



Helen R. Walton Children's Enrichment Center and Early Childhood Initiatives Center

Healthy Project Guide

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Healthy
Materials
Lab

“Children are our first priority!”



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OBJECTIVES



The Importance of Early Childhood Education

The Helen R. Walton Children's Enrichment Center (HWCEC) and Early Childhood Initiatives Center (ECIC) celebrate the significant influence that the first few years of life have on children's longterm development. This critical period guides their formation of social and emotional skills, as well as their physical and cognitive health. Through continued dedication to the children of Northwest Arkansas, the HWCEC and ECIC look to elevate the standards of childhood education across the region, developing a community of educators that are committed to the lifelong benefits of each child's growth and development.¹

*"Change the first five years,
and you change everything"*
-The Ounce



1. [Helen R. Walton Children's Center: Advocacy](#)

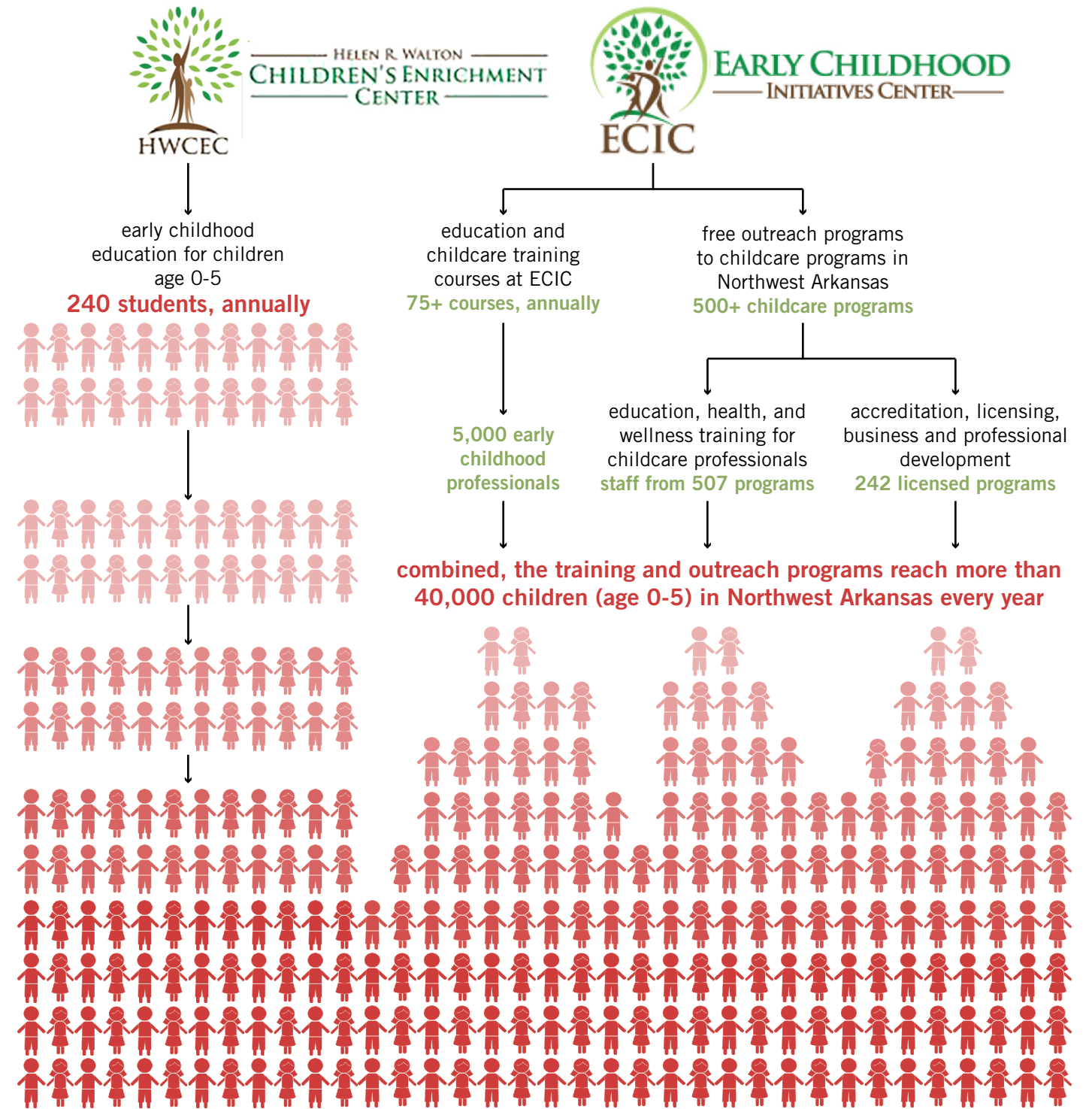
Regional Impact of HWCEC and ECIC

Helen R. Walton Children's Enrichment Center (HWCEC)

