Children's Hospital of Philadelphia
PolicyLab

# How Neighborhood Environments Impact Diet and Obesity Risk Among Low-income Families

## Statement of Problem

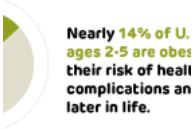
According to the Centers for Disease Control and Prevention, nearly 14% of U.S. children ages 2-5 are obese, increasing their risk of health complications and obesity later in life. Having an unhealthy diet is a key risk factor for developing obesity in childhood, and we know that parents play a significant role in establishing eating patterns in young children. However, encouraging and supporting nutritious eating among children—which can mean, for example, consuming a variety of fruits, vegetables, carbohydrates, and fats and limiting sugar-sweetened beverages—may be a challenge for some caregivers. In fact, parental stress can contribute to their children having poorer diet quality and obesity.

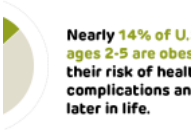
In addition, low-income families may experience disproportionately high levels of stress due to adverse neighborhood factors such as crime, which may lead to stress-related consumption of unhealthy foods. Alternatively, living in neighborhoods with supportive social environments may act as a barrier to the effects of stress and promote healthier eating patterns. A growing body of evidence also suggests that obesity tracks across generations, underscoring the importance of examining diet from an intergenerational perspective.

Identifying how social and environmental factors impact early childhood diet is essential to promoting child health and well-being. However, few studies have examined the link between neighborhood social factors (e.g., crime, perceived safety, collective efficacy) and diet, and to our knowledge, no prior studies have examined associations of the neighborhood social environment with dietary quality among low-income preschool-aged children from an intergenerational perspective.

## Description

### How Neighborhood Environments Impact Diet and Obesity Risk Among Low-income Families



Supporting nutritious eating among children can be challenging for caregivers. In addition, low-income families may experience higher levels of stress due to adverse neighborhood factors, which may lead to stress-related consumption of unhealthy food.

Dr. Mayne and her team will conduct this preliminary study over a two-year period to examine and evaluate associations between neighborhood social environments and diet quality among low-income families. They will enlist up to 200 Medicaid-enrolled children ages 2-4 years old and their mother/female guardian from urban primary care practices within Children's Hospital of Philadelphia's network. The team will collect data from caregivers on parent and child diet, perceived neighborhood characteristics, maternal stress, and parent and child socio-demographics through an in-person, self-administered survey. After data is collected, the researchers will examine the distribution of parent and child dietary measures alongside neighborhood characteristics.

## Next Steps

Given strong evidence for obesity risk across generations and the importance of intervening early in childhood, exploring and identifying social and environmental effects on a young child's diet is essential to promoting child health and well-being. The results of this study will address a literature gap on how the neighborhood social environment influences diet among low-income families, a population at increased risk of obesity development. This study may also provide evidence for future studies that will lead to high-quality, effective obesity prevention strategies on a multi-level perspective.

*This project page was last updated in February 2020.*

## Suggested Citation

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## PolicyLab Leads

### Stephanie Mayne PhD, MHS

#### Faculty Member

Stephanie Mayne (she/her) is a faculty member at PolicyLab at Children's Hospital of Philadelphia (CHOP), the associate director of Clinical Epidemiology at Clinical Futures at CHOP, and an assistant professor of pediatrics at CHOP and the University of Pennsylvania. Her research focuses on the impact of

environmental factors, including home and neighborhood factors on child health and well-being, with a particular focus on health behaviors related to future cardiovascular risk (e.g. sleep, diet). Her recent work focuses on incorporating mobile health techniques, such as GPS tracking and ecological momentary assessment, to understand more granular, time-varying environmental exposures and their health impacts.

Dr. Mayne received her PhD in Epidemiology from Drexel University and completed a postdoctoral training program in cardiovascular disease epidemiology at Northwestern University.

