



**EXAMINING
THE IMPACT OF
FOOD
DESERTS
ON PUBLIC HEALTH
IN CHICAGO**

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MARI GALLAGHER

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**Foreword &
Executive Summary Only**



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Robert S. Grossinger
Senior Vice President
Community & Sustainable Development

Dear Colleague:

LaSalle Bank is committed to building sustainable communities by providing residents, small businesses and non-profit organizations with the resources and assistance necessary to be healthy and vibrant members of the community.

With deep roots in the Chicago community, LaSalle Bank understands that many of the city's neighborhoods are challenged by limited access to healthy food. It has been established that numerous areas of Chicago are considered "food deserts," neighborhoods with no or distant grocery stores but an abundance of fast food restaurants and other retail outlets offering little or no nutritious food. Similarly, public health officials and community advocates have been alarmed by statistics that reflect the growing prevalence of obesity, diabetes, cancer, cardiovascular disease and hypertension, particularly in these disadvantaged communities.

As rates of these and other chronic health problems continue to rise, researcher Mari Gallagher proposed, and LaSalle Bank commissioned, a report to explore the health consequences of food deserts. And, indeed, it appears that residents of food deserts experience higher rates of certain diet-related health conditions.

We hope that the findings herein and discussion at the *Stranded in the Food Desert* forum will reveal both the challenges and opportunities involved in providing equal access to healthy food to affected neighborhoods – and that it will inspire new understanding of this important community health issue, and action that begins to bring solutions. Thank you to Mari Gallagher, Local Initiative Support Corporation and the many organizations and individuals who contributed to this report.

Sincerely,

A handwritten signature in black ink that reads "Robert S. Grossinger". The signature is written in a cursive, flowing style.

FOREWORD FROM GEORGE KAPLAN

“Location, location, location,” is an expression that comes up a lot in conversations about the value of a piece of property. Whether we’re talking about buying a new house or locating a business, everyone knows that location matters. But what about health? Is the location where you live also important for your health? Sure, we all know that living in an area with fouled water or air can affect our health, but are there other aspects of places that can make us sick or keep us well? The answer is most assuredly “yes,” and it is not based on just real estate lore but on a solid foundation of facts that have been accumulated over the last quarter century or so. Researchers from epidemiology and other disciplines have consistently shown, for example, that those who live in disadvantaged neighborhoods have worse health outcomes. For a wide range of health problems across the age spectrum – from infant mortality to disability in the elderly, and specific conditions such as cardiovascular disease, diabetes, and asthma – where you live does make a difference. What’s more, living in disadvantaged areas also is associated with more obesity, depression, and physical inactivity, all factors that increase your risk of getting sick.

A good example of this is a study that colleagues and I conducted 20 years ago in which we compared the risk of dying between residents of Oakland, California, who lived in federally designated poverty areas and those who did not. Groups of census tracts were gathered together and designated as a poverty area based on levels of income, unemployment, low education, substandard housing, unskilled male workers, and children in single parent homes. This resulted in a 10-mile-long strip divided by a freeway in which housing was interspersed with warehouses, manufacturing, and railways. We tracked the health experience of a group of individuals who lived in this area and other parts of Oakland for many years. After nine years, we discovered that those who lived in this poverty area had a 71% greater chance of dying during that period than those who lived in other parts of Oakland. Of course, the two groups of people differed in many ways, but when we took into account differences in income and education, health care access, race/ethnicity, smoking and other high risk behaviors, depression, and other factors by which they differed, those in the poverty area were still 50% more likely to die during those nine years! So there must have been something about the social and physical environment to which residents of poverty areas were exposed that made them sicker. Health – like politics – must be local, adding new meaning to the importance of location.

How could it be that merely living in a place could make you sick? The evolving perspective is that the areas in which people live can differ widely in their access to health-promoting factors and exposures to health-damaging factors. Furthermore, these different opportunities and risks may explain many of the health differences that we see

between residents of different places, as well as health disparities between racial, ethnic and socioeconomic groups.

