DREXEL UNIVERSITY
Urban Health Collaborative
Dornsife School of Public Health

Patterns of Obesity and Cutting Meals in Philadelphia

DATA BRIEF
MAY 2018

While individual diet and physical activity behaviors impact obesity, community and institutional settings may shape behaviors and precursors of obesity. Food insecurity, the uncertain ability to acquire sufficient and nutritious foods in socially acceptable ways[1], may at first seem counter to obesity — a disease often characterized by an excess of food. However, these two issues often coexist.[2] Most importantly, food insecurity disproportionately affects those at the highest risk for obesity, including low-income households, women, and members of racial and ethnic minority groups.[3]

Regardless of mechanisms, epidemic levels of obesity and the harmful impacts of both obesity and food insecurity prompt action to identify and explore burden in populations.[4] This brief explores spatial, temporal, and population patterns of cutting meals among those who are obese. We hope this work enables the recognition of these coexisting problems and facilitates discussions of opportunities for intervention.

In Philadelphia, 23 percent of those who are obese report either cutting the size of or skipping a meal because there was not enough money in the budget for food.

KEY PATHWAYS

Figure 1 illustrates complex pathways linking obesity and food insecurity. Being food insecure can negatively impact mental health, creating stress, anxiety and depression.[5] Pathways that link obesity and food insecurity exist at multiple levels:

- Economic position can influence level of food insecurity through financial constraints.[6]
- Social and economic policies impact food pricing, availability and social acceptability.[4]
- Healthy food environments provide access to healthy choices at home, school, work sites, and restaurants, influencing food insecurity.[7]
- Food environments are linked to economic food choices – unhealthy foods are less expensive compared with healthy foods.[8-10]
- Financial and emotional pressures of food insecurity increase chronic stress[11], subsequently promoting obesity through changes in appetite, dietary preference and stress-induced metabolic hormones.[12]

