

Food Environment Complexities and Health of Urban Populations

Shannon N. Zenk
University of Illinois at Chicago

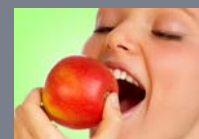
Food environment



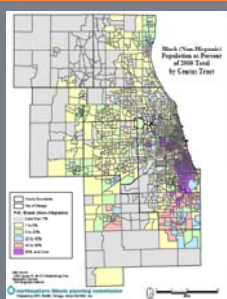
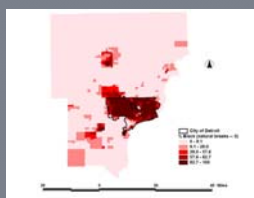
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Diet and body weight



Detroit and Chicago



You've got to go out in the suburbs now to get some decent food. And therefore, it's not available for us in this community. By the time you get to that store and get some fresh fruits and vegetables, you're going to pass about 30 fast food joints and about 100 liquor stores.

- Detroit resident
(Kieffer Ethn Dis 2004)

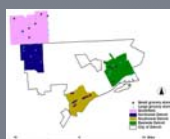
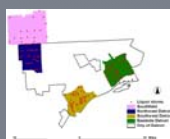


Extremely difficult...we don't have the choices that other communities have. It's like you choosing from fried chicken, fried fish, fried something. It's not really a variety of anything in this neighborhood and I which that it was like when you go up North you have so many varieties...like foods that you can choose from, and we should have that same thing.

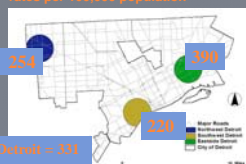
-Chicago resident



ES, NW, SW Detroit



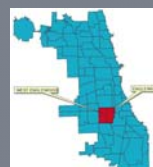
**Age-adjusted heart disease mortality rates per 100,000 population*



City of Detroit = 324
Michigan = 326
United States = 241

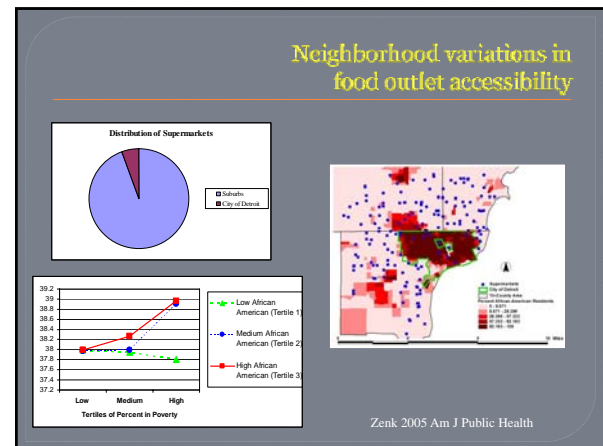
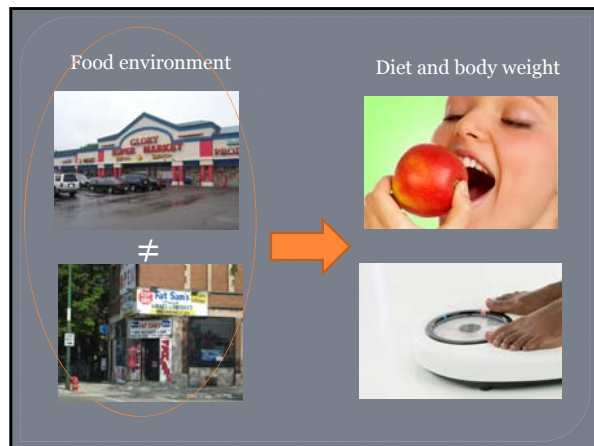
Greater Englewood, Chicago

- 98% African American, 32-44% below poverty
- Estimated annual \$10.74 million grocery expenditure leakage



Zenk 2010 J Nutr Educ Behav

- No major supermarket
- Limited availability of healthy foods. For example:
 - 43% sold any fresh produce
 - 9% sold skim milk (83% whole milk)
 - 12% sold whole wheat bread (77% white bread)
- Unappealing environment
 - 50% plexiglass at check-out
 - 67% tobacco or alcohol window ads
 - 53% rated as "dirty"