Children are our first priority at the Helen R. Walton Children's Enrichment Center; our doors opened in 1982. We are a trusted name in both the community and the early childhood industry. Our commitment is to provide families access to the highest quality early childhood education and care. The Center reaches beyond our families served and collaborates with early childhood programs throughout Northwest Arkansas.¹

The Early Childhood Initiatives Center (ECIC)

The ECIC collaborates with the nearly 500 early childhood programs in Northwest Arkansas, to ensure that every child, infant through pre-k, has access to the highest quality of early childhood education and care. High-quality early childhood education benefits the child, workforce and society through increased graduation rates, parental earnings and employee retention, and ensures a talent rich pipeline, leading to a \$9.21 return on investment for every dollar spent in early education. We rely on the generosity of volunteers, advocates and donors in our community.²



“By combining these two forces together, we will see a ripple effect across our community.”

1. [Helen R. Walton Children's Center: Advocacy](#)
 2. [The Early Childhood Initiatives Center \(ECIC\) Summary and Statistics](#)

Elevating Standards for Early Childhood Practices

As committed advocates towards the advancement of early childhood best practices, HWCEC looks to elevate the standards for research, policy, and professional development in order to address the social, emotional, physical, and cognitive needs of children.¹ This project is an opportunity to implement innovative strategies towards this goal.

Objectives:

- **natural learning environments** that will provide authentic and inspiring space for young children to learn
- **community of educators** that are dedicated to lifelong learning for the benefit of each child's growth and development
- **health and safety initiatives** that will promote health, nutrition, and safety of children and staff
- **sustainable funding** for future support of the highest quality of care and education



“It is our responsibility, as adults, to create beautiful, inspiring environments for today’s children to grow up in.”

1. [Press Release: Helen R. Walton Children’s Enrichment Center Finalizes Design Team for New Facility](#)

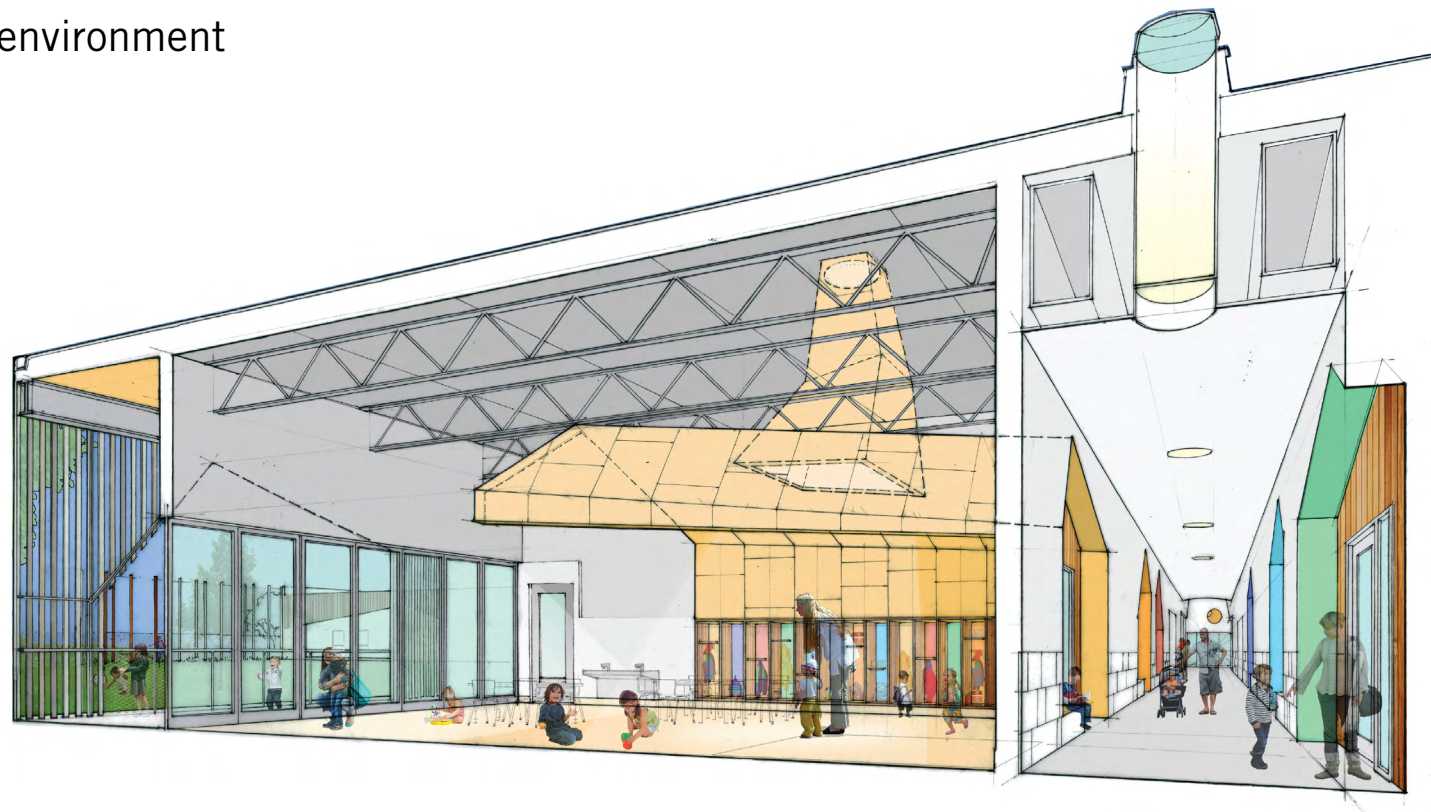
A Holistic Approach to the Multiplicity of Children's Health

