

The Global Fruit & Veg Newsletter



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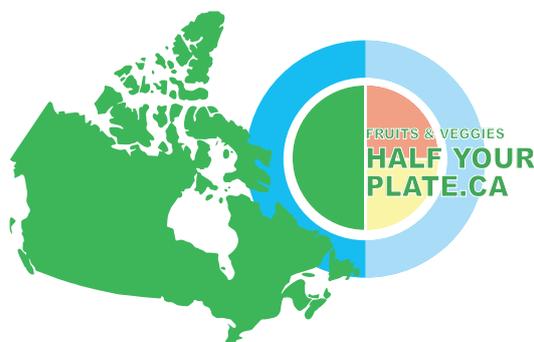
Perfect timing for a national fruit and vegetable nutrition policy

Although a diet rich in fresh fruit and vegetables is considered a cornerstone of good health, Canadians are still consuming less than the 7-10 servings per day recommended in Canada's Food Guide. The studies featured this month illustrate how health behaviours in Canada are affected by various interventions and policies. In fact, shopping frequency, awareness of Canada's Food Guide, and school based interventions are all methods we use to assess how overall consumption is impacted by external variables.

In Minaker's "Food shopping is associated with dietary outcomes in Ontario" she finds that food store selection and BMI are correlated, and synthesized that their findings have potential for relevant food intervention programs. Adding to this study, Drapeau examines how school interventions have the potential to directly increase fruit and vegetable consumption among children. Fernandez and Provencher's article examines one of Health Canada's developed initiatives, Eat Well Campaign: Food Skills (EWC) which promotes family meal planning and preparation. It examines the collaboration between partners from the food retail and health sectors, industry and media and how they worked to leverage resources and expertise and extend the reach and effectiveness of the EWC.

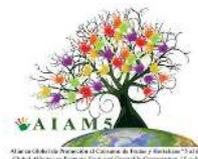
To this end, the Canadian Produce Marketing Association (CPMA and the Canadian Public Health Association) are calling on the federal government to establish a Government of Canada policy statement supporting the goal of increasing the fruit and vegetable consumption of Canadians by 20% by 2020. In fact, Canada is the only G7 country without some form of national fruit and vegetable nutrition policy. This goes beyond Canada's Food Guide and into programs like CPMA's Half Your Plate by providing Canadians with specific resources to promote consumption at both the national and local level. The research in this month's newsletter is supporting evidence to move this policy forward, and strengthens the argument of the importance of using intervention and other policy tools to increase consumption across the population.

Ron Lemaire
President, Canadian Produce Marketing Association, CANADA



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July/August 2013 : E. Pivonka; KA. Grimm and colleagues; E. Howlett and colleagues; S. Burton and colleagues; TO. Erinosh and colleagues (How to increase F&V intake in adults?)

September 2013 : J. Ogden; AR. Khanolkar and colleagues; EL. Melbye; J. Manganello & KC. Smith (Parenting practices and their consequences on children)

October 2013: M. Bruening; V. Cordeiro Barbosa Filho and colleagues ; AM. Santaliesra-Pasías and colleagues, KA Levin (Behavioral risk factors in adolescents)

November 2013: M. Bonnefoy ; M. Södergren & SA. McNaughton ; CE. Neville & JV. Woodside; MS. Lee, YT. Lo & ML. Wahlqvist (F&V intake in older adults)

December 2013: T. Gibault; W. Willett (How translate F&V beneficial assets into efficient consumption practice?)

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Food shopping is associated with dietary outcomes in Ontario

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The food environment and poor diets in Canada

Canadians typically fail to meet recommended daily guidelines for vegetable and fruit consumption, and many Canadians consume poor quality diets. Dietary behaviours are embedded in social, economic, and physical environments. Current diets are a logical response to the existing retail food environment in Canada, which tend to promote the purchase and consumption of less healthy foods and beverages.

Gaps in knowledge about food shopping and diet

The vast majority of dietary energy consumed in Canada is purchased in food stores as opposed to restaurants. Little is known about why consumers choose to shop for food in the places they do, and how buying food at different types of food retailers is associated with dietary and weight outcomes. These gaps in knowledge are important because if we understand why people shop where they do and how food shopping is associated with dietary intake, both retailers and public health practitioners can create effective strategies to improve the diet quality of Canadians - starting in the food store.

Investigating food shopping motivations and associations with diet and weight

We conducted a study using a population-based survey of 4574 residents living in 2596 households from Kitchener, Cambridge, and Waterloo, Ontario to examine: 1) motivations for food store choice; and 2) how food purchasing is associated with dietary and weight outcomes.

Food shopping motivations

First, we asked main household shoppers from the participating households the top three reasons why they choose a specific type of store when they buy food. The most commonly-reported reasons why shoppers chose a specific supermarket were: proximity to home, work or other daily activities, high food quality, and cheaper food prices. For convenience stores, proximity and convenient hours of operation were the most frequently-reported reasons. Shoppers most often reported choosing farmers' markets based on the high quality of foods and because they wanted to "buy local".

