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Meal planning as a strategy to support healthy eating

Melissa A. Fernandez, RD, Ph. D., Sophie Desroches, Dt.P., Ph. D., Marie Marquis, Dt.P., Ph. D. and Véronique Provencher, Dt.P., Ph. D.

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Les compétences alimentaires : pourquoi et comment les diététistes/nutritionnistes doivent les prendre en considération ?

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Article abstract

Meal planning is cited in the latest version of Canada's Dietary Guidelines as one of four important food skills that help individuals choose, purchase and prepare healthy snacks and foods on a regular basis for themselves and members of their household. While meal planning is often mentioned as a strategy to overcome the main barrier to healthy eating, lack of time, it may also assist individuals reduce stress related to mealtimes and increase frequency of family meals. Although, there is relatively sparse literature that meal planning confers benefits to the diet, there is a history of evidence indicating that it helps manage dietary restrictions related to specific diseases (e.g., diabetes), which can translate into helping the general public consume more fruits and vegetables, while consuming fewer processed foods. In 2013 Health Canada implemented a one-year communication campaign to promote meal planning to Canadian parents as a strategy to increase home-based food preparation and family meals. The campaign evaluation found that awareness was associated with greater odds of having more positive attitudes towards meal planning. However, more than half of parents also reported that lack of time was a major barrier for meal planning. Dietitians can recommend meal planning as a viable strategy to help the public and patients overcome barriers to healthy eating. However, they will likely also need to provide guidance through education and tools to overcome barriers related to meal planning.

MEAL PLANNING AS A STRATEGY TO SUPPORT HEALTHY EATING



Melissa A. Fernandez, RD, Ph. D., School of Public Health, University of Alberta. **Sophie Desroches**, Dt.P., Ph. D., École de nutrition, Institut sur la nutrition et les aliments fonctionnels, Université Laval. **Marie Marquis**, Dt.P., Ph. D., Département de nutrition, Université de Montréal. **Véronique Provencher**, Dt.P., Ph. D., École de nutrition, Institut sur la nutrition et les aliments fonctionnels, Université Laval.

Introduction

The latest edition of Canada's Dietary Guidelines for health professionals and policymakers name planning skills (or meal planning) as one of four important food skills that contribute to an individual's ability to acquire and prepare nutritious foods (1). Although there is no universal definition, in Canada, food skills are often

defined as "a complex, interrelated, and person-centered set of skills that are necessary to provide and prepare, nutritious, and culturally-acceptable meals for all members of one's household" (2). This definition highlights the diversity of skills needed to feed a household, which goes beyond the ability to cook and involves a complex skill set (3). Over the last several

decades, the Canadian food environment has evolved to offer consumers a wide variety of exceedingly available, affordable, and accessible foods that are highly processed and associated with poor health (4). Consumers find it challenging to navigate food environments where complex skills are needed to select, prepare and build healthy relationships with

food (5). Furthermore, households with two full-time working adults are common and may experience time scarcity (6,7), which contributes to a decrease in time spent preparing food and mentoring food skills to children and an increased reliance on highly processed foods (8,9).

Home-based food preparation is associated with healthier eating practices (10,11). Additionally, studies have reported the benefits of family meals for children and adolescents' dietary intakes and well-being (12-15). However, time is commonly identified as a prominent barrier for home-based food preparation, family meals, and healthy eating (16-23). Meal planning is believed to be a strategy to overcome time-related barriers to food preparation (24). Meal planning includes making grocery lists, preparing food budgets, organizing nutritious meals that accommodate preferences of family members, and making good use of leftovers (1). This paper will summarize the available literature on the importance of meal planning as a strategy to support healthy eating. Furthermore, data from the Skills Study, evaluating a mass media campaign to promote meal planning, will be presented (24). Finally, implications for research and practice to support patients and the public in meal planning will be discussed.

Meal planning

Meal and menu planning have long been recommended during nutrition counselling to help individuals manage dietary constraints and disease-related conditions that require special diets, such as diabetes (25,26). Over the last decade, meal planning has also emerged as a solution to facilitate family meals, reduce stress during mealtime, and improve diets, mainly by overcoming time-related barriers to healthy eating and food preparation (20,27). While little evidence has been documented about

how planning leads to healthier diet, it can be hypothesized that by planning meals and snacks individuals will be less likely to rely on energy-dense micronutrient-poor convenience foods, thereby improving diet quality.

Meal planning evidence from Quebec and Canada

In a citizen participation initiative with over 1100 parents in Quebec, lack of time was identified as the primary barrier to healthy family meals (33%), followed by taste and preferences of family members (17%), and budget and costs (15%). Poor planning was considered as the primary reason for unfavourable meal preparation circumstances by 28% of parents and 38% reported improvising when supper wasn't planned (18).

