

2012

Seventh Biennial Scientific Symposium

How School Environments Affect
the Health and Educational
Performance of Students



Program Syllabus



Dell Children's Medical Center of Central Texas
Austin, Texas

Thursday, October 25, 2012

1:30 Keynote Speaker: A Review of the Principles and Empirics of the Environmental Health Risks to Children

David E. Adelman, JD, PhD,
Associate Professor of Law, Harry Reasoner Regents Chair in Law, at the
School of Law, The University of Texas at Austin.

The exposure of children to toxic substances has figured prominently in efforts to pass new laws governing the commercial sale and uses of toxic substances since at least the 1960s. Along with the publication of *Silent Spring* (which just marked its fiftieth anniversary) in 1962, childhood exposures to strontium-90 from nuclear testing and to lead from automobile emissions were instrumental in drawing public attention to the risks from environmental toxins and to environmental problems generally in the decade leading up to the major environmental reforms of the 1970s. The resulting advocacy culminated in the rewriting of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in 1972 and the passage of the Toxic Substances Control Act in 1976. It has also led to the passage of other laws that incorporate special protections for children, most notably the Food Quality Protection Act of 1996.

The importance of childhood exposures to toxics regulation follows from their political salience (e.g., strontium-90 in breast milk, high lead levels in children's teeth) and the distinctive risks to children from toxic exposures. It has long been appreciated that children are more vulnerable to environmental toxins than adults. This stems from the fact that they are still developing, their bodies are smaller (which means that in relative terms they ingest and breathe more chemicals

than adults), and their inquisitive behavior and playfulness are associated with heightened exposures. Children in low-income and minority communities may also be exposed to elevated levels of pollutants in their communities. These factors—political, physical, behavioral, and socioeconomic—have significantly impacted the evolution and substance of the law.

This talk will survey toxics regulation in the United States as they pertain to children. My objective will be to provide a sense of the evolution of the U.S. laws and to comment on their likely direction over the coming years. Despite the fact that many of the most dramatic environmental disasters have involved toxic substances of one form or another (e.g., Love Canal, Exxon Valdez, Bhopal), U.S. regulation of toxic substances is criticized by a broad cross section of stakeholders and experts as being inadequate. I will discuss some of the reasons for this lag, as well as point out the areas, particularly clean air regulation, in which the U.S. efforts have been quite effective. Overall, the picture is mixed and the likelihood in the near-term of major reforms—including those that might incorporate a precautionary approach—is low, but interesting innovations are occurring, most notably implementation of a recent toxics law (REACH) in the European Union, that could significantly affect U.S. policies.

OBJECTIVES:

- Examine inequities in exposures of minority and low-income children in the U.S. to environmental pollutants.
- Review the current state of U.S. laws regulating exposures to toxic substances (e.g., the Toxic Substances Control Act, Clean Air Act), as well as to compare U.S. laws to recent developments in the European Union under Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) act.
- Provide an overview of the major sources of air pollutants and primary risk drivers across the U.S., with a particular emphasis on geographic variations across the country and disparities between urban and rural settings.

3:15 Visualizing Healthy Schools: Identifying Assets and Needs, and Opportunities for Collaborative Change

Speaker 1: *Stephen Pont*, MD, MPH, Assistant Professor of Pediatrics, Dell Children’s Medical Center of Central Texas. Medical Director, Texas Center for the Prevention and Treatment of Childhood Obesity. Medical Director, Austin Independent School District Student Health Services. UT Southwestern, Austin, Department of Pediatrics.

Environmental exposures can affect the short and long-term health of children and negatively impact their educational success. Healthy students miss less days of school, learn better, and are more likely to reach their maximum potential. Schools must recognize the connection between the environment and neurological and developmental disabilities, asthma, obesity, diabetes and other related health concerns that can contribute learning and behavioral problems, poor academic performance, and increased absentee rates in schools.