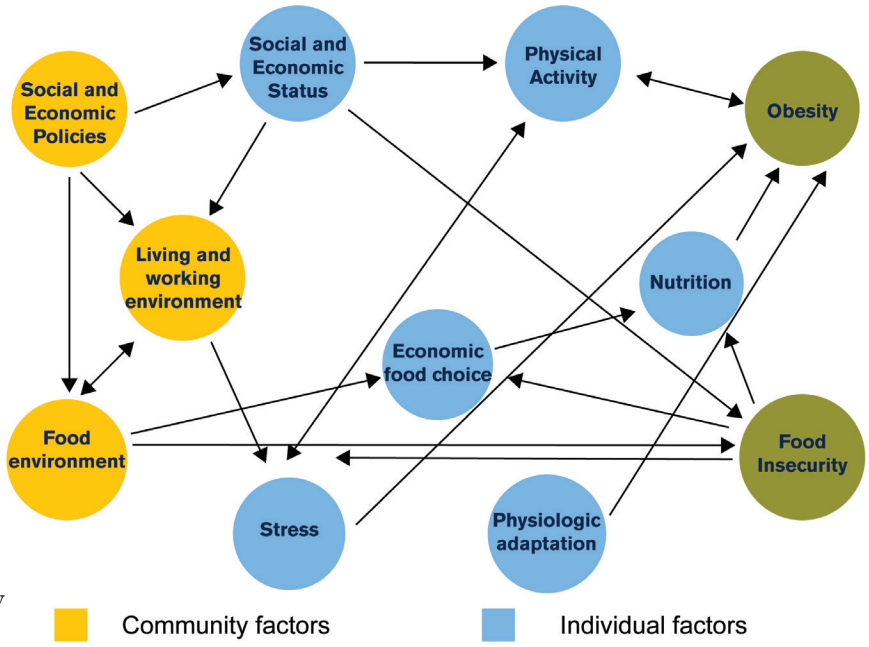


***FIGURE 1** (above): Pathways that link obesity and food insecurity*

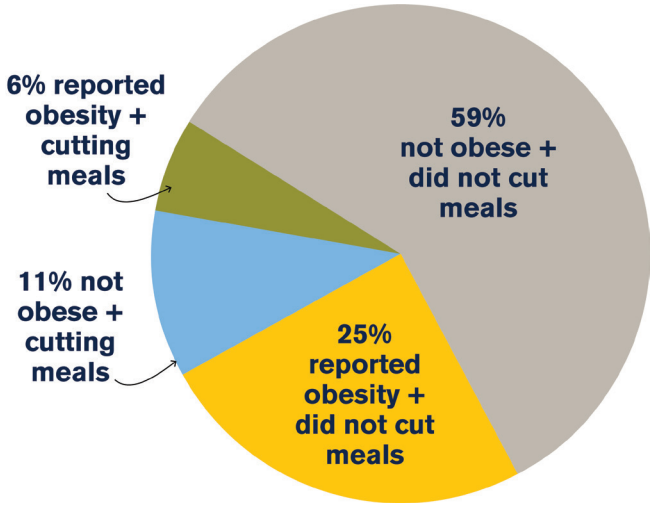


***FIGURE 2** (above): Burden of obesity and meal cutting in Philadelphia between 2008 - 2012*

MEASUREMENT OF FOOD INSECURITY

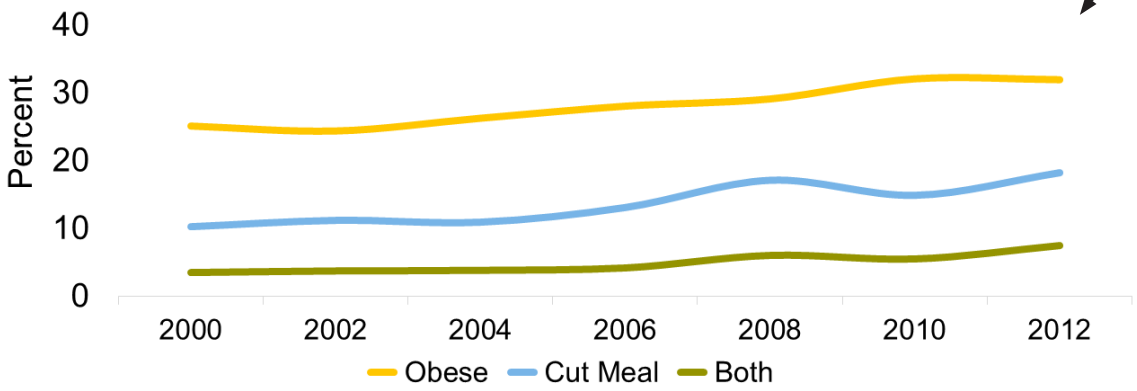
The Core Food Security questions include, among others, questions about food running out, and questions about cutting or skipping meals because there was not enough money for food.[13] Screening in a clinical setting can be done by asking patients to what extent they agree with two statements:[14]

1. *"We worried whether our food would run out before we got money to buy more."*
2. *"The food that we bought just didn't last, and we didn't have money to get more."*

Data in this brief are from the Southeastern Pennsylvania Household Health Survey (SPHHS) administered by the Public Health Management Corporation (PHMC). This brief uses the question on cutting the size of or skipping a meal because it was the sole measure included in the SPHHS across multiple years.

Increases Over Time

OBESITY AND CUTTING MEALS IN PHILADELPHIA BETWEEN 2000-2012



By 2012...

Thirty-two percent of Philadelphians were obese, 18 percent reported cutting a meal, and seven percent reported both.

***FIGURE 3** (above):* Philadelphians reporting obesity and cutting meals over time

Who Reports Both Obesity and Cutting Meals?

