Food Desert & Food Balance

COMMUNITY FACT SHEET

September 2014

In some communities, *heart-healthy* food is hard to find.

Learn how the lack of access to mainstream food options is linked to obesity, diabetes, and other diet-related diseases and conditions.

Get the facts in our Community Fact Sheet!

MARI GALLAGHER
RESEARCH & CONSULTING GROUP

marigallagher.com

What are Food Deserts?

Mari Gallagher Research & Consulting Group (MG) defines Food Deserts as large geographic areas that have no or distant mainstream grocery stores.

Does this mean that there is no food at all in the Food Desert? No, quite the contrary. Often, Food Deserts have an imbalance of food choice, meaning a heavy concentration of nearby fringe food that is high in salt, fat, and sugar. Many fringe locations also offer "quick meals" that are very convenient but cannot support a healthy diet on a regular basis. The study of Food Deserts is important for every type of community – urban, suburban and rural – because findings from our studies reveal that residents of Food Deserts can suffer worse diet-related health outcomes, including diabetes, cancer, cardiovascular, and other diseases, as well as premature death. These effects are independent from other contributing factors such as income, race, age, and education.

We popularized the term "Food Desert" in 2006. The USDA subsequently created its own definition, and ours differs greatly from it. The USDA limits its definition of Food Desert to a low-income Census tract wherein at least 500 and/or 33% of residents live more than one mile or ten miles from a supermarket in an urban or rural community, respectively. On the other hand, MG does not exclude areas based on income, our analysis is at the Census block group level whenever possible, clustering of poor access blocks is a key factor in determining Food Desert status, and we do not believe that there is a perfect distance to a grocery store for urban, suburban, and rural communities. Each community is unique, and we must determine, in each instance, the ideal thresholds concerning market offerings and their associated contributions to public health.

What Are Examples of Mainstream and Fringe Food Venues?

In 2007, MG developed the categories of mainstream and fringe to describe and code food stores. While we still use other codes (such as convenience store or supermarket), mainstream and fringe codes have been extremely useful in our work because so many different types of stores now sell some type of groceries, and they are not all equal in their offerings. You can use this approach, too, to analyze and describe the options for grocery shopping in your community!

A mainstream food location is a food store that can support a healthy diet on a regular basis. A fringe food location is the opposite; it is not inherently bad, but if it were the primary food

source, local diets and public health would likely suffer. Mainstream grocers need not be part of a major "full service" chain; total square footage is not important. Mainstream grocers can be independent and/or small food stores. The key factor is that they sell an assortment of healthy and fresh foods such as vegetables, fruits, dairy and meats and that they be open to the public on a regular basis, not just once a week or seasonally.

Fringe food venues include fast food restaurants and convenience stores. However, they can also include gas stations, liquor stores, department stores, discount bakeries, pharmacies, and a multitude of other retailers that sell ready-made, fast, boxed, canned and other types of food products but for whom fresh and healthy food is not the primary line of business. Again, these foods are usually high in salt, fat and sugar and have very limited, if any, nutritional value.

Consider where you live. Can you buy fresh, skinless chicken as easily as ready-made fried chicken? Can you buy whole, raw potatoes as easily as French fries, high-salt chips, candy, and soda? Can you buy fresh tomatoes or only ketchup? In some Food Desert communities, whole fruits such as pineapples are considered exotic because they are so hard to find.

Can you buy whole, raw potatoes as easily as French fries, high-salt chips, candy and soda?

Fringe retailers do provide consumers with options, but when these retailers are the only or dominant option, there can be negative consequences.

In our work we cite other industry examples of mainstream and fringe retailers, such a banks (mainstream) and currency exchanges (also called check cashers) and pawnshops (both fringe). Communities that are in-balance in terms of food and other goods tend to have healthier people and healthier economies. Mainstream food access is especially critical to the human condition and to public health because if we don't eat, we don't live, and if we don't eat well, we might not live as long as we would otherwise.

How far away should the closest mainstream grocery store be?

We are often asked this question. As discussed in the "Food Desert" definition, there is no perfect distance to a grocery store that would apply to all communities. For example, we could quantify and map the distances to all mainstream grocers at the block or tract level for an entire state but that map could be misleading. However, if we also run statistical tests with diet-related mortality data, we can determine whether those mainstream grocery distances have meaning.