Children are at greater risk and are likely more vulnerable to environmental exposures than adults because their bodies are still developing; they eat, drink, and breathe more in proportion to their body size compared to adults; and their typical behaviors expose them more to chemicals and organisms.

Children crawl on floors and up and over objects indoors and outside, they play in dirt, and they put their hands and fingers in their mouths, which exposes them to many natural and synthetic potential chemical toxins.

Since every school day, over 55 million children and 7 million adults, or approximately 20% of the total U.S. population and 98% of US children, spend their days inside school buildings and on school campuses, it is critical that the school environment be as safe and health-promoting as possible. To ensure that students achieve their maximum success, it is essential that school administrators and policymakers consider environmental exposure health risks to children when developing and adopting policies to maintain their buildings and grounds.



Speaker 2: *Tracy Diggs Lunoff*, MEd,
 Ms. Lunoff is Coordinator of Health Services, Austin ISD and District Liaison to the School Health Advisory Council.

Environmental exposures can affect the short and long-term health of children and negatively impact their educational success. Healthy students miss less days of school, learn better, and are more likely to reach their maximum potential.

Schools must recognize the connection between the environment and neurological and developmental disabilities, asthma, obesity, diabetes and other related health concerns that can contribute learning and behavioral problems, poor academic performance, and increased absentee rates in schools. In order to effectively address the issues related to environmental exposures and student health, the Austin Independent School District (AISD) takes a collaborative approach between Health Services, Housekeeping, and Facilities.

The collaboration focuses on recognizing, prevention, and management of environmental risk exposures to students and staff. The role of key stakeholders is crucial in the prevention of environmental health risks to children and the AISD School Health Advisory Council (SHAC), addresses and develops recommendations for the prevention of environmental health issues to students. The importance of data collection and monitoring of environmental risks to students is vital in the prevention of exposures to students and staff. Austin ISD Health Services utilizes and Environment of Care survey to assess district and campus prevention and management efforts.

Panel Objectives:

- Recognize the connection between the environment and neurological and developmental disabilities, asthma, obesity, diabetes and other related health concerns contributing to an increase in learning and behavioral problems, poor academic performance and increased absentee rates in schools.
- Summarize why school administrators and policymakers should consider environmental exposure health risks to children when developing and adopting policies to maintain facilities.
- Describe the collaborative approach Austin Independent School District (AISD) uses between Health Services, Housekeeping and the Facilities Department to recognize, prevent, and manage environmental risk exposures to students and staff.
- Relate the purpose, objectives and examples of initiatives sponsored by members of the Austin ISD Student Health Advisory Committee to address and prevent environmental health Issues to students.
- Summarize how Austin ISD Health Services uses an annual Environment of Care Survey to assess what campus principals have done to prevent and/or manage environmental risks to students and staff.
- Relate how the Austin Independent School District, Student Health Services used GIS mapping through a partnership with Children's Optimal Health to raise awareness about childhood obesity and why the Housing Authority of the City of Austin chose to conduct an academic, absenteeism, and fitness survey of AISD students.

Friday, October 26, 2012

9:00 Keynote Speaker: Children's Health—Where They Live, Learn, and Play

Shale L. Wong, MD, MSPH, Associate Professor of Pediatrics at the University of Colorado School of Medicine; Director of Medical Student Education in Pediatrics; Director of Mentored Scholarship and Co-Director of Leadership, Education, Advocacy, Development and Scholarship at the University of Colorado, Children's Medical Center.

Concerns around childhood obesity have been increasingly in the public spotlight for several years. After decades of battling this issue alone, health care providers have the wrap around support of community interventions and environmental policies that are beginning to succeed. Cross-sector approaches and collaboration are resulting in measurable change that shines hope on reversing our trends in obesity.

Still, there is an inherent tension between accountability of individual choice and environmental policy change. Success in decreasing and sustaining lower obesity rates will require both personal behavior and societal changes. Science shows that providing a healthier default could ease the burden on individual responsibility.