Environmental Health

Indoor/Outdoor Classrooms create a seamless transition between nature and learning, drawing in daylight to provide feelings of comfort and connection to the outdoor environment

Emotional/Mental Health

The recognizable gable entry frames the classroom, extending within to provide a comforting, homey feeling while children learn and play



Physiological Health

Improving indoor air quality with material toxicity and emissions evaluations, ventilation and humidity control, and a smoke-free campus

Intellectual Health

Playful variations in textures, colors, and materials create stimulating and engaging environments that foster intellectual development

Nutritional Health

Herb Gardens and Teaching Kitchen provide hands-on lessons in nutritional value and healthy eating

Occupational Health

ECIC pre-service training equips staff with professional skills and strategies for managing stress



Community/Social Health

Training centers, material libraries, and community gathering spaces create a regional hub for early childhood professionals

Exercise/Physical Health

Playscapes, walking trails, and bike paths encourage physical fitness and connection to the surrounding community

CHALLENGES



Critical Health Risks

Facing the Children of Arkansas

With the state ranked 48th in the country in overall health,¹ Arkansas's children have some of the highest rates of major health disorders. These include learning and developmental disabilities, such as Autism and ADHD, chronic diseases and conditions, such as asthma, flu, and pneumonia, and disorders that cause lifelong debilitation, such as obesity, premature birth, and SIDS.



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1. [Arkansas's Big Health Problems and How We Plan to Solve Them](#)
 2. [The Burden of Asthma in Arkansas](#)
 3. [ADHD by the Numbers: Facts, Statistics, and You](#)

Asthma, Pneumonia and Respiratory Infection

15% have had Asthma, with highest rates among lower income groups, minorities, and children with disabilities.²

Attention Deficit Hyperactivity Disorder (ADHD)

14.6% are diagnosed with ADHD, which is the second highest rate in the country.³

Autism Spectrum Disorder (ASD)

1:65 are diagnosed with Autism, well above the national average of 1:88.⁴

Influenza (Flu) and Immune Deficiency

800 deaths were attributed to influenza and pneumonia in 2008, with babies being a primary demographic.⁵

Obesity

35.9% struggle with obesity (the highest rate in the country), a precursor to several of the main causes of death.⁶

Premature Birth

13.1% are born preterm, resulting in low birthweight, organ failure, and infant mortality.⁷