Why is there not a perfect distance to a grocery store?

Some communities rely on driving more than others, whereas some communities rely on public transportation or walking. Each community is unique; because of issues such as transportation infrastructure, climate, and public safety, a distance such as "five blocks" or "two miles" does not have the same meaning everywhere. We have found that a more important measure than simply the distance to the nearest mainstream grocer is our Food Balance Score, which reveals how easy or difficult it is to choose between a mainstream and fringe food location on a daily basis.

What is Food Balance?

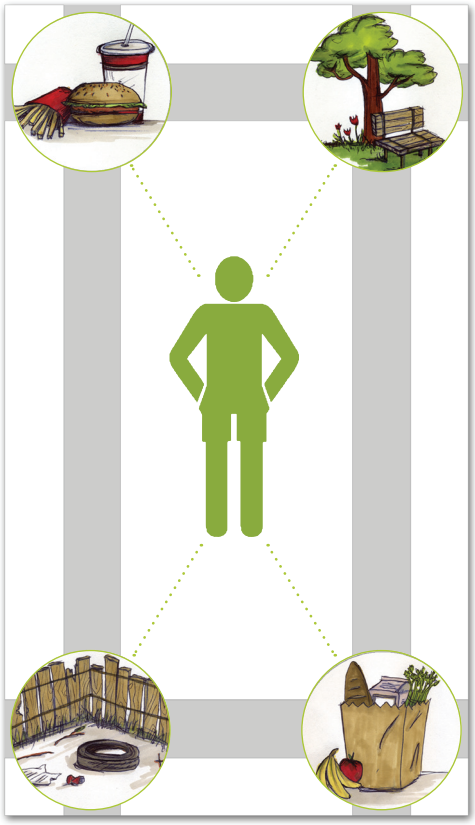
In a community with Food Balance, a mainstream grocer is roughly the same distance as a fringe food venue. We consider such an area to be in balance in terms of food access; it is just as easy or difficult to reach one or the other food establishment.

The Food Balance Score – developed exclusively by Mari Gallagher Research & Consulting Group – 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. When communities are in balance, it is easier for parents to choose healthy food for their children.

Our Food Balance illustration represents the ability to choose mainstream food (shown on the right) over fringe food (shown on the left). Developing affordable and tasty good food choices paired with education, especially in out-of-balance areas, is a great way to improve the overall health of a community.

MG Food Balance Theory

Food Balance Score Description	Examples
Far above 1 : High score and worst outcome	Mainstream food venue is 1 mile away, and fringe food venue is 0.5 mile away 1/0.5 = 2
Around 1 : Average score and average outcome	Mainstream food venue is 1 mile away, and fringe food venue is 1 mile away 1/1 = 1
Below 1 : Low score and best outcome	Mainstream food venue is 0.5 mile away, and fringe food venue is 1 mile away 0.5/1 = 0.5



If this is the block where you live, as shown by the icons, a grocery store, fast food restaurant, park, and empty lot are all equal distance from the center. Most people will not live on the same block as all these options! The illustration is only meant to show the essence of how the metric works.

For example, the fast food restaurant might be five blocks away, but the grocery store might be five blocks away, also, even if it is in another direction. Therefore, since 5 blocks ÷ 5 blocks = 1, that's your score! In most in-balance communities, the score will still be somewhat above 1. However, when the Food Balance Score is far over 2, and blocks with those scores cluster, residents might be severely challenged in terms of choosing mainstream over fringe food options. Consider a study in 2009 that we conducted in Washington, DC, our nation's capitol: We calculated its average Food Balance Score to be 14! That means that the average person in that year would have to travel 14 times farther to reach the closest mainstream food option over the closest fringe food option. This does not necessarily mean 14 blocks, although it could. It means 14 times as far.

The advantage of the Food Balance Score is that it means the same in urban areas as it does in suburban and even rural areas. You can compare scores, and they have a standard meaning. For community leaders focused on an entire county, region, or state, this approach is very useful.

Weighting, Block-Level Data and Buffer Zones

For the Food Access, Food Desert, and Food Balance Scores, each block is "weighted" by population density, and non-zero or near non-zero blocks are excluded. "Weighting" sounds complicated and boring, but it's just the process of making sure that blocks with more population, or less population, are accounted for appropriately in terms of their relative share of the total population. Blocks with more population are assigned a larger weight.

