

Food Deserts or Food Swamps?

Though what we eat is usually considered a lifestyle choice, research suggests that both the types and amount of food (and beverages) we consume are influenced to a surprisingly large degree by environmental cues and that our food choices are made without much forethought.¹ At the community level, the food environment also likely exerts a strong influence on food purchasing and consumption patterns.² Efforts to improve nutrition and stem the tide of the obesity epidemic have increasingly focused on policy approaches to improve community food environments—efforts, for example, to attract supermarkets where none exist and help smaller markets to offer fresh produce. Another strategy has been to reduce, or at least not increase, the density of fast food restaurants and convenience stores, particularly in food-poor neighborhoods, often referred to as *food deserts*.

The evidence in support of these strategies is limited but growing. To date, most studies have been cross-sectional, making it heroic if not impossible to tease out more than intriguing hypotheses for additional research. The study by Boone-Heinonen and colleagues³ in this issue of the *Archives* is the exception. It is a carefully designed and executed cohort study (Coronary Artery Risk Development in Young Adults, or CARDIA study⁴) that examines the relationship between supermarket, grocery store, and fast food restaurant proximity and dietary practices among 5115 young adults in 4 cities. The study benefits from a set of validated and relatively detailed measures of dietary intake at several points in time linked with longitudinal geographic data on local food environments within predefined distances of each subject's residence. In addition, the analysis accounts for a number of potentially confounding factors, including individual sociodemographic characteristics and neighborhood poverty. Subject retention over the 15-year follow-up period is relatively high despite a high level of residential mobility.

The most significant finding is the association between fast food availability and increased consumption. This finding has important implications given the well-documented link between frequent fast food consumption and poor dietary quality and increased obesity risk.⁵ However, the finding is confined to low-income men, suggesting a more limited impact in the general adult population. In addition, because the study did not include data on children or Hispanic and Asian ethnic groups, the results have limited generalizability.

These limitations notwithstanding, the findings provide some support for zoning efforts to reduce the density of fast food restaurants in low-income communities. In Los Angeles, California, a moratorium on new fast food restaurants was established in 2008 in a low-income section of the city (south Los Angeles). Though the policy has generated heated debate and its potential

as an isolated intervention for reducing obesity has been questioned,⁶ it also serves as a model for other municipalities when accompanied by more comprehensive efforts to improve local food environments.

The need for a comprehensive approach is particularly important in highly built-out urban settings where fast food establishments are already ubiquitous and there may be few requests for new outlets, limiting the effect of zoning prohibitions. Except in areas with rapid population growth, use of zoning to restrict new development will likely be a painfully slow process for triggering community change in dietary behaviors or obesity rates. Given the public's great desire for the convenience afforded by fast food, another important approach may be to use voluntary incentives or regulatory interventions to promote healthier fare and smaller portions in these restaurants. The recent establishment of menu labeling requirements in larger chain fast food restaurant provides one such example, generating a potential incentive for restaurant chains to reformulate their menu offerings toward lower-calorie options.

Another notable finding of the study is the lack of an association between supermarket availability and dietary behaviors, including fruit and vegetable intake, leading the authors to conclude that several major initiatives currently under way to bring supermarkets to underserved communities may have little benefit in improving diets. This conclusion is questionable given that the study did not assess the quality of the food or relative prices in these venues. For example, the addition of a supermarket in an underserved community may be necessary but not sufficient to induce increased fruit and vegetable consumption unless accompanied by efforts to ensure high-quality and affordable produce. The placement and in-store merchandising of these products are also likely important determinants of purchasing patterns.

The greatest challenge in this area of research is how to address the complexity of local food environments. In many disadvantaged communities, the food environment is more swamp than desert, with a plethora of fast food; convenience stores selling calorie-dense packaged foods, super-sized sodas, and other sugar-loaded beverages; and other nonfood retail venues selling junk food as a side activity. Policy efforts to reduce access to these products, though politically challenging, will likely have a greater impact on reducing the obesity epidemic than efforts focused solely on increasing access to fresh produce and other healthy options.⁷

The study by Boone-Heinonen et al,³ while leaving many questions unanswered, represents an important advance in efforts to characterize the influence of selected elements of community food environments on dietary behaviors. There is urgency to answer the remaining questions. Consistent findings from relevant studies must in-

form policy at all levels of government and in the private sector given the imperative to reverse the epidemic of obesity and the many related chronic diseases.

The need to act in the absence of definitive evidence is reflected in recent guidance from both the Institute of Medicine⁸ and the Centers for Disease Control and Prevention⁹ in reports on community strategies to address the childhood obesity epidemic. Many of these strategies focus on policy interventions to improve local food environments. The federal government and other funding institutions have embraced these environmental strategies in their calls for projects.^{10,11} As these efforts proceed, it will be essential to include rigorous evaluation and targeted research to identify the most effective policies. Given the complexity of food environments, it will be important to identify those combinations of interventions that together generate meaningful improvements in dietary practices at the population level and reduce the huge disparities in overweight and obesity. The burden of chronic disease and gravity of the obesity epidemic demand no less.

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The Novodevichy Convent (New Convent of the Virgin), founded 1524, Moscow, Russia.

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