Food shopping diet, and weight-related outcomes

Second, we asked how frequently shoppers buy food from the following types of food outlets: supermarkets, supercenters,

convenience stores, specialty stores, farmers' markets, food banks, home delivery, and food co-ops. We also asked them to report their weight, height and waist circumference according to a standard protocol, and how frequently they consumed fruit and vegetables. For a sub-group (n=1362), we collected food records over two days, which captured detailed information on everything participants ate and drank. Most participants (91%) shopped at a supermarket at least once per week, compared to 16% of participants who shopped at supercenters, 10% who shopped at convenience stores, and 7% who shopped at farmers' markets at least once per week. After adjusting for a number of socio-demographic factors (sex, education, car ownership, and household income), we found that people who shop frequently at supermarkets, farmers' markets and food co-ops consumed fruit and vegetables significantly more frequently than those who shopped at these places less frequently. People who frequently shopped at convenience stores, used home delivery services, and used food banks consumed fruit and vegetables significantly less frequently than those who did not use these food outlets as often. People who often shopped at specialty stores and farmers' markets had lower body mass index and smaller waist circumferences than those who did not use these types of food retail as often, whereas shopping at supercenters was associated with marginally higher body mass index and waist circumference.

Farmers' markets, specialty stores, and convenience stores as important settings to promote fruit and vegetable intake

Shopping frequently at farmers' markets and specialty stores was associated with lower weight and more frequent fruit and vegetable intake in the three cities, whereas shopping frequently at convenience stores was associated with less frequent fruit and vegetable intake. Because this study was cross-sectional, we are not able to say that shopping at farmers' markets or specialty stores cause increased fruit and vegetable consumption. Indeed, it may be that people who enjoy consuming fruit and vegetables shop frequently at the farmers' market because of the high quality of available produce. That said, this study builds on past research showing that in-store marketing, food availability, quality and prices can influence food purchasing, which then affects dietary intake. This study suggests that in particular, intervening in convenience stores to promote fruit and vegetable sales may be a promising direction for future interventions to improve fruit and vegetable intake in Canada.



The Effectiveness of A School-Based Nutrition Intervention on Children's Fruit, Vegetable and Dairy Product Intake

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Even though obesity is recognized as a complex and multifactorial problem, unhealthy eating habits are one important factor contributing to the emergence of childhood obesity and its health-related consequences¹. The last Canadian Health Survey revealed that children's eating habits are not optimal and that fruit and vegetables (F&V) and dairy products (DP) represent the two food groups where the largest proportion of children and adolescents do not meet recommendations².

In addition to having a high nutrient density, F&V and DP could play an important role in childhood obesity treatment and prevention. In one previous study, we observed that among 41 food groups, an increase in whole fruit and low-fat milk intake appeared to be the two specific groups consistently associated with better weight control, however, this was observed in adults³. Acute studies have demonstrated that the incorporation of F&V into children's meals can decrease energy intake by lowering energy density⁴. One intervention study also showed a beneficial effect of increasing F&V and DP on children's eating habits compared to a more restrictive intervention that included a reduction in fat⁵. This is in line with studies showing that an increase in F&V or DP often results in a concomitant decrease in unhealthy snacks/foods⁶⁻⁸. Thus, a high consumption of these two food groups appear to represent a useful strategy to prevent or treat obesity. At Laval University, our research group has developed a nutrition program called "Team Nutriathlon" where the objective is to increase and diversify the consumption of F&V and DP in children/adolescents.

What is Team Nutriathlon?

Team Nutriathlon is an eight-week, school-based nutrition program where students are encouraged to reach individual and team goals regarding the quantity and variety of F&V and DP consumption (and dairy alternatives) based on Canada's Food Guide⁹. The individual goals require students to attain a specific quantity of servings per day while the team goals are based on both quantity and variety. During the program, students are invited to report their daily consumption of F&V and DP for each weekday during the eight-week period. This self-monitoring process permits the production of summary reports every two weeks. These reports are then analyzed every two weeks during a "regulation period" where students meet in teams, read the report

and then analyze their results with respect to the team goals. They also revise their individual and team achievement objectives and identify strategies in order to maintain or increase their F&V and DP consumption. Thus, the program is designed to develop children's autonomy (i.e. decision-making and control over their food choices) towards the gradual adoption and maintenance of healthy eating habits.

What is the program efficacy?