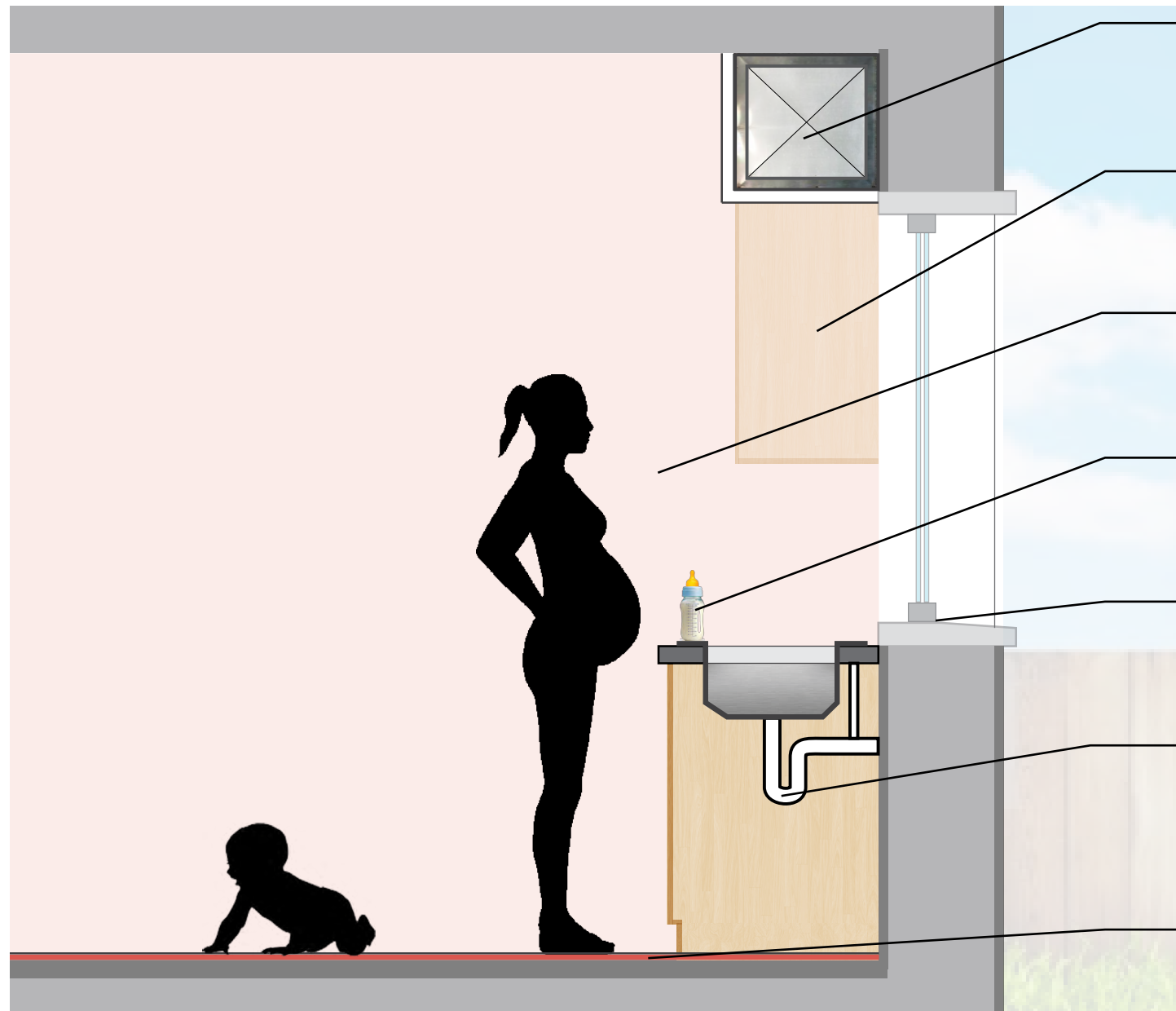
Sudden Infant Death Syndrome (SIDS)

2.2% die from SIDS, close to double the US average, and the most common cause of post-neonatal infant mortality.⁸

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4. [Tracking Autism Spectrum Disorder and Other Developmental Disabilities in Arkansas](#)
 5. [Arkansas's Big Health Problems and How We Plan to Solve Them](#)
 6. [Arkansas's Big Health Problems and How We Plan to Solve Them](#)
 7. [The State of Children's Health in Arkansas](#)
 8. [2013 Arkansas Baby Facts](#)

Children's Environmental Health

The Arkansas Department of Health recently launched the Children's Environmental Health Initiative in an effort to improve the health conditions of Arkansas's childcare facilities.¹ This campaign has looked at factors such as indoor air quality and chemicals found in building materials in order to understand environmental impact



on different diseases and disorders affecting children. Expanding on this research, we are advocating for keeping materials linked to Arkansas's most critical health issues out of the HWCEC-ECIC, taking a precautionary approach to avoid substances with known or suspected linkages to these diseases.