This presentation will discuss national initiatives and programs that address engagement at all stakeholder levels from the parent to teacher to policymaker. Highlighting successes in specific communities, Dr. Wong will discuss steps that have achieved measurable change and leveraged the power of policy at local, state and federal levels.

Growing evidence suggests that strong, far-reaching changes—those that make healthy foods available in schools and communities and integrate physical activity into people's daily lives—are working to reduce childhood obesity rates. More efforts are needed to implement these types of sweeping changes nationwide and to address the health disparities gap that exists among underserved communities and populations.

OBJECTIVES:

- Assess the balance between societal and governmental responsibilities when promoting healthy school environments.
- Recognize policy opportunities and approaches that educational institutions, government agencies, health organizations, public interest groups, elected officials, and the general public may consider to elevate children's environmental health among competing issues and resources.
- Describe how health initiatives and prevention programs in schools benefit from engagement of public-private partnerships.

10:00 Indoor Air Quality in Schools: Existing and Emerging Knowledge

Richard Corsi, PhD, PE, ECH Bantel Professor for Professional Practice.
Department of Civil, Architectural and Environmental Engineering, The
University of Texas at Austin

The impact of poor indoor air quality in U.S. schools was observed in the mid-19th century and was associated with poor ventilation and over-crowded classrooms. Ironically, 160+ years later our nation continues to grapple with some of the same factors and related symptoms in children. The importance of air quality inside of schools is underscored by the fact that most American children spend approximately two years inside of classrooms from grades K-12, more time than they spend in any other environment except for the home. Importantly, there is an increasing base of evidence from systematic studies that indicates associations between poor indoor quality and student absenteeism, diminished academic performance, and short-term illnesses.

Research related to indoor air quality in schools has increased substantially over the past decade. The most prevalent subject of peer-reviewed papers on indoor air quality in schools has been the effect of classroom ventilation on the health and performance of children. The presence of fungi in classrooms has also been extensively studied but limited by culture-dependent sampling and analysis methods that capture only a small fraction of microbial agents in air or on surfaces. Volatile organic compounds (VOCs) in classrooms have also been extensively studied and reported. Of some concern is that past research has been dominated by studies of European schools in northern climates, and more recently by studies of schools in Western Pacific Rim countries. Design, construction, maintenance, and environmental conditions in schools within these countries are not necessarily reflective of a majority of schools in the United States.

Four important conclusions can be drawn from past research related to indoor air quality in schools. First, there is no overwhelming and consistent pollutant-specific problem that occurs in all schools. Second, proper ventilation of classrooms is required to avoid a spectrum of adverse problems, and improperly-designed attempts to reduce classroom ventilation for purposes of energy savings can lead to many adverse consequences. Third, dampness in schools can lead to adverse health effects. And fourth, children themselves and the activities that they engage in are major sources of indoor air pollution, including airborne viruses, pathogenic bacteria, odors, VOCs, and more.

This presentation will include a summary of important pollutants and their sources in school environments, from cleaning products and deodorizers to electronic equipment and paint. The importance and numerous impacts of improper classroom ventilation will be described, as will the role of dampness and need for proper control of relative humidity. Emerging knowledge related to under-researched pollutants, e.g., endocrine disrupting compounds, and human-shed bacteria re-suspended by classroom activities will be discussed. Finally, the increasingly important role of indoor chemistry driven by ozone reactions with green cleaning products, many new building materials, fragrances, and even children's skin oils will be discussed.

The presentation will conclude with a series of suggestions for practical means to reduce the exposure of children to harmful pollutants in school environments, as well as a list of essential reading.

Objectives:

- Explain why indoor air quality in schools is important.
- Describe major indoor air pollutants in schools and their sources, including emerging pollutants and those that are often not given sufficient consideration in school environments.
- Explain the importance of several major factors on indoor air quality in schools, including proper ventilation and control of relative humidity.
- Describe children's exposure to harmful pollutants derived from indoor chemistry in schools, and important pollution sources that cause such chemistry (including children themselves and what they bring to school with them).
- Provide examples of how green products and building materials are not always healthy.
- Describe methods for reducing children's exposure to harmful pollutants in schools.
- Explain why administrators must consider environmental health risk exposures to children when planning, renovating and building the school facilities.

