

Retail food environments in Canada: Maximizing the impact of research, policy and practice

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ABSTRACT

Retail food environments are gaining national and international attention as important determinants of population dietary intake. Communities across Canada are beginning to discuss and implement programs and policies to create supportive retail food environments. Three considerations should drive the selection of food environment assessment methods: relevance (What is the problem, and how is it related to dietary outcomes?); resources (What human, time and financial resources are required to undertake an assessment?); and response (How will policy-makers find meaning out of and act on the information gained through the food environment assessment?). Ultimately, food environment assessments should be conducted in the context of stakeholder buy-in and multi-sectoral partnerships, since food environment solutions require multi-sectoral action. Partnerships between public health actors and the food and beverage industry can be challenging, especially when mandates are not aligned. Clarifying the motivations, expectations and roles of all stakeholders takes time but is important if the impact of food environment research, policy and practice is to be maximized. The articles contained in this special supplementary issue describe ongoing food environments research across Canada and fill some of the important gaps in the current body of Canadian food environments literature.

KEY WORDS: Food; environment; public health; diet

La traduction du résumé se trouve à la fin de l'article.

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Retail food environments are gaining national¹ and international² attention as important determinants of population dietary intake. While the evidence on the extent to which different features of the food environment are associated with dietary intake and obesity is mixed,^{3–5} stronger associations are typically seen when researchers use comprehensive and nuanced food environment measures,³ as well as high-quality dietary measures.⁴

Many Canadian communities are interested in creating food environments that support healthy eating. The federal, provincial and territorial governments have prioritized policy to increase access to nutritious foods.¹ The Ontario Professional Planners Institute's recommendations, that planners consider food access when designing communities,⁶ are reflected in some communities' official plans (e.g., Region of Waterloo and the City of London). Food policy councils are emerging in many Canadian cities, and creative retail food environment interventions, like zoning regulations,⁷ healthy corner stores⁸ and mobile good-food vending trucks,⁹ are being discussed and implemented. It should be noted that in the midst of all these activities, the predominant food environment analogy is still the *food desert*: marginalized neighbourhoods with inadequate geographic access to sources of nutritious foods, like grocery stores. In Canada, however, *food swamps* – marginalized neighbourhoods whose food environment is dominated by fast-food outlets and/or convenience stores¹⁰ – seem to be a more appropriate analogy to describe urban areas. *Food mirages* – neighbourhoods where nutritious foods are available but not affordable¹¹ – may also be a relevant analogy. How we frame problems within the Canadian food environment matters for developing appropriate solutions. For example, to fix a food desert,

policy-makers could create incentives for grocery stores to open in marginalized, underserved areas. To solve food swamps, on the other hand, the density of fast-food outlets or convenience stores could be reduced through zoning regulations, or healthy corner store programs could be implemented to increase the availability, affordability and appeal of nutritious foods in corner stores.⁷ Food mirages will not be solved through intervening in the food environment at all, but instead require economic solutions such as living wage policies. In Canada, some of these solutions are far more politically palatable than others.

So where does research currently fit into the development of policy options to create healthy food environments? Retail food environments research is the younger sibling of the built environment and health research family, which itself is a relatively new field of public health inquiry.¹² As such, food environment assessments are typically done to raise awareness of the issue. Findings can be used to position poor diets as a logical response to the current food environment, thereby challenging the victim-blaming, individual responsibility paradigm so prevalent in Western society.

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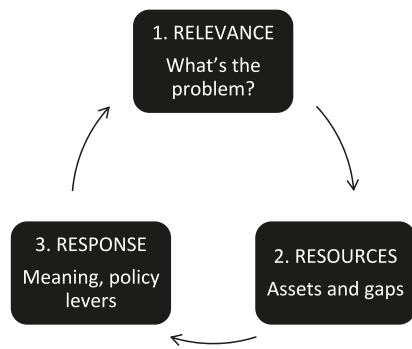