Sudden Infant Death Syndrome (SIDS)

Linked to air pollution, which can be worsened by mold and inadequate ventilation
[Sudden Infant Death Syndrome and Air Pollution](#)

Asthma

Adhesives and finishes that off-gas affect indoor air quality
[Full Disclosure Required: A Strategy to Prevent Asthma Through Building Product Selection](#)

Premature Birth

High VOC paint can off-gas, affecting mothers and fetuses
[Assessment of Exposure to VOCs among Pregnant Women in the National Children's Study](#)

Autism Spectrum Disorder

Plastic bottles and dish-ware contain chemicals linked to autism
[Study Suggests Association between Autism and BPA Plasticizer, Autism Speaks](#)

Obesity

Sealants, grout, silicon, and caulk can contain endocrine disruptors, linked to obesity
[National Institute of Environmental Health Sciences](#)

Immunodeficiency Disorders

PVC, found in many pipes, contains known carcinogens and chemicals that can interfere with immune, reproductive, and endocrine systems
[International Living Future Institute, Red List Chemical Guide](#)

Attention Deficit Hyperactivity Disorder (ADHD)

Flexible Vinyl Flooring containing phthalates is linked to behavioral disorders, including ADHD
[Scientific American, Chemical Exposure Linked to Attention Deficit Disorder in Children](#)

Children's Routes of Bodily Intake

While adults may be exposed through inhalation, ingestion, or dermal absorption, children face the added risks of being exposed to hazardous substances through maternal transfer of toxics, in addition to their own pathways for bodily intake.



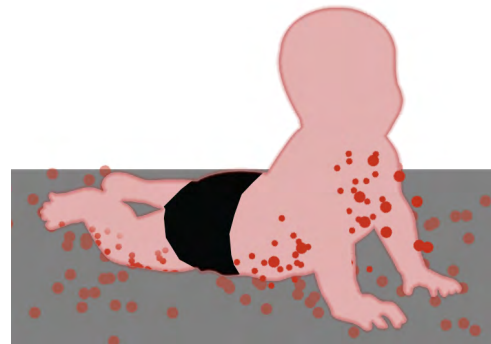
Inhalation

Respiration of particles in the air and dust consumption (young children may consume as much as 60 mg of dust per day)¹



Ingestion

Eating or drinking contaminated food or water supplies and hand-to-mouth activity throughout the day



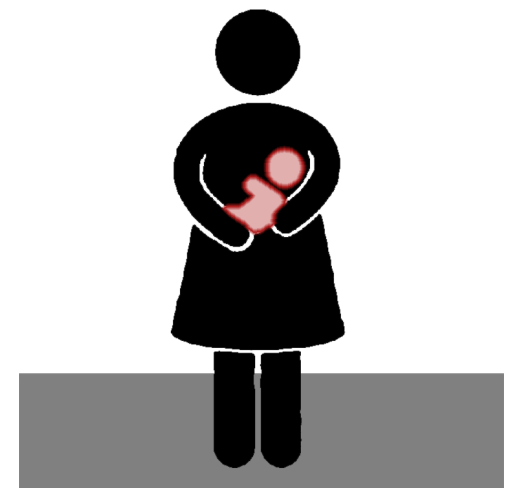
Dermal Absorption

Absorption of toxics through oils in the skin and hair follicles



Placental Transfer

Chemical compounds are able to pass through the placental membrane, transferring hazardous toxics to the developing fetus.²



Breastfeeding

Maternal transfer of toxics to infants through breast milk

1. *Go Green Rating Scale for Early Childhood Settings (print)* Phil Boise, Redleaf Press

2. [EPA's Exposure Assessment Tools by Chemical Classes](#)

Processes that Lead to Exposure

While building materials usually appear stable or unchanging on the surface, they are actually undergoing imperceptibly small, gradual transformations. These processes release particles into the environment where children have potential to become exposed, turning the chemicals that were once thought to be contained within the products into significant health hazards.



Volatilization

Volatilization (off-gassing) is the transition of a material from the solid state into a gas. When chemicals become airborne, they pose a much greater risk of being inhaled or ingested. Chemicals more prone to vaporization are known as volatile organic compounds, or VOCs.



Degradation

Degradation includes all manner of physical and chemical breakdown such as abrasion, photo-degradation, and hydrolysis, which release particles into dust, air, and water.



Leaching

A material's capability to dissolve in liquid is known as leaching. Most often evident in the dissolving of plumbing components, the resulting process can release contaminants into water supplies, oils, or any soluble fluid.