CHARACTERISTICS OF PHILADELPHIANS WHO REPORT BOTH OBESITY AND CUTTING A MEAL

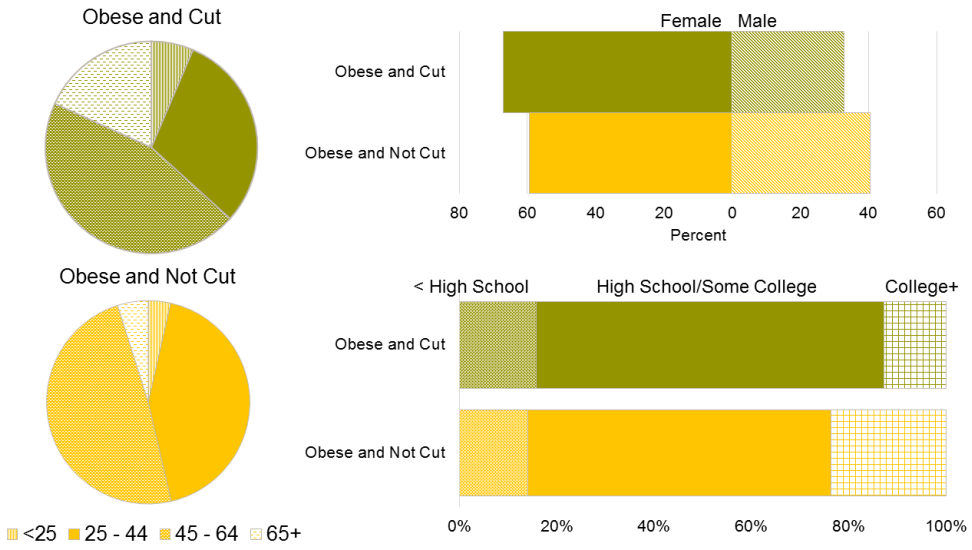


***FIGURE 4** (above):* Characteristics of Philadelphians by obesity and cut meal status PHMC 2008 - 2012

Philadelphians who report obesity and cutting a meal are more likely to identify as female. They are also more likely to be middle age, less educated and poor (**Figure 4**). Among those who report obesity, the proportion of persons of Hispanic origin was higher among those who cut meals than among those who don't (20 percent and 11 percent respectively).

Obesity and food insecurity are patterned by economic disadvantage.[15] More than 22 percent of Philadelphians are poor (below 100 percent of the Federal poverty level). Among those who are obese and report cutting meals, 38 percent are poor (**Figure 5**).

THE NEXT GENERATION

While only four percent of those who are obese and cut meals were under age 25, children are impacted by being in households burdened by these characteristics. Of those who were obese and reported cutting a meal, 44 percent had at least one child, and 15 percent had three or more children. Programs like the Women, Infants and Children (WIC) subsidy provide specific foods including whole grains, fruits and vegetables, and reduced fat milk to reduce the impact of food insecurity on obesity. However, only 11 percent of those who were obese and cut meals reported getting a WIC subsidy.

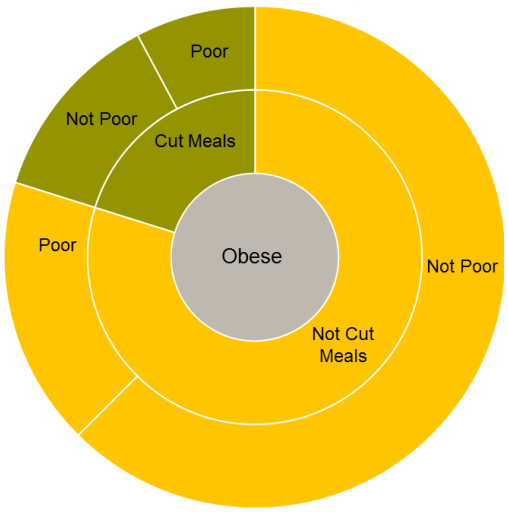
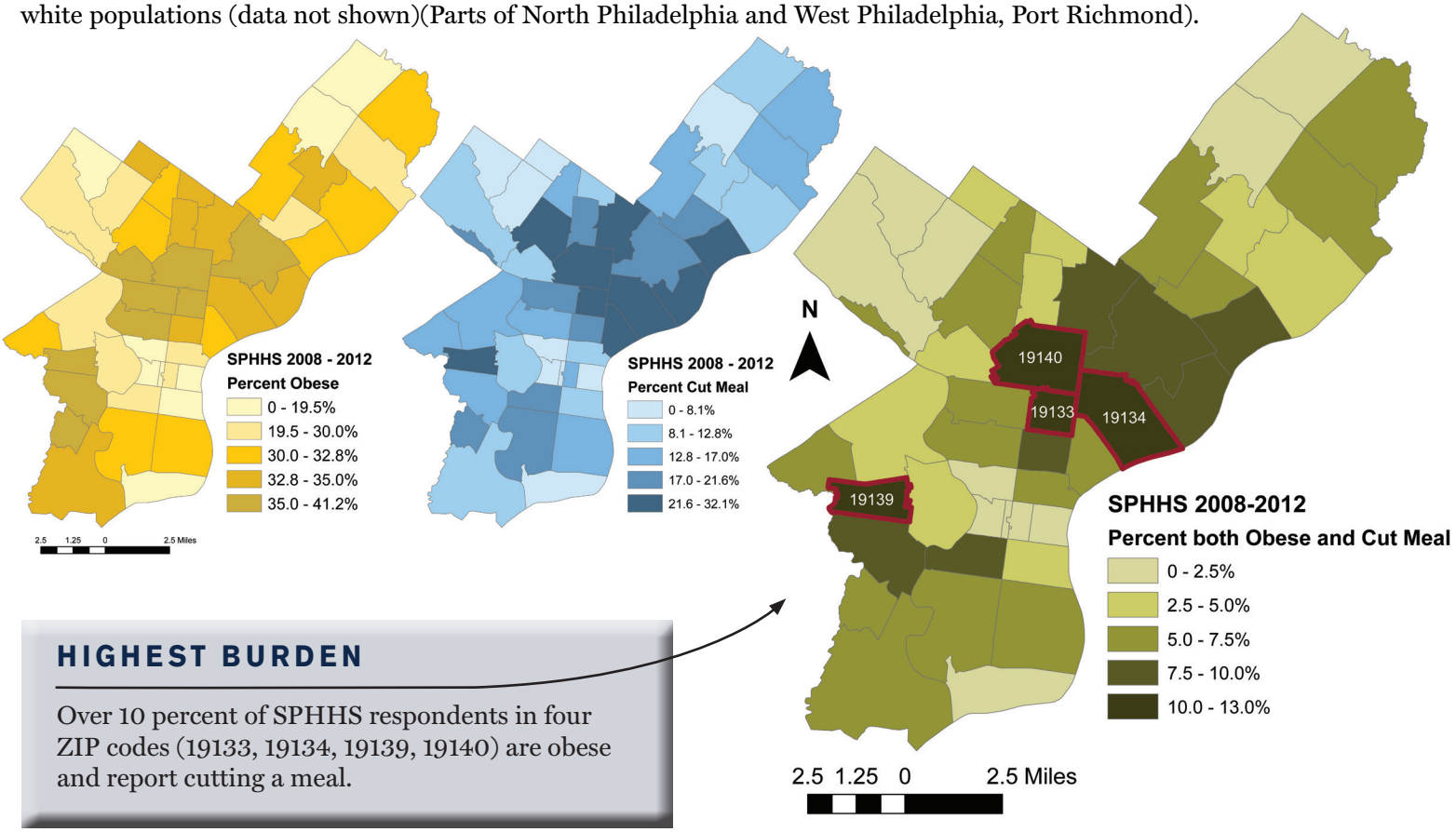


