

**Food & Health  
In Hamilton County, Ohio**

**Executive Summary**

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Hamilton County Public Health

WeTHRIVE!

This work is part of the Communities Putting Prevention to Work grant awarded to Hamilton County Public Health in 2010.

The full report can be found at [WatchUsThrive.org](http://WatchUsThrive.org) and [marigallagher.com](http://marigallagher.com).

# Background

- The WeTHRIVE! initiative utilizes evidence-based change strategies to impact chronic disease and obesity rates in Hamilton County, Ohio.
- The strategy within the scope of this study is Increasing Healthy Food Access.
- Research suggests that residents with better access to healthier food choices and limited access to less healthy food choices tend to have healthier diets and lower levels of obesity. [\[1\]](#)
- To analyze the relationship between neighborhood food environments and diet-related health outcomes in Hamilton County, the Nutrition Council of Greater Cincinnati contracted with Mari Gallagher Research & Consulting Group (MG) to conduct a food balance study.
- Food & Health in Hamilton County quantifies food access block-by-block throughout Hamilton County and compares it with diet-related health outcomes.
- The fieldwork and data collection for this project began in October 2010 and the analysis was completed in April of 2011.
- The report provides data that can help formulate action plans and prioritize strategies.

[\[1\]](#) Larson NI, Story MT, Nelson RC. Neighborhood Environments – Disparities in Access to Healthy Foods in the U.S. Am J Prev Med 2009;36 (1):74-81.

# Scope

## 1. Geographic focus: Hamilton County

- Population of 855,062. [\[2\]](#)
- Includes the City of Cincinnati and 47 additional political jurisdictions.
- Covers 407 square miles.

## 2. Data collection and analysis:

- Retail food outlets at the census block-level for all of Hamilton County and surrounding five-mile buffer zone.
- Chronic disease patterns in Hamilton County.
- Statistical correlations between the local food environment and public health.

[\[2\]](#) U.S. Census Bureau, 2009 Population Estimates. Hamilton County population is currently 802,374 (source: U.S. Census Bureau, 2010 Census).

# Methodology

1. The first task was to develop a comprehensive food retailer database for Hamilton County and a surrounding five-mile buffer zone around the borders of the County:

–1,282 total retailers, which includes the 851 retailers that accept U.S. Department of Agriculture (USDA) SNAP benefits (Supplemental Nutrition Assistance Program, formerly known as Food Stamps) and the 431 major fast food outlets which are not permitted to accept SNAP benefits.

–Any non-fast food retailers that do not accept SNAP benefits were excluded from the database.

–A buffer zone around the County is important because residents living close to the border might cross it to conduct some portion of their food shopping.

# Methodology

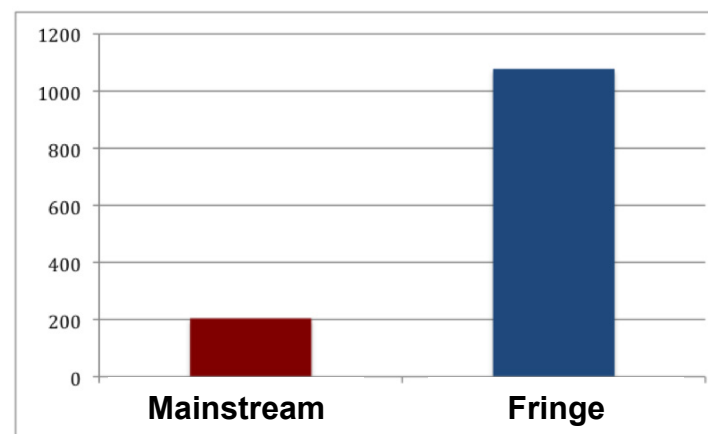
2. Next was the classification of food retailers as mainstream (n=204) or fringe (n=1,078):

–A mainstream food retailer is a store of any size that sells a variety of foods that can support a healthy diet on a regular basis (such as produce, bread, cereal, dairy, and lean and skinless meats).

–A fringe food retailer is a store or fast food outlet that has limited healthy food options; fresh and healthy food is not the primary line of business.

–Fringe retailers sell ready-made, fast, boxed, or canned food product, and can include convenience stores, gas stations, liquor stores, department stores, discount bakeries, and pharmacies.

**Mainstream and fringe retailers in Hamilton County and buffer zone in 2011**



# Methodology

## 3. SNAP retailer data and redemption patterns were analyzed:

### 2011 data:

–Of the 851 stores that accept SNAP benefits, 204 were classified as mainstream and 647 were classified as fringe. Of those fringe stores, 122 are gas stations, 98 are dollar stores, and 17 are bakeries. The remaining 410 are convenience stores, pharmacies, and other fringe food venues.

### 2006 to 2010 data:

–Stores that entered (n=308) and exited (n=116) the SNAP program were analyzed to understand program and market trends.

### 9-month period between 2009 and 2010:

–Accepting SNAP stores (n=571) during this period were analyzed to understand the types of stores in which residents redeemed SNAP benefits.