Oxidation

Oxidation is seen in a variety of processes, such as burning and rusting, which release both energy and chemical byproducts.

***“Children are not simply little adults
when it comes to environmental exposures.”***

-World Health Organization



Children’s Heightened Vulnerabilities

Unique Behaviors that Increase Exposure

- Ground-level activities like crawling, sitting, and playing put children in greater proximity to surfaces where contaminants and irritants settle.¹
- With more frequent hand-to-mouth contact than any other age bracket, there is increased risk for these toxins being consumed.²

Immature Metabolism

- “An infant in the first year of life eats two-and-a-half times as many calories, drinks five times as much water, and breathes three times as much air per pound of body weight compared to an adult.”³
- They also have higher skin-to-lung and skin-to-body weight ratios.²
- However, their metabolisms have not yet fully developed to process and break down toxics as effectively as those of adults.³

Rapid Growth and Development

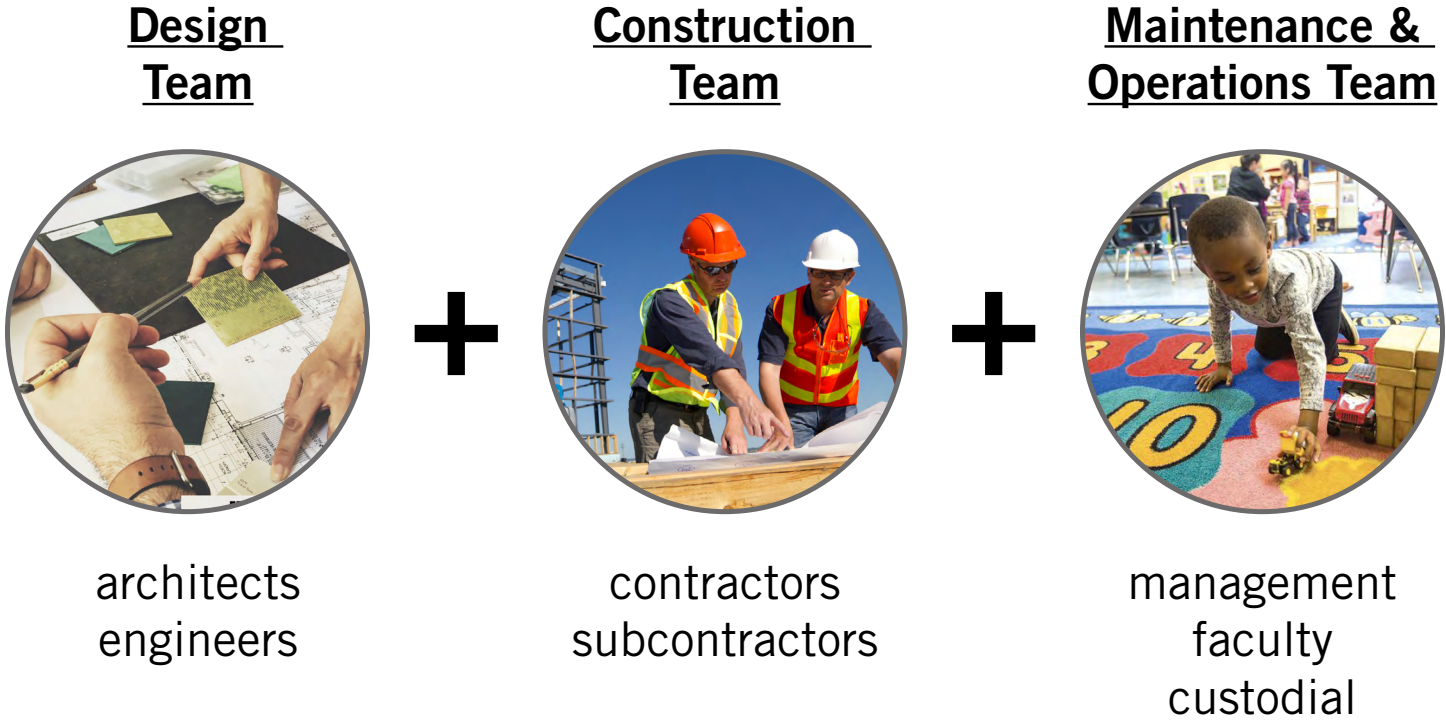
- This exposure comes at a critical point in children’s cognitive and physical development
- On average, an infant doubles its weight by six months of age, and triples by one year³, with 90% of their brain then developing in the first four years of life.⁴
- Children also typically have more years left to live, which gives them more time for toxins to accumulate and exposures to develop into chronic, long-term diseases.²