This is where the present report, *Examining the Impact of Food Deserts on Public Health in Chicago*, makes a real contribution. By demonstrating that where you live makes a real difference to where you can buy food and, indirectly, the quality of that food, the report begins to explain exactly how opportunities and risks vary by neighborhood. But it doesn't stop there. It also shows important differences between neighborhoods in the "balance" of grocery stores to fast food outlets. That there are large differences in the nutritional choices available between grocery stores and fast food outlets is well known, but what was not known before this report is that for some neighborhoods the balance swings far to the fast food side. At first glance, we might only guess that these differences influence the health of those who live in the neighborhoods. The report provides evidence that suggests our guesses are correct. Cleverly combining information from the City health department, research studies, and driver's license records, the report illustrates that both access to markets and the balance of markets to fast food outlets are associated with important health outcomes. This conclusion applies generally to a broad swath of health outcomes, ranging from "premature mortality," to cardiovascular disease, diabetes, and cancer deaths to obesity and hypertension, lending support to the overall importance of the argument.

Finally, a word on language in the report. I find the use of the term "food desert" particularly interesting. A desert is, of course, a place distinguished by the absence of vegetation, rain, etc., which is the sense in which the word is used in this report. Food deserts are defined as "areas with no or distant grocery stores." But the word "desert" is also a verb – "to leave someone without help or in a difficult situation and not come back." This seems to me to capture an important dimension of food deserts not conveyed by the noun. The verb "desert" focuses on action and agency, emphasizing that the lack of access to good food in some areas is not a natural, accidental phenomenon but is instead the result of decisions made at multiple levels by multiple actors. By focusing on this latter meaning, we can find room for changes to be effected, for different decisions to be made in the future, for movement toward actions that can improve access to healthy food for those who have been deserted. In doing so, we can help in at least one way to improve uneven opportunities, and perhaps provide better health as well.

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EXECUTIVE SUMMARY

African-American and White communities that have out-of-balance food environments will have higher rates of residents dying prematurely from diabetes.

In 1923, long before the rise of McDonald’s golden arches, an advertisement for beef made this proclamation in the *Bridgeport Telegraph*:

“Ninety percent of the diseases known to man are caused by cheap foodstuffs. You are what you eat.”

The phrase “you are what you eat” actually dates back to the 17th Century. Over time, science has repeatedly demonstrated that nutritional intake directly affects health outcomes. That we are what we eat is a medical fact. But to what degree does what we eat and, thus, our health, depend on where we live and the types of food we have access to?

Examining the Impact of Food Deserts on Public Health in Chicago probes this very question. Given our foundational premise that the health and vitality of urban communities is a block-by-block phenomenon, our first task is to measure the distance from every City of Chicago block to the nearest grocery store and fast food restaurant. Next, we develop an empirical score to quantify the balance of food choice available to residents. Finally, we compare food access and food balance directly to health outcomes, holding constant education, income, and race. Here is what we found:

- Residents of food deserts – large geographic areas with no or distant grocery stores – face nutritional challenges evident in diet-related community health outcomes. Those outcomes worsen when the food desert has high concentrations of nearby fast food alternatives. We call this the Food Balance Effect.
- Majority African-American and majority White communities that have out-of-balance food environments will have higher rates of residents dying prematurely from diabetes that are statistically significant. This statistical forecast takes into account income, education, and race. African-American communities will be the most likely to experience the greatest total years of life lost from diabetes as a result. To measure this effect, we developed a Food Balance Score: the distance to the closest grocer divided by the distance to the closest fast food restaurant for each block, tract, and Community Area in the City of Chicago. The chart in *Fig. 1* shows the average years of potential life lost (YPLL) for diabetes in 2003 by high, middle, and low Food Balance Scores by Chicago Community Area. The more out of balance the community, the higher the