11:15 Improving Student Health and Academic Performance: A Model for Sound Policy and Proven Practice

Diane Rhodes, RRT, AE-C, RCP,
Director of the Department of Environmental Health, North East
Independent School District, San Antonio, TX

For some time school districts have been mandated to increase academic achievement of all students. Districts have traditionally committed significant time and financial resources to improving teacher preparation and instructional strategies in the classroom. While progress has been made in increasing student achievement for all students educators now realize that a student's quality of life and academic success are impacted by access to health care and awareness of chronic disease management.

These chronic disease issues can affect student's attendance and possibly their academic performance, yet traditionally they did not fall under the day-to-day responsibilities of a school district. According to Centers for Disease Control, *asthma is a leading chronic illness among children and adolescents in the United States. It is also one of the leading causes of school absenteeism. Additionally, low-income populations, minorities, and children living in inner cities experience more emergency department visits, hospitalizations, and deaths due to asthma than the general population.* In the state of Texas, school districts receive state revenue based on attendance, not enrollment. Given the current budget shortfall many school districts are facing and the increased efforts to 'close the gaps' in academic performance why is there not more attention to addressing the most common student health issue which directly impacts attendance?

North East Independent School District is home to more than 67,000 students across 67 campuses.

NEISD is considered an urban, diversified school district with growing needs in the economically disadvantaged areas of the district. In 2006 the North East Independent School District (NEISD) set a goal to increase student productivity by addressing the issues of student health. The Asthma Awareness Education Program was created to target its more than 8000 students with asthma. This program provides accessibility to proper disease management through innovative awareness education, medication policies, environmental best-practices, and symptom tracking mechanisms. The program additionally provides the foundation to providing a healthy learning environment for ALL students by improving indoor air quality thus increasing all students' capacity to learn.

An effective asthma program includes not only proper medication management and assessment of symptoms but also effective efforts in **environmental reduction strategies** of known triggers. The presentation will show how the Asthma Awareness Education Program has utilized the Environmental Protection Agency's Six-Key Drivers as its framework to build an asthma management program while incorporating the National Heart, Lung, and Blood Institute Expert Panel Review-3 Asthma Guidelines. The merging of these two frameworks has created a unique system that delivers a high quality asthma care program to the district stakeholders as well as the basis for the district's indoor air quality program.

Diane Rhodes Continued

Data drives change and the asthma program has led to systemic environmental policy changes and assessment standards. The goal of these environmental best-practices is to reduce the cumulative exposure of allergens, irritants, and infection to our students and staff; thus reducing the risk of reaching the **symptom threshold** of those individuals with asthma.

Effective pediatric asthma management can occur when all individuals in a child's life communicate and work together; child, parent, physician, AND school. By adopting this model the district accepted as part of its core mission the responsibility to help students/parents understand and control the disease and also to create an environment of its facilities that is healthy for all children.

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- Provide examples of how green products and building materials are not always healthy.
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- Explain why administrators must consider environmental health risk exposures to children when planning, renovating and building the school facilities.



12:45 **Becoming Change Agents for Improving Access to and Consumption of Healthy, Safe, and Affordable Food for Children and Families**

***Chef Ann Cooper*, Renegade Lunch Lady; Partner, Lunch Lessons, LLC; Director, Nutrition Services Boulder Valley School District; and Founder, Food Family Farming Foundation: The Lunch Box, Let's Move Salad Bars to Schools**

Lunch Lessons: Changing the way we feed our children discusses the challenges and potential successes of the symbiotic relationship between healthy food, healthy kids and a healthy planet People Planet Prosperity. Chef Cooper will share her insights and best practices on healthy school food as well as the challenges on making healthy school food for all of our children a reality. There are five basic challenges to healthy food in schools: food, finance, facilities, human resources and marketing; Chef Cooper will discuss how they are interrelated, various strategies for overcoming them and some success stories from the field. Her presentation will at once promote, educate and inspire you to: Do one thing for the health of our children.