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1. [*Go Green Rating Scale for Early Childhood Settings \(print\) Phil Boise, Redleaf Press*](#)
 2. [*New York State’s Children and the Environment*](#)
 3. [*Reducing Environmental Exposures in Child Care Facilities*](#)
 4. [*Early Experiences Shape the Brain*](#)

Elevating the Standards for Children's Health



The Critical Need for Collaboration



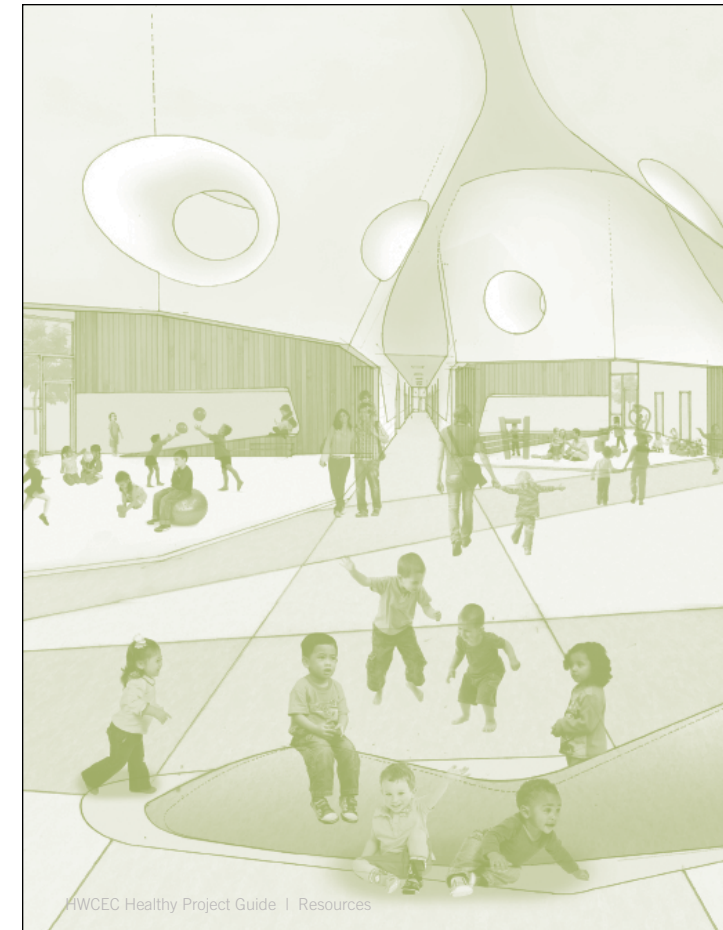
“It Takes a Village to Raise a Child”

The significance of children’s health vulnerabilities presents both a challenge and opportunity for the HWCEC-ECIC, as it requires open collaboration and heightened caution throughout all stages of the project. This preparation begins during initial phases of design, and is critical to maintain through construction and in the long-term use and operation of the building. However, with persistent dedication we can create a center that not only improves health conditions for children and faculty on a daily basis, but also becomes a model for healthier education centers across the state, and beyond.

Designing Healthier Environments

Creating a healthier space for children first begins at the design and planning stages. The design team's primary roles include the following:

- Identifying significant points of impact
- Evaluating products and materials
- Designing for indoor environment and air quality
- Anticipating use and maintenance
- Specifying product options and performance requirements
- Construction oversight and communication



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**Healthy Design Strategies
Supplement**

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More information and tools for implementing these strategies can be found in the forthcoming supplemental guide, *Healthy Design Strategies*.

Building Healthier Environments

The construction team then plays a pivotal role in carrying out the health initiatives set forth in the design stage, and in managing environmental conditions throughout the duration of the project.

Their responsibilities include:

- Commissioning processes, coordinating design initiatives and performance verification
- Scheduling timeline and order of operations for children's health sensitivities
- Site management and protection
- Building material sourcing, handling, and documentation
- Air quality management
- Preparing for occupancy



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**Healthy Construction Strategies
Supplement**

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More information and tools for implementing these strategies can be found in the forthcoming supplemental guide, Healthy Construction Strategies.