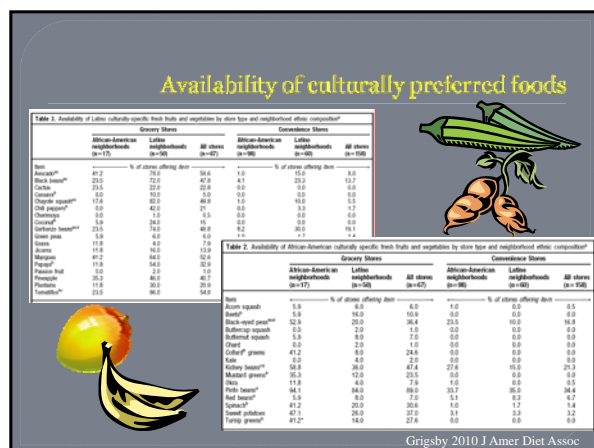


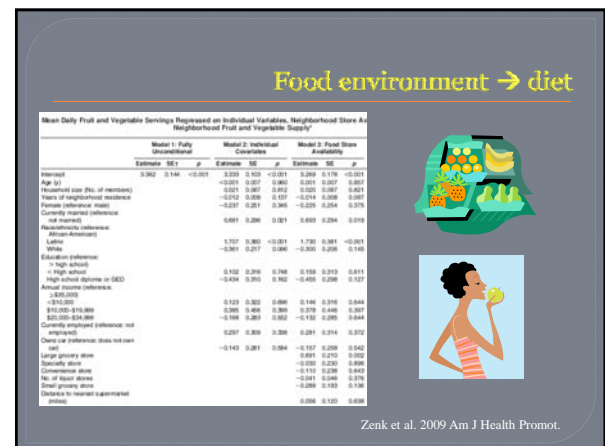
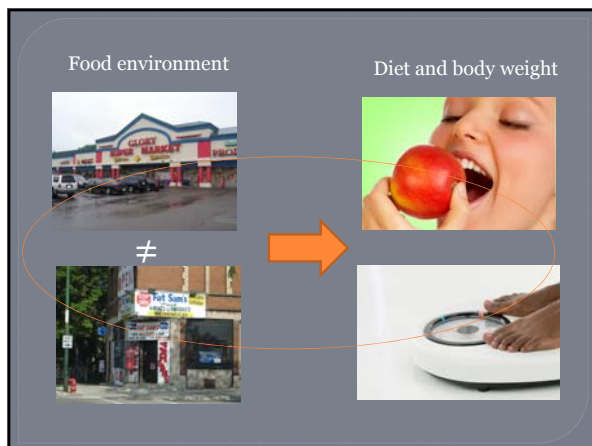
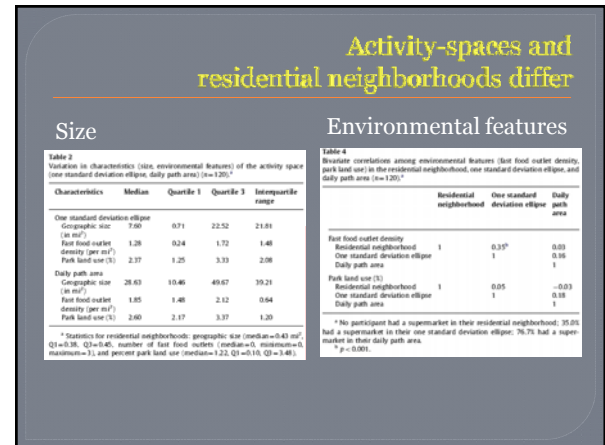
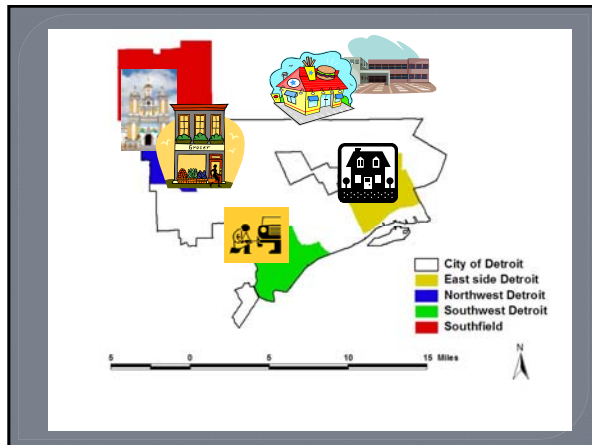
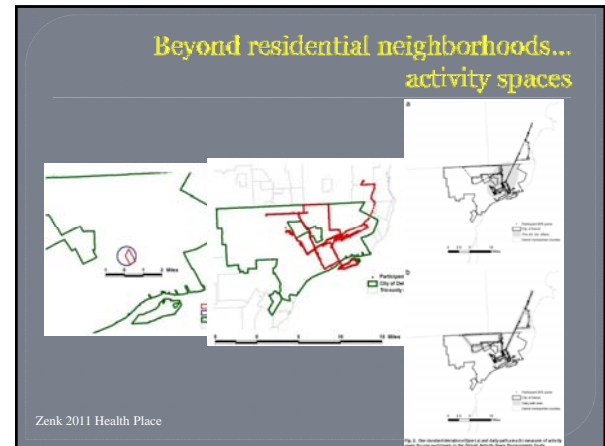
Neighborhood variations in food availability, prices, and quality

The shelves are dirty. The items that are on the shelves are dusty. I've had a situation onetime when I bought some of that instant oatmeal and there were worms in the package. That was some years ago...So, I don't buy anything like that out of there. The most I will buy out of there is a pop, a juice, or something I don't have to eat.