Objectives:

- Reflect on why the prevalence of obesity is so high that it may reduce the life expectancy of today's generation of children and diminish the overall quality of their lives.
- Examine the relationship between food, politics and how seemingly unrelated economic, political and social issues play a significant role in hunger, childhood obesity and rising food prices.
- Explain how the Lunch Box – a web portal provides free and accessible tools, recipes and community connections to support school food reform.
- Relate why applying for a school salad bar is one of the fastest ways to create access to fresh food for all students purchasing a reimbursable meal.
- Access a sustainable model for schools nationwide to transition any processed food based K-12 school meal program to a whole foods environment where food is procured regionally and prepared from scratch.



1:45 Creating Comprehensive Model Coalitions and State Policies

Claire L. Barnett, MBA, Executive Director, Healthy Schools Network, and Coordinator, Coalition for Healthier Schools, Albany, NY

Attendees will enhance their knowledge about the intersection of school environments and growing children's health issues relating to indoor environmental exposures. Indoor exposures can be 100-1,000 times more intense than outdoor exposures; since Americans spend 90% of their time indoors, and schools are the places where children are routinely measured and tested, school environments play an important role in children's health and development. In general, the poorest schools have the worst conditions; however wealthier schools are not free from environmental exposures either. Indoor contaminants can affect students of any income, gender or ethnicity, and may affect children and staff with disabilities even more.

This presentation will address:

- Indoor contaminants that can affect children's health and the need to remove them from school settings
- How to design schools with child-sensitive standards in mind
- How to select green products to help maintain good IAQ
- How federal and state agencies and organizations can collaborate to ensure healthy school environments for children

It will also outline the specific guidelines, laws and regulations in place in Texas to protect children in schools. Attendees will also come to understand the resources available through the Healthy Schools/Healthy Kids Clearinghouse and the Coalition for Healthier Schools.

Friday

Objectives:

- Examine issues at the intersection of the school environment and the alarming increase of children enrolled in schools with neurological/developmental disabilities, asthma, obesity, and diabetes, the rise in learning and behavioral problems, increased absentee rates in schools and the recruitment, retention and productivity of school personnel.
- Describe the urgent need to implement policies for the removal of environmental contaminants from school environments and guidelines for purchasing housekeeping products.
- Relate to how architects, builders and school administrators can prevent health risks to children by incorporating child-sensitive standards for school design, construction, and siting for school facilities.
- Access model programs, resources and assistance for supporting healthy school environments through the Healthy Kids/Healthy Schools Clearinghouse.
- Discuss the need for cross-discipline actions between health professionals, academicians, the research community and parents of health-impacted children to leverage efforts to protect the health of students.
- Explain how the *Coalition for Healthier Schools* provides the platform and a forum for promoting environmental health at school with conference calls and annual meetings between local, state and national partner organizations.

2:45 Connecting the Science of Human Development and Architecture for Healthy Early-Learning Environments

Speaker 1: *Fernando A. Guerra*, MD, MPH, Former Director of Health, San Antonio Metropolitan Health District, Pediatrician and Public Health Consultant, Chair, Children's Environmental Health Institute Board of Directors, San Antonio, TX

How Exposure to Environmental Toxicants in Schools Contribute to Childhood Disease and Other Health Effects.

Pathways of exposure to toxicants are ubiquitous and include the air we breathe, the food we eat, the water we drink and the surfaces we touch. From conception on, environmental toxicants pose a threat to the health of a developing child.

The mechanisms of toxicity and disease production are varied. The 5 areas of outcome that have been designated by EPA/CDC as of most concern for children are birth defects, asthma, childhood cancer, developmental problems, and endocrine disruption.

