

The New Jersey Child Health Study: A Research Brief

Community Environments

October 2019

 New Jersey
Child Health Study

Introduction

Many factors influence children's health behaviors and health outcomes. The Social Ecological Model (SEM) groups these factors into interactive layers, creating a framework for understanding their influence and for designing interventions to achieve positive change. The layers of influence in the SEM include individual, interpersonal, organizational, community, and policy factors (see figure). The **New Jersey Child Health Study (NJCHS)** was designed to examine how specific layers of the SEM, particularly food and physical activity environments in schools and communities, affect obesity outcomes in children.

In this brief, we focus on aspects of the **community** where children live and play. The community layer of the SEM includes the food and physical activity environments around children's homes; our research focuses on access to healthy food and opportunities for physical activity in our study communities. We measure access as the proximity of food and physical activity outlets to the child's residence, and we define community as the area within one mile of where the child lives. Throughout our analyses, we control for other known individual and family factors influencing access, including household income, educational level, and race/ethnicity.



While researchers and policy makers are increasingly aware of the importance of food and physical activity environments in promoting health, the NJCHS is designed to make a unique contribution as one of the few longitudinal studies investigating whether changes in opportunities for healthy eating and physical activity result in changes in children's health behaviors and health outcomes.

Results from the NJCHS suggest that community food and physical activity environments play a significant role in influencing children's health and health-related behaviors.

This brief summarizes key findings from the NJCHS thus far and proposes several actionable steps for developing policies and programs to improve the health and wellbeing of children.

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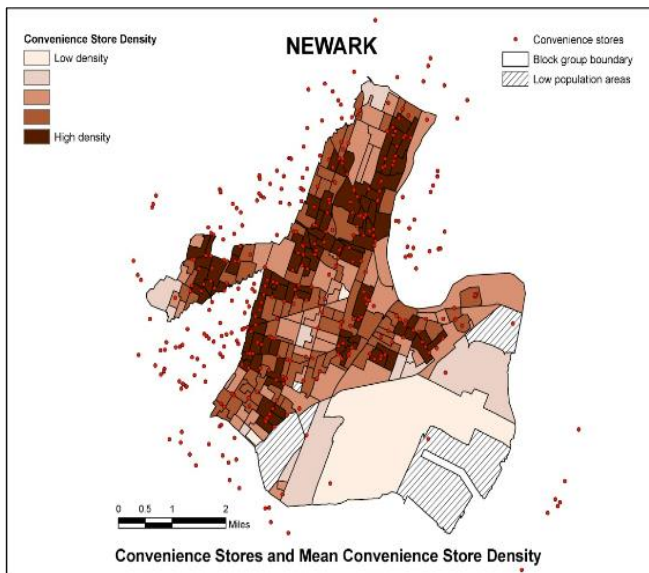
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Key Findings:

Community Food and Physical Activity Environments and Weight Outcomes and Behaviors

Most children (83%) in our four study-cities – Newark, Trenton, Camden, and New Brunswick, NJ -- have access to at least one convenience store within ¼-mile of their home, and on average, had access to more than three convenience stores within that distance.¹

Our study cites have an abundance of convenience stores whose presence is associated with unhealthy weight status.



High Density of Convenience Stores in Newark, NJ- One of Our 4 Study Cities



- The presence of a convenience store within ¼ mile of a child’s home nearly doubled the child’s odds of being overweight or obese compared to children who did not live in such close proximity. Access to a large park (1 acre or more) within ½ mile, in contrast, reduced the odds of being overweight or obese by 60%.¹ While these associations have been evident in our analyses at one point in time, we are currently examining whether these relationships hold over time. By establishing the impact of changes in the environment on changes in children’s weight status, we can determine whether there is a causal link between the two, which is critical to informing effective interventions.

Access to food outlets carrying relatively unhealthy inventory may increase a child’s risk for becoming overweight or obese, whereas access to parks appears to have a protective effect.

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- Children's healthy weight status was significantly associated with parents' positive perceptions of several relevant aspects their neighborhood: availability, affordability, and ease of access to healthy food; overall safety; and opportunities for physical activity.² It is important to note that these associations between parent perceptions and child weight status were independent of objective measures of the environment around children's homes.