# Methodology

## 4. Food access and food balance patterns were analyzed:

–Researchers measured the distance from the center of every block to the nearest food venue by category (mainstream or fringe) and in some cases by type (such as dollar stores). Distance is measured as true walking distance.

–General food access concerns distance to mainstream food stores. The food balance scoring system (see below), also developed by MG, is the distance from the center of every block in the study area to the closest mainstream food venue divided by the distance to the closest fringe food venue.

MG Food Balance Scoring System	
Food Balance Score Description	Examples
Far above 1: High Score/Negative Outcome	Mainstream food venue is 1 mile away Fringe food venue is 0.5 mile away $1/0.5 = 2$
Around 1: Average Score/Neutral Outcome	Mainstream food venue is 1 mile away Fringe food venue is 1 mile away $1/1 = 1$
Far below 1: Low Score/Positive Outcome	Mainstream food venue is 0.5 mile away Fringe food venue is 1 mile away $0.5/1 = 0.5$

# Methodology

5. The statistical relationship between the local food environment and health outcomes was analyzed:

–This included diet-related deaths in total and separately: diabetes; cardiovascular disease; cancer; and alcohol-related deaths.

–Researchers also examined deaths from non-diet-related causes for internal validation.

–Specific conditions of the food environment were studied, each as a separate analysis, including:

- Distance to mainstream grocers
- Food balance (the mainstream to fringe ratio)
- Distance to all SNAP stores and specific SNAP stores, such as dollar stores
- Distance to major fast food restaurants

–The analysis controlled for other key factors such as income, race, education, and age.

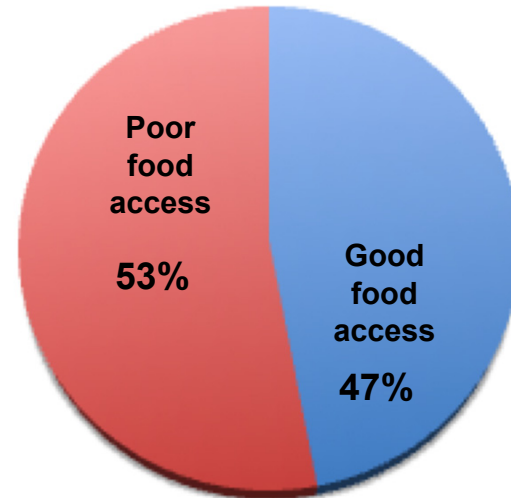
# Findings

## 1. Low healthy food access is prevalent:

–53% of Hamilton County residents (69% of Cincinnati residents and 37% of non-Cincinnati Hamilton County) live in areas with low healthy food access.

– For Cincinnati, this means that residents live 1.5 miles or more from a mainstream food venue.

–For the rest of Hamilton County, this means that residents live 2 miles or more from a mainstream food venue.



**More than half of Hamilton County residents live in areas with low healthy food access**

# Findings

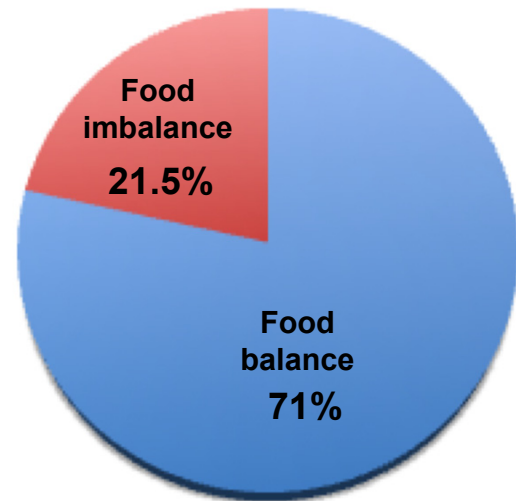
## 2. Food imbalance also exists in Hamilton County:

–21.5% of Hamilton County residents (29% of Cincinnati residents and 14% of non-Cincinnati Hamilton County) live in areas that have high food balance scores.

–These residents live closer to fringe food venues and further away from mainstream food retailers.

–This means Cincinnati residents must travel 3.5 times farther to reach a mainstream grocer as opposed to a fringe food venue.

–Residents in the remainder of Hamilton County must travel 3.75 times farther.



**Roughly 1 out of 5 residents in Hamilton County live in areas of food imbalance**

# Findings

## 3. Food access disparities:

–African Americans and households with lower incomes suffer disproportionately from low healthy food access and food imbalance.

–In Cincinnati, 41% of White residents vs. 82% of African American residents, and 73% of lower income households (less than \$25,000/year) vs. 64% of higher income households (over \$50,000/year) live in areas with low healthy food access (1.5 miles or more from a mainstream food venue).