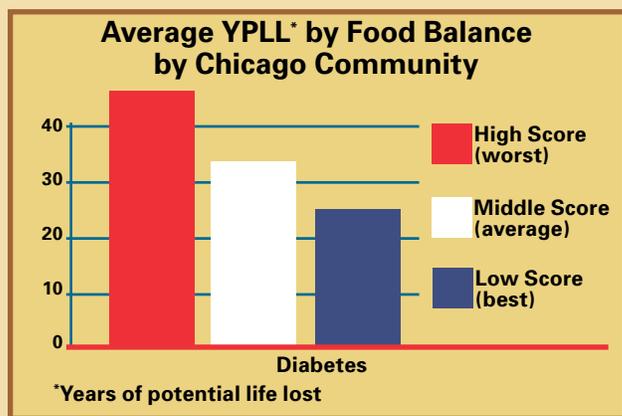


Fig. 1

Diabetes is also a serious health issue confronting Latino and diverse communities.

life lost to diabetes. Diabetes is also a serious health issue confronting Latino and diverse communities. Our study suggests that food access and geographic food balance, however, are not the key contributors to those poor health outcomes.

While the calculation of years of potential life lost might be a new concept to some, almost everyone can relate to differentials among death rates. *Fig. 2* shows the numeric years of potential life lost outcomes from the previous chart along with 2003 death rates for diabetes. The diabetes death rate for the most out-of-balance Chicago communities is more than twice the rate for all other communities.

The map in *Fig. 3* shows Food Balance Scores by race for the tracts that scored in the worst third. These are areas that have no or distant grocery stores, but nearby fast food restaurants, where the greatest premature death from diabetes will likely continue to occur.

Premature death due to cancer and cardiovascular disease is also greater for African-American, White, and Latino communities where there is greater imbalance of food choices. While these effects are not statistically significant, the pattern repeats itself in nearly every instance of analysis: as communities become more out-of-balance in terms of food choices, diet-related deaths and premature death increase.

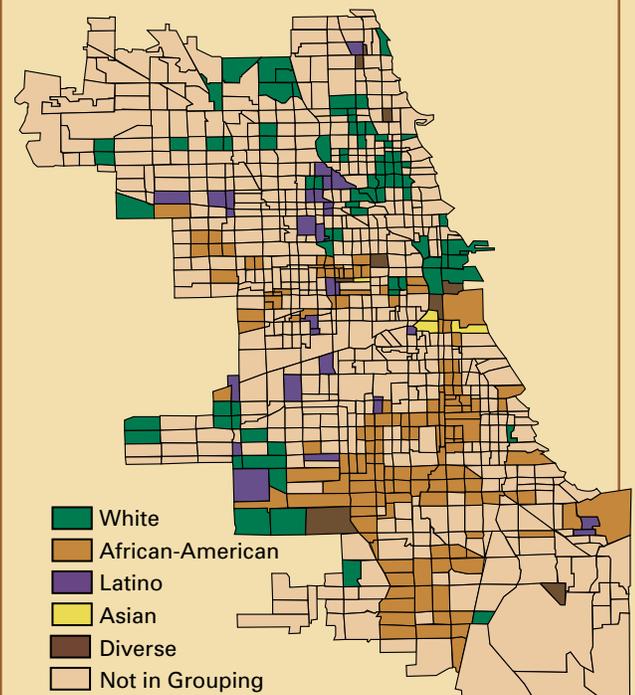
African-Americans are the most disadvantaged when it comes to balanced food choices, although other racial groups do suffer as well. African-Americans, on average, travel the farthest distance to any type of grocery store, and their low access communities cluster strikingly. Chicago's food deserts, for the most part, are exclusively African-American.

Diabetes by Chicago Community Areas by Food Balance Scores

Food Balance Groupings	YPLL	Death Rate Per 1,000 Population
Worst	45.48	1.27
Middle	33.48	1.11
Best	25.36	0.56

Fig. 2

Chicago's Most Out-of-Balance Tracts When It Comes to Food Access



The map shows the most out-of-balance tracts that have no or few grocers but nearby fast food restaurants shaded by that tract's majority race.