Our findings suggest that, apart from addressing objectively measured access, parents' perceptions of quality and availability of foods and physical activity opportunities deserve attention in improving health behaviors and weight outcomes.

- Children who lived in neighborhoods with lower residential density and with fewer food and physical activity outlets consumed fewer sugar sweetened beverages and were less likely to be overweight or obese. However, children who lived in more densely populated neighborhoods with greater access to food and physical activity outlets had significantly higher likelihood of walking or biking to destinations.³

Features of the food and physical activity environments often interact in promoting health-related behaviors. Childhood obesity prevention interventions should consider both when designing evidence based programs and policies.

- Participation in the Supplemental Nutrition Assistance Program (SNAP) has been shown in prior research to be associated with poor dietary quality. We examined the possibility that the nature of the community food environment may contribute to this relationship. We found that adult SNAP participants were less likely to consume sugary beverages compared to their income eligible non-participating peers when they did not live within a ¼ mile of a convenience store. SNAP participants also consumed fruit less frequently compared to income eligible non-participants when they did not have a supermarket within ½ mile of their home.⁴

SNAP participation is associated with some unhealthy eating behaviors; this relationship holds only when participants live near stores offering predominantly unhealthy options or when they live farther from stores that offer a variety of healthy options



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Assessing the Healthfulness of the Food Environment

- Design and evaluation of interventions to improve the community food environment require measurement tools that are easy to use. Measurement is critical for identifying the threshold at which healthier food inventory influences weight status so that those levels can be incorporated in the design of interventions. The NJCHS developed a 7-item rapid assessment tool, the **Short-Form Corner Store Audit Tool (SCAT)**, which was found to be highly correlated with a previously validated but much lengthier assessment tool, the Nutrition Environment Measures Survey for Corner Stores (NEMS-CS).⁵

The SCAT facilitates rapid assessment of the healthfulness of inventory in corner stores without the cost and time requirements of conventional assessment tools, allowing for more efficient analysis of community food environments.



- In the four study cities, as in other parts of the country, a number of efforts are underway to upgrade and improve the availability and quality of healthy food sold in corner stores. We found that upgraded corner stores had significantly higher SCAT scores compared to non-upgraded stores. Similarly, stores that were certified vendors for the Special Supplemental Program for Women Infants and Children (WIC) had significantly higher SCAT scores compared to non-WIC vendors. Finally, non-upgraded stores that accepted SNAP, but not WIC benefits, scored significantly lower on the SCAT compared to non-SNAP vendors.⁶ We are currently examining the impact of access to different types of stores and the associated healthfulness of their inventory on children's weight status.

Federal and local policies and initiatives can improve the healthfulness of small corner stores. WIC vendors and stores participating in healthy corner store programs fared better than their non-participating counterparts. Stores participating in SNAP scored the lowest in offering healthy food options, suggesting opportunities for improvement in these stores.


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OR



- Cost is a common concern when trying to increase the purchase of healthful options in small corner stores. In our study-cities, the price of an unhealthy snack, such as a one-ounce bag of chips, was found to be similar to that of a ready-to-eat piece of fruit (e.g., one requiring no slicing).⁷

Contrary to common perceptions, a piece of fruit that can be eaten easily as a snack was not more expensive than a bag of chips. It follows that corner store initiatives can promote purchase of healthier items such as fresh fruit without increasing costs to consumers.

In order to promote healthy choices when eating out, a national policy was implemented in May 2018 requiring restaurants with 20 or more locations nationwide to post calorie labels on menus. Research has shown that consumers use this information to order healthier options. Our analysis found that fewer than 1 in 5 restaurants in the four study-cities meet the 20 outlet criterion. As a result, very few restaurants in our study communities are required to provide this useful information to their customers.

