



Food Desert and Food Balance Indicator Fact Sheet

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Mari Gallagher Research & Consulting Group has conducted extensive research on identifying and eliminating the “Food Desert” and exposing its statistical link to diabetes, cardiovascular diseases, obesity, certain kinds of cancers, and other diet-related diseases. We were the first to empirically measure Food Deserts and we popularized the term across the country. We also exclusively developed the first-of-its kind Food Balance Score, an index measuring the ratio of mainstream to fringe food at the block level, which is a predictor of diabetes. From California to New York and in other parts of the world, others are now following and replicating the methods developed first by our firm. We are proud to have significantly deepened the understanding of the relationship between food access and diet-related health and to see our work directly impact major policies and legislation, such as the Farm Bill as well as new directions taken by business and medical science. MG currently has Food Balance Scores at the block level for over 90,000 US blocks — and that number is growing. Our goal is to develop data and follow-on solutions for major urban and rural areas across the country.

What are Food Deserts?

Mari Gallagher Research & Consulting Group defines Food Deserts as large geographic areas with 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 what we call an *imbalance* of food choice, meaning a heavy concentration of nearby *fringe* food high in salt, fat, and sugar. Many fringe locations also offer “quick meals” that are highly 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 suffer worse diet-related health outcomes, including diabetes, cancer, obesity, heart disease and premature death. These effects are independent from other contributing factors such as income, race, and education. For diabetes and obesity, we find these relationships to be statistically significant.

What are examples of mainstream and fringe food venues?

Whether you live in an urban, rural or suburban area, it is very important that your local food assessment distinguish and quantify these types of food venues. For this reason, having a common definition for both mainstream and fringe food is very important.

A mainstream grocer is a place where you 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 defining factor is that they sell an assortment of healthy and fresh foods such as produce, fruits, and meats.

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.

Fringe retailers do provide consumer options, but when they 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 as 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 don't live as long as we would otherwise.

How far away should the closest mainstream grocery store be?

We are often asked this question. Frankly, we think that there is no perfect distance to a grocery store that would apply to all communities.

For example, in our work, we could quantify and map the distances to all mainstream grocers at the block level for an entire state. If we worked hard to develop and clean our dataset, this statewide map would be technically correct, but methodologically inappropriate and misleading. Some rural communities rely on driving more than other rural communities, whereas some urban communities rely on public transportation or walking. Each community is unique; one distance score 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 based on geographic access.

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 each block center to the closest mainstream food venue divided by the distance to the closest fringe food venue.

Each block is weighted by population density, and non-zero or near non-zero blocks are excluded.

One of the most important aspects of developing Food Balance Scores is that individual scores must be calculated for every block and then brought up to larger geographies if needed, such as the Census tract level, community area, and Zip Codes. Some who have tried to replicate our work in other parts of the country have calculated one total figure for mainstream grocers and a second figure for fringe food venues – not first at the block level – but by an entire community, town or Zip Code grouping, and then simply divided one by the other. This can be very misleading as the true distribution and relative distance patterns are masked. Food Balance Scores should be brought up from each individual block each time and they are most meaningful at the block level.

A “buffer zone” is also needed. For example, if your food assessment is for a certain county, the best methods would include developing mainstream and fringe food address-level data for every block in that county *and* the immediate ring around that county, since county residents living close to the county border might cross it to buy food. Food access assessments must consider the realities of how people shop.

An added benefit of developing Food Balance Scores statewide is that they can be compared across urban, suburban, and rural geographies in a way that is meaningful. For example, in a particular rural area, the closest mainstream grocer might be three miles away, but the closest fringe food establishment might also be three miles away. In an urban area, each food type (mainstream and fringe) might be five blocks away. Yet both the urban and rural areas would have the same Food Balance Score which could be cross-compared. We could quantify and map the Food Balance Scores at the block level for an entire state. Short of those resources, at least developing Food Balance Scores for groupings of urban, suburban, and rural communities would be appropriate and useful. Cutting corners when resources are limited and skipping the block-level analysis, however, can do more harm than good with misleading information. Ultimately, we can and should develop Food Balance Scores across the US.



Here is how to calculate the Food Balance Score and the Food Balance Effect:

Food Balance Theory (MG copyright applies) As communities become more out-of-balance in terms of food options, negative diet-related health outcomes increase, holding constant other key factors	
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 .5 mile away $1/.5 = 2$
Around 1: Average score and Average outcome	Mainstream food venue is 1 mile away and fringe food venue is 1 mile away $1/1 = 1$
Far below 1: Low score and best outcome	Mainstream food venue is .5 miles away and fringe food venue is 1 mile away $.5/1 = .5$

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, and community and government leaders working to improve healthy food options. Personal choice and responsibility regarding healthy food is important, but we find that it is very hard to choose healthy food if you don't have access to it.