Fig. 3

Cancer and Cardiovascular Disease by Chicago Community Areas by Food Balance Scores

Food Balance Groupings	Cancer		Cardiovascular Disease		Food Balance Score
	YPLL	Death Rate	YPLL	Death Rate	
Worst	314	9.73	345	11.07	2.04
Middle	247	7.42	242	7.41	1.25
Best	204	6.68	185	5.72	0.87

Fig. 4

Average YPLL by Food Balance by Chicago Community

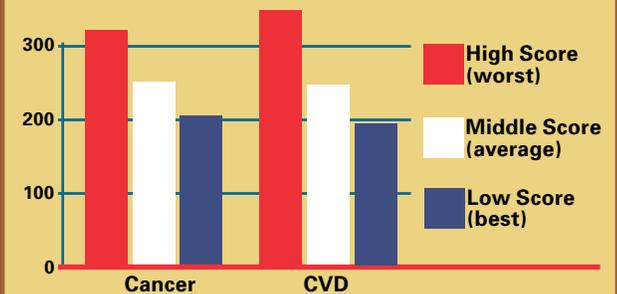
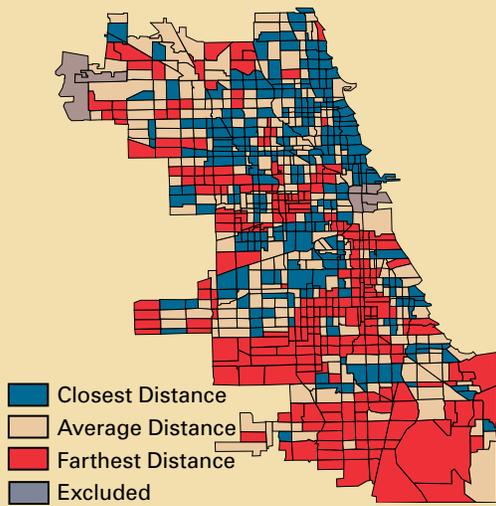


Fig. 5

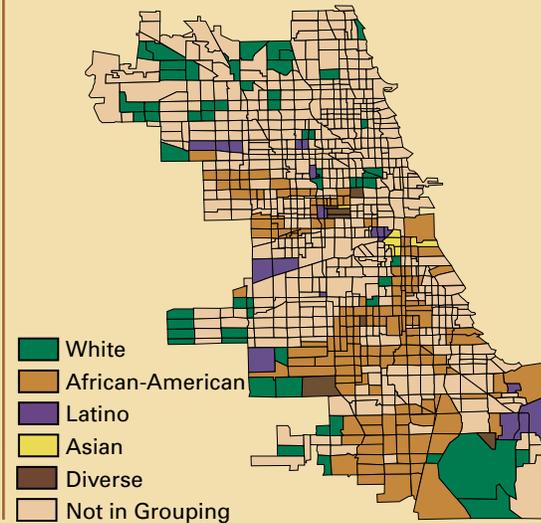
Distance to Grocers by Tract in Chicago



The map shows distance to all types of grocery stores at the tract level. Red colored tracts are the farthest distance from grocers; we see that they form three key food deserts on Chicago's West and South sides.

Fig. 6

Chicago's Food Deserts Are Nearly Exclusively African-American



The map shows only the tracts that are the farthest distance to grocers and shades them by race. We see that the three clusters of food deserts are primarily African-American, with the African-American majority tracts.