***FIGURE 5** (above):* Distribution of obese persons by poverty status and whether they report cutting meals

Which Philadelphia Neighborhoods Are Impacted?

PERCENTAGES OF ZIP CODES REPORTING OBESITY AND CUTTING MEALS 2008-2012

The maps below show ZIP codes with high obesity prevalence overlap with ZIP codes containing high numbers of people cutting meals. The greatest burden of obesity and cutting meals also occurs in ZIP codes with high poverty rates and large non-white populations (data not shown)(Parts of North Philadelphia and West Philadelphia, Port Richmond).



HIGHEST BURDEN

Over 10 percent of SPHHS respondents in four ZIP codes (19133, 19134, 19139, 19140) are obese and report cutting a meal.

Lower Perceived Access to Healthy Foods

NEIGHBORHOOD FOOD ENVIRONMENT AMONG OBESE PERSONS WHO REPORT CUTTING MEALS

As seen in **Figure 6**, obese persons who reported cutting and not cutting meals lived in neighborhoods with similar access to objectively measured healthy foods. However those who cut meals reported worse perceived access to quality groceries and fruits and vegetables than those who did not cut meals. This discrepancy may be due to lower quality and diversity of healthy foods sold at food retailers in lower income areas.

It is important to remember that neighborhood food environment does not only have to do with the number of retail food outlets, but also the availability, quality, and marketing of healthy food within stores.