"Non-zero" blocks are places where there is no residential population, such as in the middle of a forest preserve, airport, or industrial area. It would not make sense to develop scores for those locations. We exclude them so we do not distort the findings.

Does this mean that we prioritize higher density areas in determining Food Desert or Food Balance status? Absolutely not! We do exclude areas that have no population, but we do not exclude or "penalize" an area for having relative low population density. However, it is good to account for population density in order to assess the approach and viability of good food solutions.

For Example

A higher density area might be able to support a traditional grocery store, food cooperative, or another type of mainstream option.

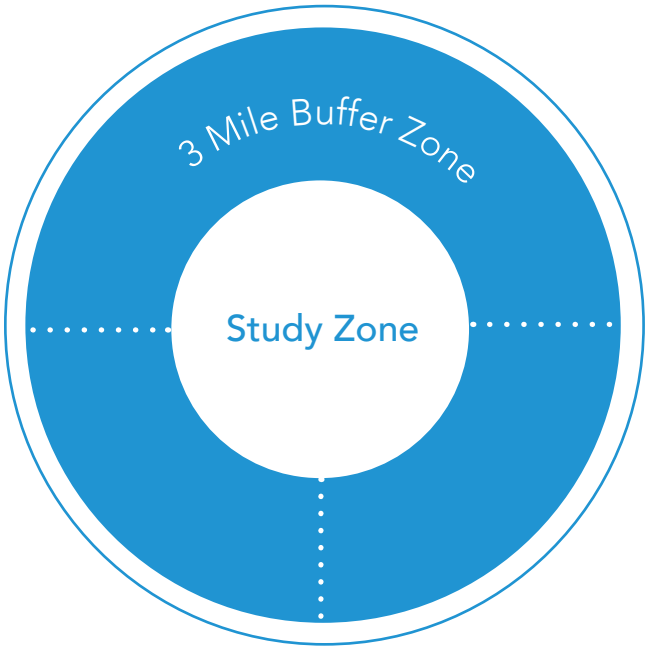
A lower density area might consider a mobile grocer or perhaps a food hub if the local community has a rural base of farmers and other good food producers.

One of the most important aspects of the analysis at the county, city, or community area is that scores be calculated for every block and then brought up to larger geographies if needed, such as the Census tract, community area, or Zip Codes. If you calculate one average across a very large area, the result can be very misleading. If the analysis is for an entire state, tract-level data can be used with the right corresponding statistical analysis.

A "buffer zone" is a ring that circles the study area. Sometimes specific borders or boundary lines define a study area. For example, the study area might be a city. But if you live on the edge of the city, you might cross the official city line to do some of your grocery shopping. So the data need to include not just the food stores in your city but also those in the larger buffer zone around the city. This is true also for a neighborhood; the stores just outside the neighborhood should also be considered when conducting a neighborhood food access assessment.

The "universe" of data must reflect the realities of how people might shop. Generally, for our studies, we use a three-mile buffer zone in urban areas. For rural areas, the buffer zone might be anywhere between five to twenty miles, depending on population density patterns.

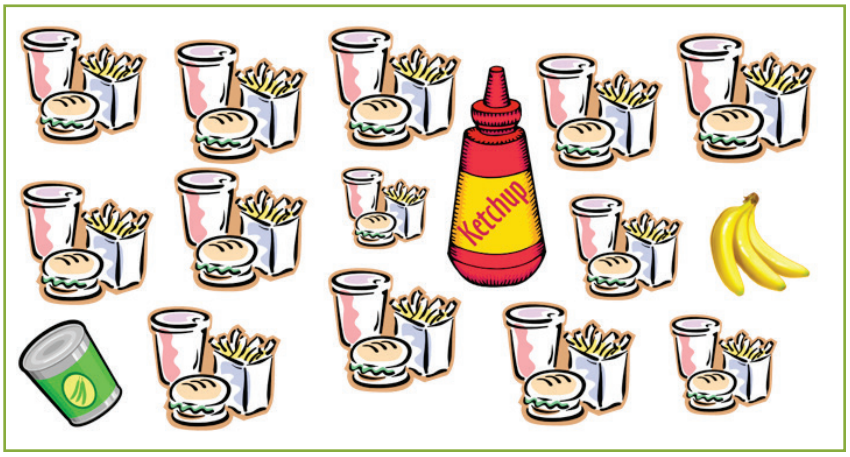
Residents that live near the border of the study area might cross into the "buffer zone" to buy groceries.