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**Team**

# Alexander Fiks
# MD, MSCE

### Faculty Member

Alex Fiks is a faculty member at PolicyLab at Children's Hospital of Philadelphia (CHOP), an urban primary care pediatrician at CHOP, director of Clinical Futures at CHOP and an associate professor of pediatrics at the Perelman School of Medicine at the University of Pennsylvania. He is also the director of the American Academy of Pediatrics (AAP) Pediatric Research in Office Settings (PROS), a national research network, medical director for the Pediatric Research Consortium (PeRC), CHOP's practice-based research network and co-director of the Possibilities Project, an initiative to innovate primary care delivery. Additionally, Dr. Fiks is a founding member of the hospital's Department of Biomedical and Health Informatics.

Board certified in clinical informatics, Dr. Fiks' research is aimed at improving outcomes for ambulatory pediatric patients through practice-based research with a focus on improving health and health care decision-making through health information technology. To achieve these goals, much of Dr. Fiks' research is focused on fostering shared decision making between clinicians and families, especially in the setting of behavioral health conditions. He is also especially interested in how electronic health record data may best be used to improve primary care, medication use and child health more broadly. As Director of AAP PROS, Dr. Fiks has been involved in building the Collaborative Electronic Reporting for Comparative Effectiveness Research ($CER^2$), an electronic health record database designed to support pharmacoepidemiologic and other comparative effectiveness studies that currently includes >2 million U.S. children from across multiple health systems.

Dr. Fiks received his medical degree from Harvard University, and received a Master's of Science in Clinical Epidemiology (MSCE) degree from the University of Pennsylvania. He has received additional training in clinical

informatics.

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## Senbagam Virudachalam
## MD, MSHP

### Faculty Member

Senbagam Virudachalam is a faculty member at PolicyLab, the Division of General Pediatrics and Clinical Futures at Children's Hospital of Philadelphia (CHOP). She is also an assistant professor of pediatrics at the University of Pennsylvania, a primary care pediatrician at CHOP and serves as the faculty lead for PolicyLab's Family & Community Health Portfolio. Dr. Virudachalam's research focuses on food justice, advancing equity in diet quality and health outcomes for all children. She studies cross-sector approaches to ensure that all children have stable access to healthy food environments at home and in their communities, enabling them to grow into healthy adults. Dr. Virudachalam has extensive experience conducting community-engaged research, especially with regard to the evaluation of Home Plate, a food literacy and cooking skills intervention for low-income parents that she developed in close partnership with Early Head Start. Dr. Virudachalam serves as the scientific director of culinary medicine at the Perelman School of Medicine and as the director of sustainable community health partnerships at the Community Health and Literacy Center in South Philadelphia.

Dr. Virudachalam holds a bachelor's degree from the University of California, Berkeley, where she graduated with honors in Molecular and Cell Biology and with distinction in general scholarship. She earned her medical degree from the Pennsylvania State University College of Medicine and completed her pediatric residency at UCSF Benioff Children's Hospital Oakland. She then completed an academic general pediatrics fellowship at CHOP and earned a Master of Science in Health Policy Research from the University of Pennsylvania.

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### Funders of Project

Academic Pediatric Association – Nutrition in Underserved Communities Young Investigator Award

## Project Contact

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## Related Tools & Publications

- Neighborhood Safety and Social Connections: What's the Potential Impact on Caregiver and Child Diet?
  Blog Post
  Apr 14, 2022
- Clustering of Unhealthy Behaviors in a Nationally Representative Sample of U.S. Children and Adolescents
  Article
  Jan 2020
- Associations of Neighborhood Safety and Collective Efficacy with Dietary Intake among Preschool-Aged Children and Mothers
  Article
  Oct 2021
- Association of Neighborhood Social Context and Perceived Stress among Mothers of Young Children
  Article
  Mar 2022
- Neighborhood Greenspace and Changes in Pediatric Obesity During COVID-19
  Article
  Aug 2022
- Associations Between Food Insecurity and Neighborhood Safety, Social Cohesion, Social Control, and Crime Among Mothers of Preschool-aged Children
  Article
  Aug 2022
- Measures of Neighborhood Opportunity and Adherence to Recommended Pediatric Primary Care
  Article
  Aug 2023
- Pediatric Obesity During COVID-19: The Role of Neighborhood Social Vulnerability and Collective Efficacy
  Article
  Dec 2023