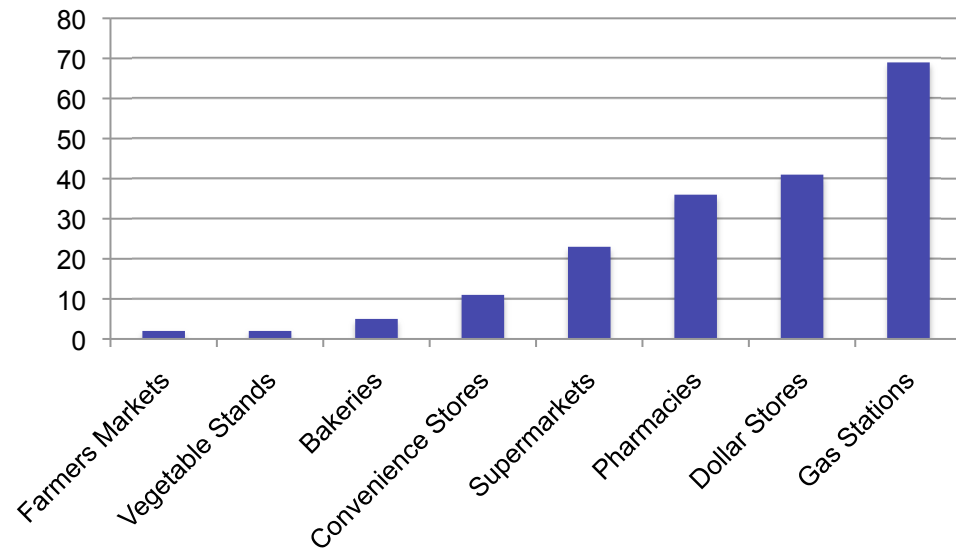
–In Non-Cincinnati Hamilton County, the disparity is largest for food imbalance: 13% of White residents vs. 27% of African American residents live in areas with high food balance scores.

# Findings

## 4. SNAP retailer access and purchasing patterns:

–Over the past four years, the number of SNAP retailers has increased 42% in Hamilton County. However, most are fringe. Examples include gas stations, dollar stores, and pharmacies.

SNAP retailer entrants in Hamilton County in 2010



–Over \$152 million dollars in SNAP benefits were redeemed in a nine-month period in Hamilton County between 2009-2010. While 69% of those benefits were redeemed in supermarkets, the analysis shows significant amounts of SNAP benefits are redeemed in outlets with limited healthy options, such as bakeries and convenience stores. Data was not available to determine the amounts redeemed in gas stations, dollar stores, and pharmacies.

# Findings

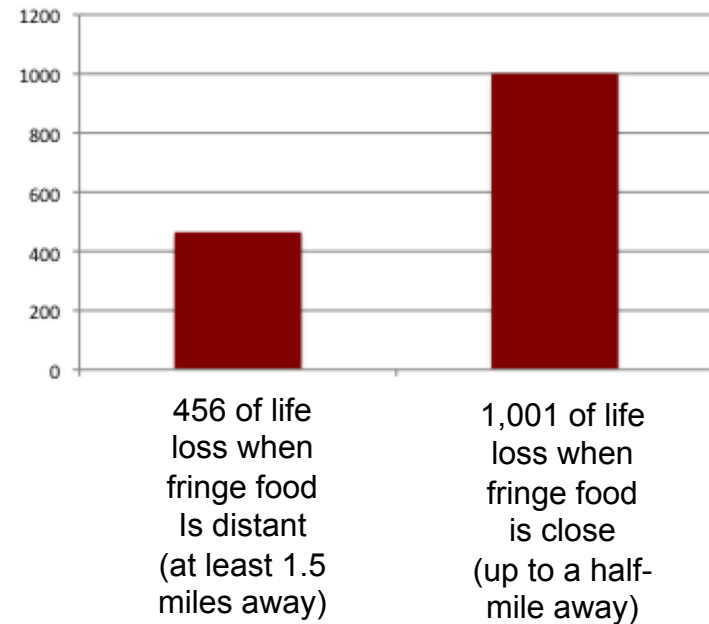
5. We found strong statistical relationships between the local food environment and health outcomes:

–For all of Hamilton County, closer distance to a fringe food venue correlates with more premature death from diet-related causes including diabetes, heart disease, and cancer.

–For example, as shown in the chart to the right, for Hamilton County Census tracts that are identical, an increase in fringe food access correlates with more diet-related deaths from all causes at nearly twice the rate.

–In Cincinnati, greater distance to a mainstream grocer correlates with more premature death from diabetes and cancer.

**Years of life loss from all diet-related causes in Hamilton County tracts**



# Conclusions

- The report provides actionable data and information that will help prioritize resources and develop effective strategies among diverse stakeholder groups.
- While many factors do contribute to public health, the report provides clear evidence that the local food environment is an important consideration, and that improvement is needed in many Hamilton County communities.
- Strategies should address ways to increase access to mainstream food providers and food balance so that the healthy food choice can be an easy choice.
- Over \$152 million dollars in SNAP benefits were redeemed in a recent nine-month period. SNAP is an important channel to reaching vulnerable families. Ensuring that SNAP stores sell healthy types of foods should also be a priority. This will not only support the diet and health of low-income families but all residents of Hamilton County.
- Other opportunities to maximize the intersection between public health and the built environment include public, private, and community partnerships as well as policies concerning transportation, land use decisions, zoning ordinances.
- More information is available in the full technical report.