The unique vulnerability of a child to environmental toxicants results from a multitude of factors, including biological factors such as growth and development. There are critical windows of development during which a child may be at greater risk to doses of specific toxicants that would be relatively safe at other developmental stages.

An increased intake of air, food and water relative to body size compared to an adult means that the child receives a relatively larger dose of any toxic chemicals in the air, food, or water. Exposure risks also result from behavioral factors such as playing outside or on sport fields. The simple fact that a child is closer to and spends more time on the ground results in increased exposure to fumes and dusts that tend to settle on the floor or ground.

Of the over 55 million students enrolled in American public and private schools nearly 5 million are found in the over 1,200 school districts in Texas. According to the U.S. Green Builder's Council - one in five Americans go to school every day--as students, teachers, staff, or administrators. Developing healthy schools that will positively affect a fifth of our population is a cause worth championing, particularly when the outcome will accrue to future generations. Our children deserve healthy schools.

Friday



Speaker 2: *Mike Wells*, AIA, NCARB, Principal at William Michael Wells, AIA Architect and serves as the Vice Chair of the CEHI Board of Directors, Canyon Lake, TX

With a legacy of church basements, leftover classrooms and overcrowded single family residences, environments for early childhood learning (aka daycare centers) have historically been afterthoughts. With recent and long overdue focus on the impact of the environment on child development, coupled with the late 20th century demographic shift that took moms to the workplace, has come a shocking realization: the early childhood learning environment can arguably be the single most important building in a young person's life, and leftover, carelessly constructed spaces are insufficient, in fact harmful. This session develops the dialog between the health science of early childhood and the art of architecture, working together for the appropriate development of children through better planning and design.

The considerations are many, including:

- indoor air quality and healthy food choices
- ready access to natural outdoor play areas
- green construction, recycling as a routine activity
- ways to reduce accidents without creating a padded cell environment
- bringing daylighting into every classroom
- connecting to the neighborhood
- creating a home-like environment that is a haven from chaos and stress of everyday urban life, such as second hand smoke or noisy traffic

The opportunities are too numerous to mention and too important to ignore-these are the opportunities of their lifetimes!

Objectives:

- Discuss the unique vulnerabilities of children that require healthy environments to support their physical and emotional growth and cognitive development.
- Relate the medical and scientific case for how exposures to toxins and other contaminants in the built environment can impact the health and development of children and why the precautionary principle should be applied to the design and maintenance of schools and child care centers.
- Describe the importance of healthy learning environments for young children, and how to plan and budget appropriately, for developing the right teams, and creating spaces that support both well-being and opportunities for learning.
- Identify how a learning environment does, or doesn't, support the healthy development of children and discuss the basic parameters around responsible design and sound planning for early learning environments, play areas, and related site development.

4:00 Student Health and Obesity Prevention Programs Backed by Science

Speaker 1: *Steven Kelder*, PhD, MPH,
Co-Director in the Michael & Susan Dell Center for Advancement of Healthy Living, Professor in the Division of Epidemiology, Beth Toby Grossman Professor in Spirituality and Healing at the UT School of Public Health, Austin Regional Campus.

Two-thirds of adults and one-third of children are overweight or obese. Left unchecked, obesity's effects on health, health care costs, and our productivity as a nation could become catastrophic. The staggering human toll of obesity-related chronic disease and disability, and an annual cost of \$190.2 billion for treating obesity-related illness, underscore the urgent need to strengthen prevention efforts in the United States.

Dr. Kelder will present findings from his recent experience serving on the Institute of Medicine panel titled "Accelerating Progress on Obesity Prevention." The panel issued a comprehensive report in May, 2012 which can be found (<http://www.iom.edu/acceleratingobesityprevention>).

The Robert Wood Johnson Foundation asked the IOM to identify catalysts that could speed progress in obesity prevention. The IOM evaluated ~800 prior obesity prevention strategies and identified recommendations to meet the following goals and accelerate progress. On their own, accomplishing any one of these might help speed up progress in preventing obesity, but together, their effects will be reinforced, amplified, and maximized.