 <p>Cheeseburger 1/3 LB. BURGER 3.49 COMBO 5.49 CAL 650 UPTO 2260</p>	 <p>Original BURGER 2.99 COMBO 4.99 CAL 650 UPTO 1450</p>
 <p>Fiesta BURGER 3.99 COMBO 5.99 CAL 650 UPTO 1450</p>	 <p>Seeing Double Cheeseburger BURGER 2.99 COMBO 4.99 CAL 650 UPTO 1450</p>
 <p>Bay Burger BURGER 2.99 COMBO 4.99 CAL 650 UPTO 1450</p>	 <p>Old Style BURGER 3.99 COMBO 5.99 CAL 750 UPTO 1650</p>
 <p>Chicken Nuggets NUGGETS 3.99 COMBO 5.99 CAL 650 UPTO 1450</p>	 <p>The Burger BURGER 2.99 COMBO 4.99 CAL 650 UPTO 1450</p>

We also found that lower income neighborhoods, and neighborhoods with a higher proportion of Hispanic and non-Hispanic whites had the smallest proportion of restaurants that meet the criteria for requiring calorie menu labeling, creating disparities in application of this new federal law.⁸

Limited exposure to a beneficial policy, such as calorie menu labeling, can reduce its population level impact and create additional disparities.

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Policy Implications

A greater understanding of the role of specific elements of the built environment in promoting healthy weight status is important for developing effective policies and interventions. Below, we highlight evidence produced thus far by the NJCHS to develop effective interventions for promoting healthy behaviors and weight outcomes among children and adults.

The widespread presence of convenience stores in our four study-cities and our findings on their association with unhealthy weight status lend support for corner store initiatives. We find that stores participating in these initiatives offer a larger number of healthier options, suggesting the value of policies that provide incentives for corner stores to carry healthier inventory bringing such foods closer to homes. We are currently investigating whether these changes are substantial enough to result in improvements in children's health behaviors and health outcomes. Further, by employing more efficient measures, like the SCAT assessment, to assess the healthfulness of store inventory, we hope to identify a threshold at which beneficial outcomes can be achieved.

Our finding that the price of a healthful snack option (i.e. fruit) in a convenience store was not significantly different from a bag of chips suggests that small stores have the capacity to offer healthier foods at competitive prices. However, to affect consumer behavior, corner stores may need technical assistance in promoting the sale, affordability, and availability of such foods.

Findings on SNAP vendors, SNAP participation, and consumption of unhealthy foods suggest that USDA policies on stocking requirements were not sufficiently stringent to result in changes in the healthfulness of offerings in these stores. The USDA has recently instituted small changes in stocking requirements for SNAP certified stores, but it remains to be seen if such changes are substantial enough to improve healthy food offerings in these stores.

Our analysis of exposure to menu labeling resulting from new federal policies highlights the importance of addressing local conditions in assuring that desired outcomes are achieved. To be effective in our four study-cities, provisions need to be made for encouraging smaller restaurant chains (with fewer than 20 locations) to provide calorie menu labels. Local initiatives might offer technical assistance to help these restaurants voluntarily provide calorie information.

With regard to aspects of the physical activity environment as they relate to weight status and related behaviors, our research has identified several targets for interventions. For example, improving access to large parks (> 1 acre in size), and addressing parents' perceptions of the pleasantness and safety of neighborhoods for engaging in PA both show promise for reducing childhood obesity. Likewise, improving the walkability of neighborhoods may have similarly positive effects.



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Background

The NJCHS is a longitudinal study examining the relationship between food and physical activity environments and children's weight outcomes. Started in 2009, this research has been following a cohort of children and schools in four New Jersey cities: Camden, New Brunswick, Newark, and Trenton.

Data on key food and physical activity behaviors, family demographics, and child health and weight status are collected from over 2,200 families with children. Data are also collected from all public schools in the four study cities, including nurse-measured heights and weights, and details on school food and physical activity policies and practices.

This information is supplemented with the annual collection of data on changes to the food and physical activity environments in the surrounding communities, including opening and closing of stores and outlets, and changes to existing facilities, such as upgrades to convenience stores, parks, sidewalks, and trails.

These multi-level, multi-year data are then analyzed by a large team of experts at Arizona State University and Rutgers University to answer a variety of research and policy relevant questions.

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The NJCHS research team is committed to sharing key findings from the study with community stakeholders. Prior and future briefs in the series can be found at:

www.asufoodpolicy.org

and

www.cshp.rutgers.edu/content/childhood-obesity

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