Fig. 7

Chicago Communities

- | | |
|-----------------------|---------------------------|
| 1 ROGERS PARK | 40 WASHINGTON PARK |
| 2 WEST RIDGE | 41 HYDE PARK |
| 3 UPTOWN | 42 WOODLAWN |
| 4 LINCOLN SQUARE | 43 SOUTH SHORE |
| 5 NORTH CENTER | 44 CHATHAM |
| 6 LAKE VIEW | 45 AVALON PARK |
| 7 LINCOLN PARK | 46 SOUTH CHICAGO |
| 8 NEAR NORTH SIDE | 47 BURNSIDE |
| 9 EDISON PARK | 48 CALUMET HEIGHTS |
| 10 NORWOOD PARK | 49 ROSELAND |
| 11 JEFFERSON PARK | 50 PULLMAN |
| 12 FOREST GLEN | 51 SOUTH DEERING |
| 13 NORTH PARK | 52 EAST SIDE |
| 14 ALBANY PARK | 53 WEST PULLMAN |
| 15 PORTAGE PARK | 54 RIVERDALE |
| 16 IRVING PARK | 55 HEGEWISCH |
| 17 DUNNING | 56 GARFIELD RIDGE |
| 18 MONTCLARE | 57 ARCHER HEIGHTS |
| 19 BELMONT CRAGIN | 58 BRIGHTON PARK |
| 20 HERMOSA | 59 MCKINLEY PARK |
| 21 AVONDALE | 60 BRIDGEPORT |
| 22 LOGAN SQUARE | 61 NEW CITY |
| 23 HUMBOLDT PARK | 62 WEST ELSDON |
| 24 WEST TOWN | 63 GAGE PARK |
| 25 AUSTIN | 64 CLEARING |
| 26 WEST GARFIELD PARK | 65 WEST LAWN |
| 27 EAST GARFIELD PARK | 66 CHICAGO LAWN |
| 28 NEAR WEST SIDE | 67 WEST ENGLEWOOD |
| 29 NORTH LAWNSDALE | 68 ENGLEWOOD |
| 30 SOUTH LAWNSDALE | 69 GREATER GRAND CROSSING |
| 31 LOWER WEST SIDE | 70 ASHBURN |
| 32 LOOP | 71 AUBURN GRESHAM |
| 33 NEAR SOUTH SIDE | 72 BEVERLY |
| 34 ARMOUR SQUARE | 73 WASHINGTON HEIGHTS |
| 35 DOUGLAS | 74 MOUNT GREENWOOD |
| 36 OAKLAND | 75 MORGAN PARK |
| 37 FULLER PARK | 76 O'HARE |
| 38 GRAND BOULEVARD | 77 EDGEWATER |
| 39 KENWOOD | |