Figure 1. Factors to consider when deciding on a food environment assessment

Notably, because more than 500 measures of the food environment exist,¹³ the importance of carefully selecting measures and presenting findings cannot be overstated. Figure 1 shows three considerations that should drive food environment assessment: resources, relevance and response. *Resources* refers to the assets and gaps that communities should identify before conducting a food environment assessment. In cities, assessing food environment features within stores and restaurants is often significantly more resource-intensive than assessing geographic access to food, such as the density of fast-food outlets around schools or the relative proportion of “healthy” to “less healthy” food outlets in an area. In rural and remote areas, in-store measures may be more feasible because there may be limited access to a specialist in geographic information systems and only one or two stores to assess. *Relevance* refers to how food environment problems are defined. Ideally, the food environment feature assessed should be theoretically and empirically related to a dietary outcome of interest. Some food environment features are more strongly associated with dietary or health outcomes than others,^{3,14} and these associations can be moderated by community context. Finally, *response* refers to the ability of policy-makers to find meaning out of and act on the information provided. There are thousands of food environment features that are measurable, but not all measures are equal in terms of their ability to raise awareness or inform policy priorities. For example, the Nutrition Measures Survey in Stores (NEMS-S), which has been adapted for use in different Canadian contexts,¹⁵ is an inventory-type measure that assesses the availability, quality and affordability of commonly consumed foods and more nutritious versions of those foods. The NEMS-S provides a score in each of three domains related to nutritious food: availability, quality and affordability. The score by itself is meaningless to policy-makers, who have no frame of reference for the statement, “The average NEMS-S score for food availability in this neighbourhood is 11.” As a general rule, all data collected in a food environment assessment should be useable and presented in a compelling way.

Response also refers to policy levers that can be used to change the food environment. For example, it is within municipal jurisdiction to implement a menu-labelling policy,¹⁶ and it is within urban planners’ jurisdiction to specifically define land use for food retail spaces and create zoning regulations that alter the mix of food sources. Table 1 shows examples of different types of

policy-relevant evidence that can be generated through food environment assessment. These three factors – resources, relevance and response – are equally important in determining the most appropriate food environment assessment to use, from data collection to knowledge translation to action planning.

Finally, any solution proposed to improve the retail food environment will require multi-sectoral action. The topic of multi-sectoral and public–private partnerships is both current and contentious in Canada’s public health community. The tactics used by the food industry to sell non-nutritional foods have been compared with those used by the tobacco industry.¹⁷ Voluntary policies adopted by the food industry to improve the nutritional quality of foods have shown questionable effectiveness (see, e.g., the 2015 Lancet Obesity Series). Corporations have a legal responsibility to maximize profit for their shareholders¹⁸; food industry rhetoric about balanced lifestyles is unhelpful at best. The truth is, different actors have different mandates and motivations. Recognizing this reality will serve to clarify where actors are aligned and where they are opposed, which will help reveal which types of policy and program options are feasible within a given timeframe. Navigating public–private partnerships can be challenging, although tools have been created to help guide public health actors in partnership development.¹⁹

Within this context, this supplement describes the state of food environments evidence and policy in Canada. First, Minaker and colleagues synthesize 88 peer-reviewed studies on Canadian food environments. With only one paper published before 2005 and 75% of papers published between 2010 and 2015, the field of food environments research in Canada is rapidly expanding. Gilliland and colleagues report a significant association between a novel space–time characterization of food swamp exposure and non-nutritious food purchasing among a sample of 9–13 year olds in Middlesex-London, ON. Lebel and colleagues also report on a novel food environment exposure: a combination of geographic access and consumer nutrition environment measures to characterize food environments in rural Quebec. Their study supports the use of consumer nutrition environment measures to accurately characterize the food environment in rural areas. The paper by Polsky and colleagues provides the first evidence on the association between features of the food environment and relevant outcomes (in this case, diabetes incidence) in a population-based urban cohort over time. They find that *relative* (rather than *absolute*) measures of the food environment are more strongly associated with diabetes incidence among younger adults living in areas with a high volume of fast-food restaurants. Mercille and colleagues’ paper also finds evidence for the association between *relative* food environment and diet-related outcomes, among urban-dwelling, older men. Importantly, this study examines the moderating effect of diet knowledge on the relationship between food environments and diet quality, and finds a significant moderating effect among older women. The paper by Le and colleagues finds that the majority of 10- to 14-year-old children in Saskatoon do not have easy access to healthy food retail outlets and that lower neighbourhood healthy food prices are associated with decreased odds of being overweight. The next two qualitative research articles address food environment perceptions among children (Engler-Stringer and colleagues) and new Canadians (Rodriguez and colleagues). These articles represent some of the first published