The Convenience Food Factor

MG has developed a body of work called the Convenience Food Factor, which means that people generally shop for food most regularly at the places closest to them even though they might desire or require for medical reasons more distant, healthier food. Convenience means location or physical access, but other important variables also come into play, such as financial access (the cost and affordability of the food), cultural access (level of comfort with the store) and even the size of the store (the amount of time to get in and out of the store with groceries when you are in a rush). The Convenience Food Factor is not an automatic assumption; we test this theory each time to see if – in each unique location – it has meaning.

If this is what's convenient in your neighborhood, it might be hard to make a healthy food choice on a regular basis.



What is Food Insecurity? How Does it Relate to Food Deserts?

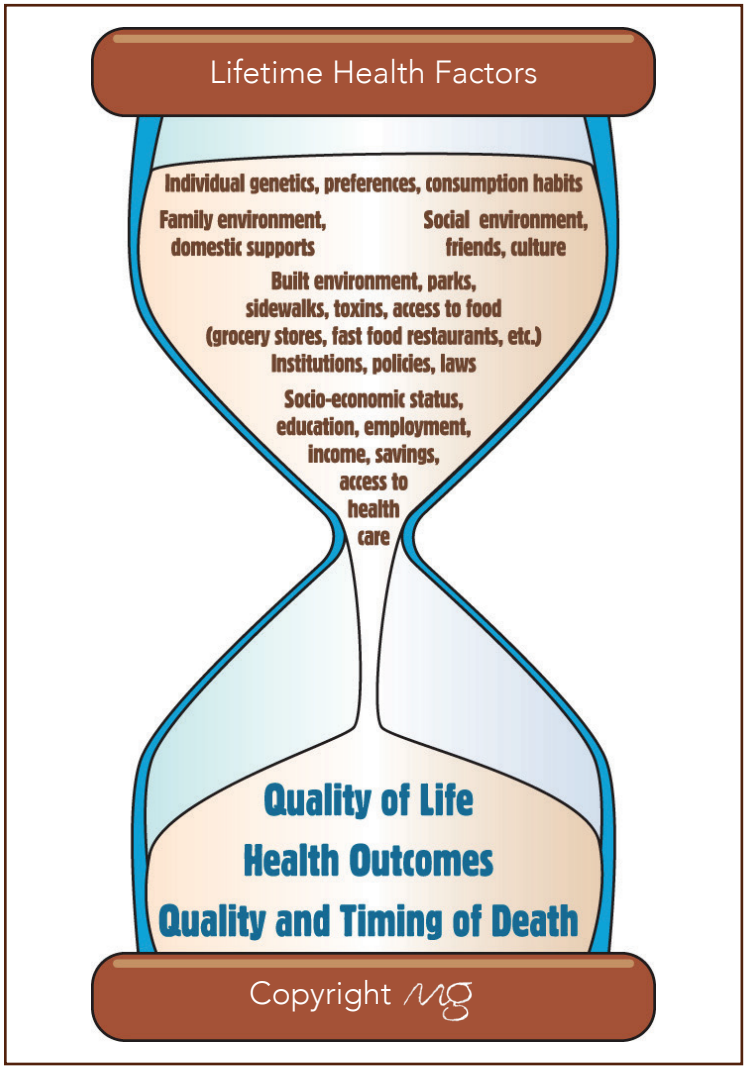
Food insecurity is defined by the U.S. Department of Agriculture as "limited or uncertain availability of nutritionally adequate and safe foods." In Food Deserts, there is often food insecurity. MG contends that hunger needs to be redefined in the Food Desert; there might be an abundance of nutritionally inadequate or harmful food but no or very little healthy food. Food insecurity can also occur in areas with an abundance of healthy food access if the individual family cannot afford the food. The word "insecurity" is used because the family financially struggles to obtain enough food on a regular basis.

For example, a food insecure head of household might find it difficult to buy a full basket of nutritious groceries for the month and pay the rent and other bills. Perhaps she lives close to a mainstream grocery store but, to stretch the dollar, she supplements her family's diet with cheap snack foods or sometimes skips meals. Or maybe she sometimes is not sure where her family's next meal will come from, just getting by day-to-day. She and her children are food insecure.