In our first study, we evaluated the effectiveness of the program, which included 404 children from grades five and six (intervention n=242, control n=162), and used paper and pencil to record intakes⁹. At the end of the intervention and even 10 weeks after the program, Nutriathlon participants showed a significant increase in their F&V and DP consumption compared to children in the control group. These positive results prompted us to investigate the efficacy of the program in adolescents. Since school-based programs which incorporate internet use to prevent obesity in youth have been identified as effective strategies to modify eating habits in the school environment¹⁰⁻¹⁴, a Web-based version of the Team Nutriathlon was developed for this group to record intakes. Therefore, the second study assessed the impact of the Web-based Team Nutriathlon among 282 high school students (intervention n=193, control n=89)¹⁵. Accordingly, the Web-based version significantly increased the consumption of F&V and DP in this group of adolescents. Thus, Team Nutriathlon appears to be an effective and innovative approach to promote F&V and DP intake in children and adolescents, at least in the short-term.

What are the next Steps?

Because our previous results have shown that parental involvement is a key factor in the program's success, the next step of this initiative is to evaluate its effectiveness among families that have at least one obese child. Results from our pilot project, which includes 13 families randomized to either Nutriathlon or a control group, has shown that the intervention increased the consumption of F&V and DP in children and the global quality of their diet compared to the control group (Drapeau et al., unpublished). Overall, these results suggest that this program represents a promising, positive and non-restrictive obesity prevention program in school settings as well as a clinical tool used in childhood obesity.

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Selecting cross-sector partners to work with the federal government on promoting healthy eating

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In response to child overweight and obesity being made a public health priority, Health Canada developed a series of healthy eating and education awareness initiatives¹. The final and third initiative was a social marketing campaign, the Eat Well Campaign: Food Skills (EWC), that promoted family meal planning and preparation to Canadian parents. Health Canada collaborated with cross-sector partners from the food retail industry, the media and the health sector to extend the reach and effectiveness of the EWC. Leveraging resources and expertise are important incentives for governments to work with partners. Developing solutions to address complex health problems, such as improving dietary behaviors, is complicated and requires the joint action of multiple sectors from the government, private industry and civil society^{2,3}.

The adoption of healthy eating initiatives by cross-sector partners, and motivations for organizations from different sectors to collaborate with a federal body have not been examined. Given that adoption can influence an intervention's effectiveness⁴, it is important to understand the factors involved, particularly in the context of adopters from multiple sectors. The objective of this qualitative study was to describe factors that influenced the adoption of the EWC. Findings were based on telephone interviews with 18 of Health Canada's partners. Five main recommendations for public health organizations were derived from the analysis of these interviews⁵.

1. Use a targeted approach to recruit partners

The adoption rate among cross-sector partners appeared to be extremely high. All partners that were directly invited to participate in the EWC agreed to partner with Health Canada. These partners were intentionally sought out by Health Canada through specific networks or invitations to respond to calls for proposals.

Pre-selecting and targeting partners that will likely respond well to an initiative's objectives appears to be a very effective method for recruiting partners.

2. Find partners that are highly compatible

All partners that agreed to adopt the EWC had some level of compatibility with the campaign's initiatives, values, audience or staff. Compatibility is a known factor that drives adoption of an initiative by an organization⁶. Having a good fit, particularly when it comes to organizational values, appears to be more important than profit oriented or non-health related missions such as entertainment. We recommend identifying partners that would have a good innovation-systems fit with the public health initiative⁷.

3. Use social networks (peer pressure) with high opinion leadership

Using established networks to recruit organizations provided an automatic partnership base. Some organizations participated, because it was part of their mandate within a specific network, while others felt it would have been impossible to say no given that their entire professional network was expected to adopt the EWC. Using networks with high opinion leadership value is recommended to recruit partners⁸.

4. Use the agency's reputation as leverage

Collaborating with or being associated with Health Canada was a major perceived relative advantage of the EWC. Organizations felt that working with a reputable organization would help improve their credibility and social image among their audience or clients. Relative advantages are among the most important factors influencing adoption. Social prestige, of working with Health Canada, is a prominent

sub-dimension of relative advantages that is known to have a strong impact on adoption⁹. Prominent agencies with high levels of credibility can easily leverage their reputation to recruit the most desirable partners.

5. Understand adoption barriers

Only partners that were invited through a third party appeared to reject the EWC. Nothing, however, is known about this group of non-adopters, because they were not made known by the third party to Health Canada and could not be included in the study. Health Canada speculated that non-adoption was likely due to organizations having a smaller size with fewer resources and less capacity to collaborate on initiatives outside of their day-to-day business. Not having any information about this group's reasons for rejecting the EWC has left a knowledge gap unfilled about non-adoption, thus it recommended to routinely collect information about reasons for not adopting an initiative. This is particularly important to better understand how to include a diversity of organizations to ensure multiple sectors implicate themselves and are represented in concerted public health initiatives.

Conclusions

Taking into consideration the different needs and expectations of organizations from diverse sectors is important when collaborating with cross-sector partners. Despite the probable differences of organizational missions between partners from the food retail industry, the media and the health sector, there were commonalities among these partners that led to collaborating with Health Canada and adopting the EWC such as shared values. In Canada, prominent federal bodies like Health Canada with strong reputations are desirable partners and these organizations can leverage their notoriety to attract the highest quality partners to help advance population health goals.

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