Maintaining Healthier Environments

Maintaining a healthy environment then becomes an ongoing task throughout the life of the building. From classroom furnishings, to art supplies, to cleaning products, all materials should continue being evaluated for their affect on children's health. The maintenance and operations team thus has the continuing responsibilities including:

- Management, coordination and training of project health initiatives
- Evaluation and screening of furnishings and supplies
- Custodial practices for maintaining clean and sanitary environments without the use of toxic chemicals
- Maintaining building systems for improved air quality and environmental conditions



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**Healthy Operation and
Maintenance Strategies
Supplement**

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More information and tools for implementing these strategies can be found in the forthcoming supplemental guide, Healthy Operation and Maintenance Strategies.

Elevating the Standards for Children’s Health



“It’s time to build an extraordinary place to support the social, emotional, physical, and cognitive development of young children.”

Resources



Children's Health Reports and Literature

Local Health Statistics:

[2013 Arkansas Baby Facts](#), Zero To Three

[ADHD by the Numbers: Facts, Statistics, and You](#), Kimberly Holland, Healthline

[America's Health Rankings: Arkansas](#), United Health Foundation

[Arkansas's Big Health Problems and How We Plan to Solve Them](#), Arkansas Department of Health, 2013

[Benton County Health Profile](#), Health Statistics Branch, Arkansas Department of Health, 2010

[The Burden of Asthma in Arkansas](#), Arkansas Department of Health, 2011

[Early Experiences Shape the Brain](#), Understand the Science

[Geographic Health Disparities in Arkansas](#), University of Arkansas for Medical Sciences, 2010

[Healthy Childcare...Healthy Kids, Children's Environmental Health Initiative](#), Quinyatta P. Mumford, MPH, CHES, Arkansas Department of Health

[The State of Children's Health in Arkansas](#), The Natural Wonders Partnership Council (NWPC)

[Tracking Autism Spectrum Disorder and Other Developmental Disabilities in Arkansas](#), Center for Disease Control (CDC)

Studies and Resources for Environmental Health:

[The Children's Environmental Health Network \(CEHN\)](#)

[Environmental Health Topics](#), National Institute of Environmental Health Sciences (NIH)

[Exposure Assessment Tools by Chemical Classes](#), US Environmental Protection Agency (EPA)

[Full Disclosure Required: A Strategy to Prevent Asthma Through Building Product Selection](#), Healthy Building Network

Go Green Rating Scale for Early Childhood Settings (print) Phil Boise, Redleaf Press

[Healthy Babies Bright Futures](#)

[Healthy Environments: A Compilation of Substances Linked to Asthma](#), Perkins+Will

[Managing Asthma in the School Environment](#), EPA, 2010

[New York State's Children and the Environment](#), Children's Environmental Health Center, Icahn School of Medicine at Mount Sinai, 2013

[NIEHS/EPA Children's Environmental Health and Disease Prevention Research Centers: Protecting Children's Health for a Lifetime](#), EPA + NIH

[Precautionary List: Perkins + Will](#)

[Reducing Environmental Exposures in Child Care Facilities](#), Environmental Law Institute, 2015

[Six Classes \(Chemicals of Concern\)](#)

[Sudden Infant Death Syndrome and Air Pollution](#), National SIDS/Infant Death Resource Center

[Study Suggests Association between Autism and BPA Plasticizer](#), Autism Speaks

[Toxic Chemicals in Products and Building Materials Purchased by New York Schools and Government Agencies](#), Center for Health, Environment & TOXMAP, NIH

[Transparency Tools & Programs to Help You](#), Wendy Vittori, Mark Rossi, Greg Norris, Jay Bolus, Suzanne Drake, Living Product Expo, 2015

[Walmart 2016 Global Responsibility Report](#)

Industry Guides and Product Evaluation Tools



[Better Building Materials: Understanding Human Health and Environmental Attributes](#), US Green Building Council



[WELL Building Standard® v1](#), International WELL Building Institute, Delos Living LLC, May 2016



[Cradle to Cradle Certified Product Standard Version 3.0](#), McDonough Braungart Design Chemistry, LLC,



[Declare](#), The International Living Future Institute



[The Collaborative for High Performance Schools \(CHPS\)](#)



[Pharos](#)



[Quartz Database for Common Building Products](#)



[GreenScreen for Safer Chemicals](#)



[Health Product Declaration Collaborative](#)



[BuildingGreen](#)

Team Publications and Information



[Helen R. Walton Children's Center: Advocacy Press Release: Helen R. Walton Children's Enrichment Center Finalizes Design Team for New Facility](#)



[The Early Childhood Initiatives Center \(ECIC\) Summary and Statistics](#)



[LTL Architects](#)



[The Healthy Materials Lab](#)