Table 1. Examples of food environment assessments and potential implications

| Example of food environment assessment finding | Type of measure | Purpose and potential policy or program implications |
|---|---|--|
| High school students in our community have an average of 12 fast-food outlets within a 5-min walking distance. | Geographic information systems (density of fast-food outlets around high schools within 5-min walk buffer). | <ul style="list-style-type: none"> • Raising awareness • Zoning regulations |
| 20% of regular grocery stores have at least one candy-free checkout aisle, compared with 10% of discount grocery stores. | In-store inventory measure to assess presence of candy in checkout aisles. | <ul style="list-style-type: none"> • Raising awareness • Grocery industry policy on healthy checkouts |
| It costs \$250 to feed a family of 4 a nutritious diet in our community. This makes up 35% of social assistance payments. | Nutritious food basket costing. | <ul style="list-style-type: none"> • Raising awareness • Raise social assistance payments • Reduce cost of nutritious foods |
| 16% of corner stores in our province have fresh fruits and vegetables available; 100% have soft drinks and potato chips. | In-store inventory measure to assess food availability in corner stores. | <ul style="list-style-type: none"> • Raising awareness • Healthy corner store programs • Programs to enhance distribution of nutritious foods |

qualitative investigations of food environment perceptions and interactions in Canada. Skinner and colleagues draw upon their experience of a food costing project in northern Ontario to reflect on challenges in food environment assessment for the remote, northern Canadian context, and conclude that input from local stakeholders is key to developing and implementing appropriate food environment assessments in this context. Finally, Mah and colleagues describe concrete examples of municipal policy options to promote healthy food environments, such as zoning regulations, mobile vending and healthy corner store interventions, institutional procurement and food policy councils.

The articles in this supplement fill some of the gaps identified in the scoping review by Minaker and colleagues, and set the stage for future intervention and policy research on food environments.

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RÉSUMÉ

Les environnements alimentaires au détail attirent l'attention à l'échelle nationale et internationale en tant qu'importants déterminants des apports alimentaires des populations. Les communautés de tout le Canada commencent à discuter et à appliquer des programmes et des politiques de création d'environnements alimentaires au détail favorables. La sélection des méthodes d'évaluation des environnements alimentaires devrait reposer sur trois éléments : la pertinence (Quel est le problème et en quoi est-il lié aux résultats nutritionnels?); les ressources (De quelles ressources en main-d'œuvre, en temps et en argent a-t-on besoin pour mener une évaluation?); et la réponse à donner (Comment les responsables des politiques trouveront-ils un sens à l'information obtenue par l'évaluation des environnements alimentaires et comment en prendront-ils acte?). En bout de ligne, les évaluations des environnements alimentaires devraient être menées dans le contexte d'un ralliement des acteurs et de partenariats multisectoriels, puisque les solutions aux problèmes des environnements alimentaires exigent une action multisectorielle. Les partenariats entre les acteurs de la santé publique et l'industrie des aliments et boissons peuvent être difficiles, surtout quand les mandats ne correspondent pas. Il faut du temps pour clarifier les motivations, les attentes et les rôles de chacun, mais il est important de le faire si l'on veut maximiser l'impact de la recherche, des politiques et des pratiques liées aux environnements alimentaires. Les articles du présent supplément décrivent les travaux de recherche en cours sur les environnements alimentaires au Canada et comblent des lacunes importantes dans la littérature canadienne actuelle sur le sujet.

MOTS CLÉS : nourriture; environnement; santé publique; régime alimentaire