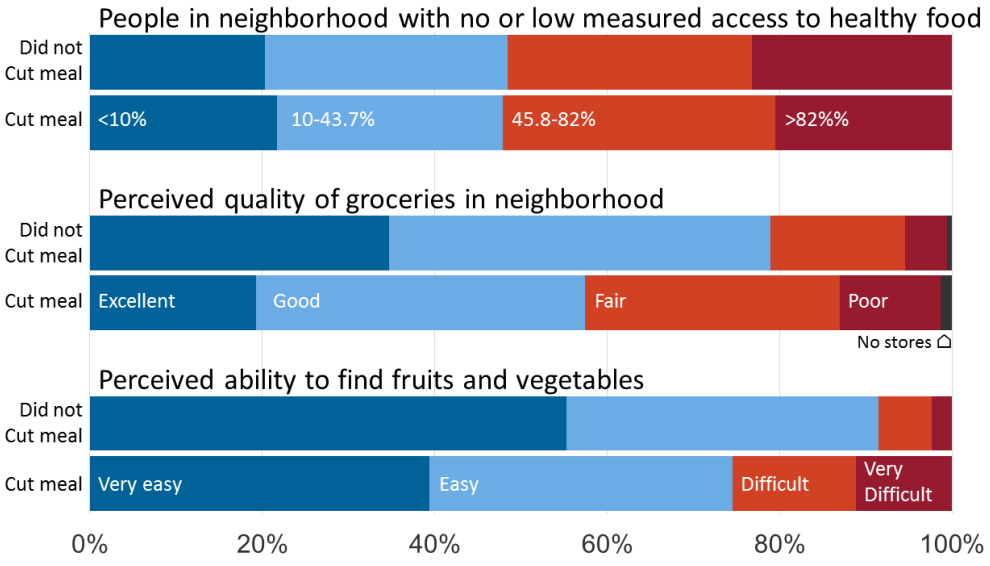


***FIGURE 6** (above):* Measured walkable access to healthy food, perceived quality, and perceived availability of fresh food within neighborhoods across obese individuals reporting cutting and not cutting meals. Walkable access to healthy food data were downloaded from opendataphilly.org (accessed 8/12/2016).

Health Care Utilization

PHILADELPHIANS WITH OBESITY WHO FOREGO HEALTH CARE DUE TO COSTS

People who are obese and cut meals may not be utilizing needed health services. As seen in **Figure 7**, 36 percent of Philadelphians who cut meals were sick but did not seek care due to cost, compared to 10 percent of those who did not cut meals. In addition to foregoing medicare care, 48 percent of Philadelphians with obesity who report cutting meals also reported not purchasing a prescription due to cost -- compared to 14 percent of those who did not report cutting meals.

HEALTH CARE AS AN OPPORTUNITY

Recommendations[16] include:

- Screening patients in the clinical setting for meal cutting;
- Training clinical staff;
- Connecting patients with local nutrition resources; and
- Documenting food insecurity for clinical tracking.

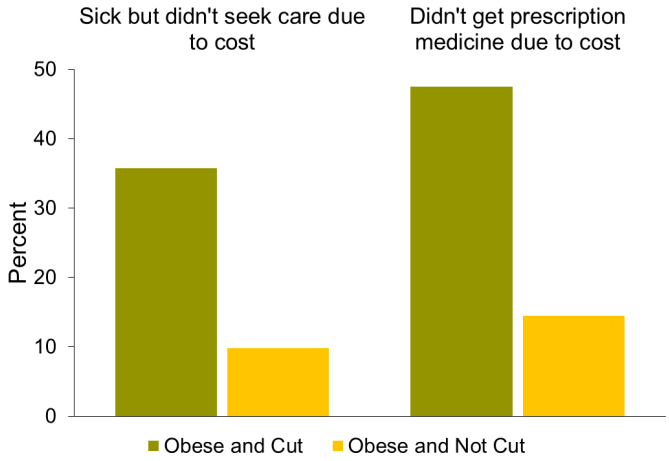


***FIGURE 7** (right):* Percent of obese respondents who report not utilizing services due to cost according to whether they cut meals or not

Opportunities for Intervention

POLICIES AND PROGRAMS TO ALLEVIATE OBESITY AND FOOD INSECURITY

Local, state and federal policies have the power to promote environments that influence health behaviors and food access. The following policies, programs and initiatives are just a few examples of efforts taken to address both food insecurity and obesity.

- **WIC** - In 2009, the WIC food package included whole grains, fruits and vegetables, and reduced fat milk for the first time.[2]
- **SNAP** - The SNAP program improves food security for low-income households and encourages healthy choices through marketing and education. In 2010, the Congress redirected SNAP nutrition education efforts to include a specific focus on obesity prevention.[1]
- **Healthy Corner Store Initiative** - The Healthy Corner Store Initiative, implemented by the Food Trust and the Philadelphia Department of Public Health, aims to increase availability and awareness of healthy foods in corner stores in Philadelphia.[3]
- **Philly Food Bucks** - Philly Food Bucks, also implemented by the Food Trust and the Philadelphia Department of Health, is a bonus incentive program offered to SNAP recipients at farmers markets. The participants receive a $2 coupon that can be spent on fruits and vegetables for every $5 spent at the farmers market.

References and Other Resources

For more information and a complete list of references, as well as additional resources on this topic and information on the Drexel Urban Health Collaborative, please visit us online at: drexel.edu/uhc/resources/briefs

CITATION

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The mission of the Drexel Urban Health Collaborative is to improve health in cities by increasing scientific knowledge and public awareness of urban health challenges and opportunities. We aim to identify and promote actions and policies that improve population health and reduce health inequities.

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ADDRESS: 3600 Market Street 7th Floor, Philadelphia, PA 19104
PHONE: 267.359.6273
WEB: drexel.edu/uhc
EMAIL: uhc@drexel.edu