The Intersection Between the Built Environment and Health Outcomes

MG has identified statistically significant relationships between access to mainstream food options and diet-related public health outcomes in many locations across the United States. These effects are independent from other contributing factors such as income, race, age, and education.

In some communities, we find the correlation to be with diabetes. In other communities, it might be diet-related cancers or heart disease – but specifically not diabetes. Each community is unique. As shown in the illustration, there are many contributing factors to quality and length of life. The object of our studies is to try to isolate the contribution of the food environment and support solutions where they would have the greatest measurable impact.



Isolate the contribution of the food environment and support solutions!

What Can Communities Do?

There is not one single cause of the Food Desert nor is there one single solution. So get involved: Every effort helps! While Food Desert and out-of-balance communities are without enough mainstream grocers, many do have community assets, disposable income, appropriate sites for sustainable grocery stores, corner store owners interested in making improvements and community and government leaders working to improve healthy food options.

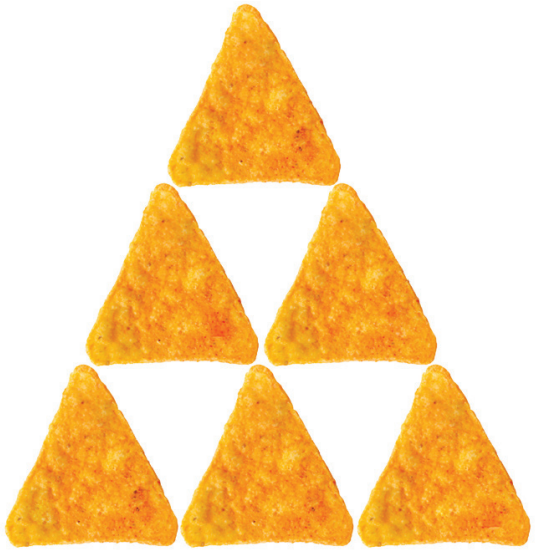
How can you be part of the solution?

Inventory the types of food stores that you have in your community.

- Do they provide healthy food options?
- How can your community partner with local stores to improve their offerings?
- What about urban agriculture and community gardening?
- Exercise programs?
- Healthy school lunches?
- What can we all do to choose healthy foods more often once they become available?

In your community, in terms of local access, is this the food pyramid?

Or is this the food pyramid?



About MG

Mari Gallagher is principal of Mari Gallagher Research & Consulting Group, a nationally-known firm whose expertise includes quantitative and qualitative research projects; retail and housing market assessments; financial services, community and small business development; investment strategies; the economy; food access and public health; immigration; program evaluation; and other content areas. Her research methods run the gamut of detailed data development, indices, and mapping to large online and face-to-face surveys and focus groups. Mari and her team provide hands-on consulting, such as leading strategic planning sessions with executive staff and board members, helping to develop broader vision paired with action strategies, facilitating large town hall meetings, and crafting thought leadership papers for stakeholder dissemination. Additionally, Mari provides hands-on community and small business development assistance to make local commercial and housing markets more economically vibrant, attractive, safe, and enjoyable – this includes healthy food projects. Mari is also a national keynoter. View her TED talk by searching "Mari Gallagher TED" online or visiting (www.marigallagher.com).

In 2006, Mari authored Examining the Impact of Food Deserts on Public Health in Chicago, a breakthrough study that popularized the term "Food Desert" nationally and encouraged Congressman Bobby Rush to enter "Food Desert" language into the Farm Bill. In large part because of Mari's work, millions of dollars have been invested in underserved areas across the country.

Mari is also the President of the National Center for Public Research and former Adjunct Associate Professor at Bouvé College of Health Sciences at Northeastern University in Boston. She has worked to improve quality of life, community health, and economic prosperity. Before launching her own firm, she was the first Emerging Markets Director for Washington-based Social Compact and is an expert on "below the radar" data.

Mari has received dozens of awards over the years from the Boy Scouts of America, the American Heart Association, Concern Worldwide, and many other institutions. Her work has informed the Institute of Medicine, Congress, and many policy, market, and health initiatives. For more information, contact:

Mari Gallagher Research & Consulting Group
Garden Level Suite One
1929 West Patterson
Chicago, IL 60613