Removed all lead-contaminated wood from porch, replaced with new wood, and re-painted with paint containing Bitrex.
- Cleaned all dust and debris from windowsills, troughs, and floors around the work areas.

V. Summary

The science is clear that both lead and radon can harm human health especially negatively impacting a child's rapidly growing body. The good news is both environmental hazards are completely preventable as demonstrated by this program. Although lead can be somewhat suspected based on certain building specific factors, such as age of building and deteriorated paint, the only real way to know if lead or radon is present is to test. For many early learning providers, both testing and remediation can be financially difficult. This is why programs such as the 1,000 Hours a Year program are so critical and beneficial to protecting children's health.

^{1,2} [Caring for Our Children Basics Health and Safety Foundations for Early Care and Education \(hhs.gov\)](#)

³ [About the State School Environmental Health Guidelines | US EPA](#)

⁴ [Lead in Paint | Sources of Lead | CDC](#)

⁵ [Lead - State Programs - Marion County, Indiana | CDC](#)

⁶ [Radon in the Home \(pa.gov\)](#)

⁷ [Renovation, Repair and Painting Program: Firm Certification | US EPA](#)