Chicago's Food Deserts by Tract with Community Boundaries

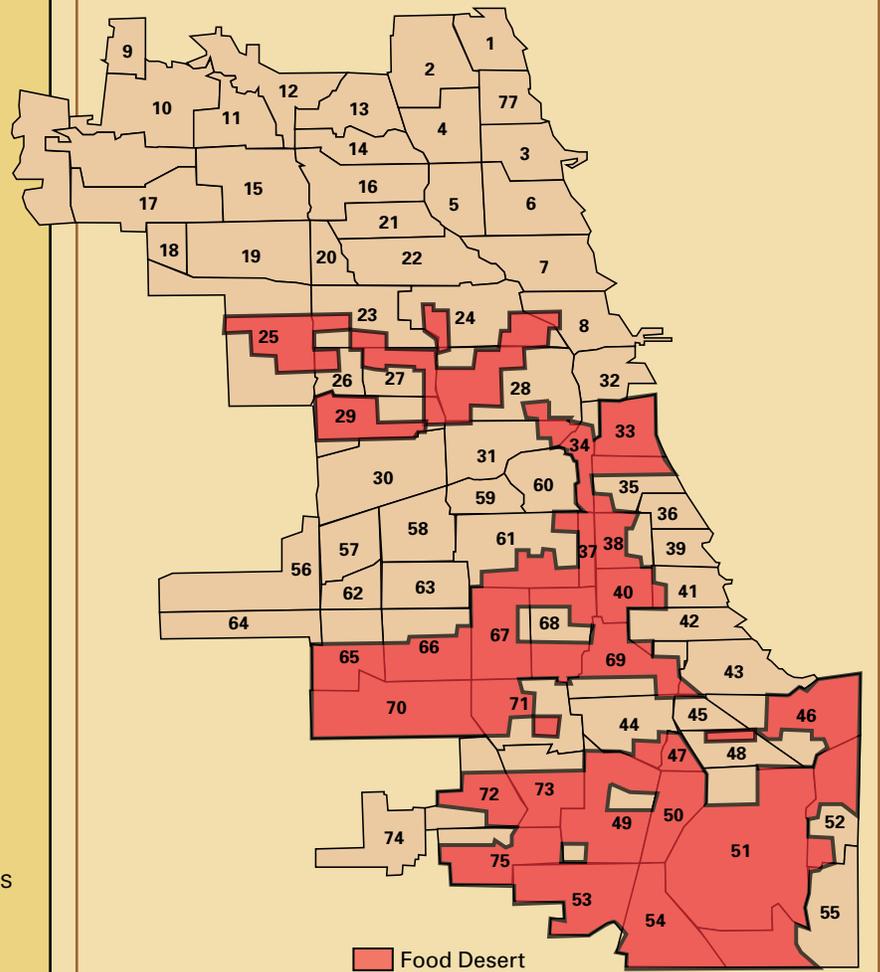


Fig. 8

In a typical African-American block, the nearest grocery store is roughly twice as distant as the nearest fast food restaurant. This means that, for African-Americans, it is much easier to access fast food than other types of food. Following a doctor's dietary recommendation is likely very difficult for the half million plus African-Americans who live in the 287 worst grocery-store-access tracts.

Food balance is a statistically significant contributor to increased rates of body mass index (obesity), but when we conduct the analysis separately by distinct food venues, we see that distance to a grocery store has an even greater impact on body mass index. As grocery store access decreases, obesity increases, holding education and income constant. Since obesity can fuel the onset of other diseases and chronic health conditions, the development of grocery stores in underserved areas likely would contribute positively to community health and wellness of African-Americans and other groups. Conversely, living in a food desert can mean greater rates of obesity, premature death, and lower quality of life, especially for mothers and children.

In Chicago, body mass index patterns cluster dramatically by race and by place: the North and Northwest sides have the lowest rates of obesity, while the West and South sides have the highest rates of obesity. The data is grouped into equal tertiles, not by empirical definitions of obesity as calculated by BMI.

All of these findings point to one conclusion: communities that have no or distant grocery stores, or have an imbalance of healthy food options, will likely have increased premature death and chronic health conditions, holding other influences constant. Although we must set our findings in the context of the challenges and limitations of linking cause and effect and of predicting, with certainty, the exact statistical magnitude of the relationship between food access and health, it is clear that food deserts, especially those with an abundance of fast food options, pose serious health and wellness challenges to the residents who live within them and to the City of Chicago as a whole.

The diet-related health outcomes that we focus on – cancer, cardiovascular disease, diabetes, obesity, and hypertension – steal time, resources, vitality, and productivity, and they reinforce each other. According to a recent report released by the Centers for Disease Control and Prevention, “obesity can increase the risk of (adult onset) type 2 diabetes by as much as 34 fold, and diabetes is a major risk factor for amputations, blindness, kidney failure, and heart disease.” Obesity alone is estimated to cost the United States health care system \$100 billion per year (Koplan and Fleming, 2000).

Communities that have no or distant grocery stores, or have an imbalance of healthy food options, will likely have increased premature death and chronic health conditions.