Zenk 2006 Ethn Dis





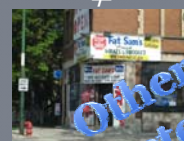
Activity space food environment → diet

- Activity-space fast food outlet density associated with intake of
 - % Saturated fat (+)
 - Whole grain (-)
 - Not fruits and vegetables
- No association between residential neighborhood fast food outlet density and dietary intake
- No association activity-space (or residential neighborhood) supermarket density

Food environment



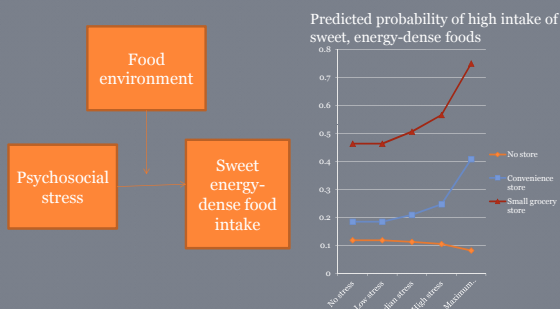
Diet and body weight



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Other Factors

Stress-food environment interactions



Intervention-food environment interactions

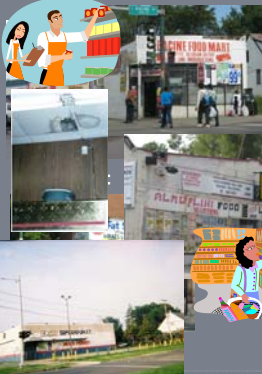
- Does the food environment moderate the effect of behavioral interventions?
- VA MOVE! program
- Hypotheses:
 - Weight management program participants who live in resource-rich environments lose more weight and attain greater improvements in metabolic risk factors.
 - Among weight management program participants who lose 5% or more of their body weight in the first six months of program participation, those who live in resource-rich environments are more likely to maintain their weight loss and improvements in metabolic risk factors.

Food environment

Behavioral intervention

Diet and body weight

Food environment

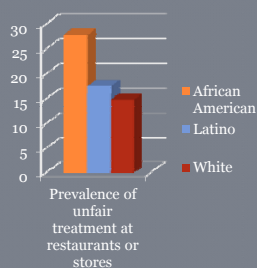


Diet and body weight



Health

Food environment and unfair treatment



- Those shopping at a supermarket were 2.3 times more likely to report unfair treatment than those shopping at another food store type ($p < 0.01$)
- Among supermarket shoppers, African Americans were more likely to report unfair treatment than Whites

Food environment

Diet and body weight

HOW DO WE IMPROVE THE FOOD ENVIRONMENT?

Introduce new “healthy” outlets/
Work with existing stores

P-H-R-E-S-H
Pittsburgh Hill Homeewood
Research on Eating,
Shopping, and Health
Dubowitz PI

Work through existing
food and nutrition policies

- Addition of healthy food options (including fruits & vegetables) to WIC food packages
- Does this improve fruit and vegetable availability, selection, and prices at retailers?

Estimated predicted probability (availability outcome) or proportion (selection outcome)

Pre-policy change

Post-policy change

O is observation (data collection) point
X is intervention (policy change, August 3, 2009)
T = time point

Work through existing
food and nutrition policies (cont'd)

- Availability improved for 5/8 categories of fruits and vegetables
- Selection improved for 4/8 categories
- Differences by vendor type
- Overall small effects
- No evidence of differences by neighborhood characteristics

For example:
Availability of canned no sugar added fruit

Fitted estimated probability by year and vendor type with 95% C.I.

probability

year

vendor type

Small vendor

Large vendor

Pharmacy

Address other aspects
of the food environment

- Address social-interactional features of food outlets (e.g., customer service, unfair treatment, safety, ownership)

I don't really like going certain places . . . Cause I just don't feel safe. But not only that, say if I go to a grocery store and say a guy try to talk to you . . . in front of the store, if you don't talk back to them they will spit on you.

Zenk 2011 Health Educ Behav.

Address other aspects
of the food environment (cont'd)

- Improve store upkeep (inside, outside)

If it's dirty I won't shop there. That's usually the first thing because I'm pregnant and so I've always got to go to the bathroom. So that's the first thing that I do is go to the bathroom and then I go grocery shopping. If it's dirty in there then I'm like "I ain't going, not today."

I walked in the store and it was just like nasty. It was cockroaches running on the floor and as soon as I saw that I called my mama on the phone like, 'Look Ma, we're not fixing to get nothing from up out of here because they've got roaches and the floor is filthy dirty. I'm gone.'

Beware of unintended consequences



Acknowledgements

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