Dr. Kelder, an expert in child and adolescent health, will address four specific strategies mentioned in the IOM report.

Strategy 2-1: Adopt policies and implement practices to reduce overconsumption of sugar-sweetened beverages.

Strategy 5-1: Require quality physical education and opportunities for physical activity in schools.

Strategy 5-2: Ensure strong nutritional standards for all foods and beverages sold or provided through schools.

Strategy 5-3: Ensure food literacy, including skill development, in schools.

Objectives:

- Recognize why the CATCH project, which is approved by the Texas Education Agency, has received state, national, and international recognition for being one of the most comprehensive and ambitious approaches to targeting physical education, food services, classroom curriculum, and families through a coordinated school health program.
- Examine why the largest randomized controlled trial based in elementary schools that has ever been conducted in the United States, CATCH, shows evidence of long-term program effects for decreasing fat consumption and increasing physical activity among children and adolescents.
- Describe how CATCH Eat Smart Cafeteria, a Nutrition Education Venue, provides children with tasty meals that are lower in fat and saturated fat, maintains required levels of essential nutrients, coordinate healthy nutrition messages with other areas of the school and guides the entire campus towards creating a healthy school environment.
- Relate how the CATCH project also includes a CATCH Child Health Consortium composed of school leaders, Parent-Teacher Association representatives, CATCH champions, business leaders, Parks and Recreation representatives and other influential stakeholders that will extend the reach of CATCH into the community.

Speaker 2: *Andrew E. Springer*, DrPH,
Assistant Professor of Health Promotion and Behavioral Sciences at the
Michael & Susan Dell Center for Healthy Living at the University of Texas
School of Public Health-Austin.

In Texas, just under one in four 4th grade students are obese, with higher rates of obesity found for African American and Hispanic children as well as children from lower socio-economic position. Physical activity and healthy eating are key behaviors for maintaining healthy weight in children that also confer a range of additional health benefits. Children's participation in regular physical activity is associated with improved cardiovascular and musculoskeletal health, better mental health and emotional well-being outcomes, and prevention of chronic diseases such as obesity, hypertension and type 2 diabetes, providing the basis for some to term physical activity as the "magic pill for health". Fruit and vegetable consumption is associated with a reduced risk of stroke and possibly other cardiovascular disease, a reduced risk of site-specific cancers, and a reduced risk of type 2 diabetes.

Despite the numerous health benefits associated with regular physical activity and fruit and vegetable consumption (FVC), local and national estimates indicate a large percentage of U.S. children are not meeting national health recommendations for these behaviors. Findings from a national study of children's physical activity based on accelerometry indicate that only 42% of U.S. children ages 6 to 11 years engaged in 60 minutes or more of moderate-to-vigorous physical activity on five or more days per week. Regarding FVC, roughly three quarters (74.1%) of children between the ages of 6 to 11 years do not meet Dietary Guidelines for Americans on fruit consumption, and 83.8% do not meet guidelines for vegetable consumption.

In promoting child wellness, the U.S. Centers for Disease Control and Prevention specifically recommends school and community partnerships to increase opportunities for children's physical activity, which hold the potential to maximize resources while providing complementary actions to support children's engagement in healthy behaviors. Marathon Kids® is an example of a community-based organization that builds partnerships with schools, community leaders and the private sector to promote running and walking and fruit and vegetable consumption in children in grades K through 5 and their families. Established in Austin, Texas in 1996, Marathon Kids now operates in 7 cities and 4 states throughout the United States and reaches over 200,000 children on an annual basis.

This presentation will describe the program model of Marathon Kids in relation to key environments that shape children's behavior (policy, information, and social environments) along with lessons learned and recommendations for promoting school and community partnerships around children's physical activity and healthy eating. Findings from a University of Texas School of Public Health quasi-experimental study on the effect of Marathon Kids on low-income elementary school children's physical activity, fruit and vegetable consumption, and related psycho-social factors (e.g., athletic identity self-concept) will also be discussed.

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