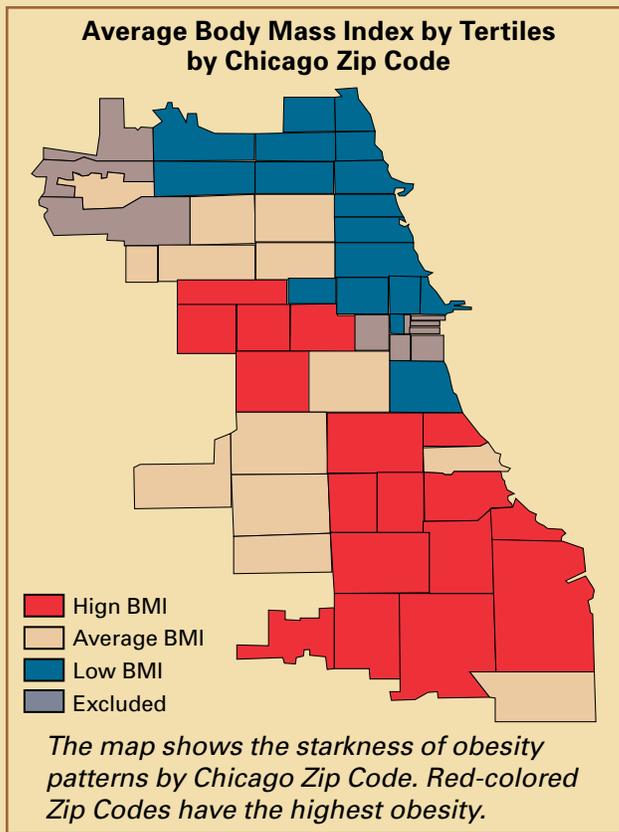


Fig. 9

Six out of every 10 adult Americans are overweight, nearly one in three is obese, and half of all meals are eaten outside the home, mostly at fast food restaurants (UMN News). And according to a study by Lisa Young and Marion Nestle of New York University, food portions, calories, and fat content have increased dramatically over the last few decades, not just at fast food locations, but everywhere. For example, a muffin today is typically 333% larger than what the USDA recommends. In these times, choosing healthy foods on a regular basis is a difficult challenge for anyone, but for residents of out-of-balance food deserts, it is nearly impossible.

The costs associated with the Food Balance Effect will be borne directly by communities and their residents as it relates to the quality and length of life, and indirectly by the health care industry, by employers, by government agencies and by others who take on the financial burden of pre-death treatments. To simply demonize the fast food industry for the negative health outcomes associated with the Food Balance Effect would be to miss several key points that we discuss in the section titled *Author's Comments, Conclusions, and Acknowledgements*. Less important now is what the fast food industry has been. More important are what it is becoming, what it could become, the best way to monitor the Food Balance Effect moving forward, and how to stand behind and support African-American and, indeed, all community leaders who struggle to secure quality and sustainable food venues in their neighborhoods.

As we all need to eat to live, food might not only be our most common denominator as people, but also our most unifying call for collective, strategic action that transcends race, place, class, and outdated development models that just don't work in these underserved communities. Identifying market as well as needs-based solutions that promote access to nutritious foods and healthy food choices will require input and support from the food desert residents themselves as well as from grocers, banks, brokers, developers, planners, health advocates, educators, government, and foundations – ultimately everyone – to achieve even a modest level of success.

We hope that this study provides one small step in the direction of understanding the complex relationship between food balance and community health.

We invite your comments and participation moving forward.

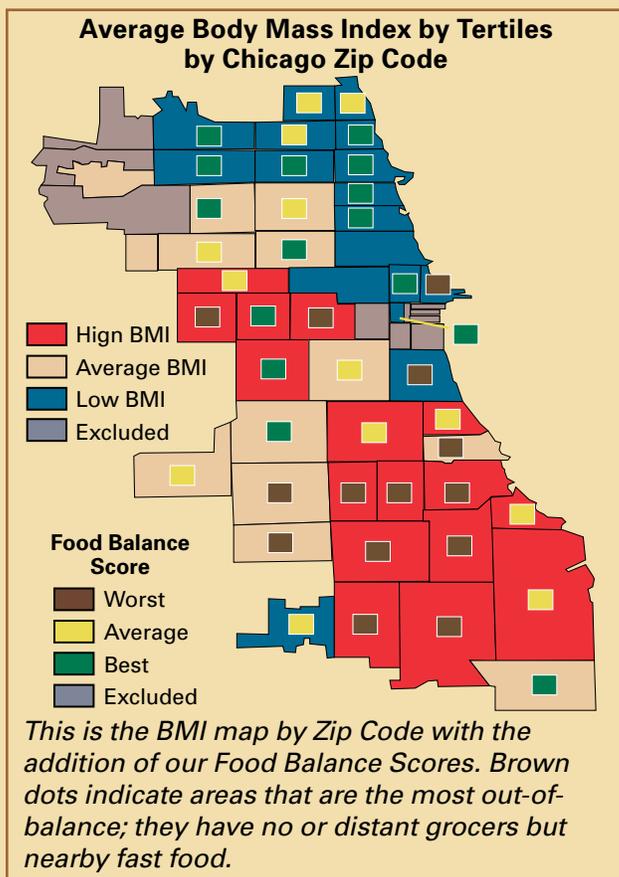


Fig. 10