In a cross-sectional study with 4017 Canadian adults, 84% of respondents believed that meal planning helps save time for cooking. Although 86% of respondent agreed that planning a weekly menu helps the entire family eat better, 40% made plans for meals the same day or at the last minute. A greater number of Quebecers report planning meals at least one day in advance than other Canadian provinces (22).

International evidence on meal planning

In one study, focus groups conducted with 27 urban parents in Minneapolis found that there was a desire within this population to have programs that included meal planning. Moreover, parents reported a need for creative ways to help them plan and prepare healthy meals rapidly (21). Using baseline data from the HOME Plus trial with 160 parents from a metropolitan area in Midwestern US, the most frequently reported reasons for purchasing processed meals were lack of time (57%) and family preferences (49%). Lower meal planning abilities

and lower self-efficacy for cooking were associated with purchasing processed meals more frequently due to lack of time ("I don't have time to prepare other foods") (28).

Parents from 300 households in Houston, Texas, were surveyed about mothers' influence on children's eating practices, maternal employment, family meal planning and preparation practises. Maternal employment did not directly influence the likelihood of planning dinner, however, time pressure on cooking reduced mothers' tendency to plan dinner. Mothers who planned dinner had a greater likelihood of reporting children eating family dinners more frequently. The study also showed that routine meal planning can improve the likelihood of regular family meals (23).

In France, meal planning practices were investigated in association with dietary intakes among a national sample of 40,554 adults from the NutriNet-Santé study. Meal planning, defined as "to plan ahead the foods that will be eaten for the next few days", was reported by 57% of respondents. Respondents who planned their meals were more likely to have better diet quality, determined by greater adherence to nutritional guidelines and higher food variety scores. Additionally, meal planners had lower odds of obesity compared to non-meal planners (29).

Among a sample of 1,136 Australian women (18-65 years old), associations between meal planning and preparation practises and fruit and vegetable intake were investigated. Women who reported planning meals for the week before going to the store had greater odds of consuming ≥ 2 servings of fruit and ≥ 2 servings of vegetables, compared to women who never/rarely planned. Conversely, women who decided what they will eat for dinner on the same night most of the time or always had lower odds of consuming fruit and vegetables compared to women who planned ahead (30).

14 The Skills Study

In 2013, Health Canada launched a year-long mass media campaign with the main objective of promoting the importance of meal planning for healthy eating to Canadian parents (24). The Skills Study was a collaboration between researchers from the Université Laval and the Université de Montréal that aimed to evaluate the impacts of the Eat Well Campaign: Food Skills (EWC) on Canadians (24). A cross-section of Canadian parents were surveyed towards the end of the campaign to assess awareness of the EWCs key elements and perceptions of campaign messages (24). Additionally, a subset of respondents completed validated food frequency questionnaires (31) and associations between employment status, food skills and diet quality were investigated (24).

Awareness of the Eat Well Campaign

A total of 964 parents from across Canada responded to the survey. The campaign was recalled by 41% of participants, and awareness was greatest among French speakers, parents with income < \$40,000, and without a university education. Parents living in Vancouver, Winnipeg, and Toronto reported the lowest awareness to the campaign, whereas parents living in Quebec City and rural Quebec reported the highest. These results indicate that there was a high level of variability in exposure to the EWC depending on sociodemographic characteristics, particularly regionally. Findings highlight the importance of considering regional differences when implementing a national intervention (32).

The greater number of campaign elements and number of times the campaign was recalled were associated with greater odds of reporting planning and cooking more as a result of the EWC. Additionally, parents who were aware of the campaign had

significantly greater odds of believing that meal planning helps maintain a healthy diet (odds ratio (OR) = 1.68; 95% confidence interval (CI) = 1.03-2.74) and planning more meals (OR=1.66; 95% CI 1.03-2.54) but not feeling competent in meal planning, after controlling for confounders, compared to parents who were not aware of the EWC (32). The effects of campaign awareness could not be isolated from interest in meal planning; however, overall, these results reinforce the importance of intervention dose (number of elements and frequency) for a campaign's success (32).

Employment status, meal planning and diet quality

Based on exploratory analyses of 767 Canadian parents, it was found that full-time employment was not significantly associated with any of the meal planning practices investigated. However, the Benjamini-Hochberg false discovery rate was used to control for multiple testing, which sets conservative criteria for statistical significance (33). When less strict criteria are applied, parents who worked full time appear to have lower odds of planning meals (OR=0.49; CI=0.29-0.82) (34). Time was the most cited barrier for meal planning regardless of employment status, but was more significant for full-time working parents (34). A high proportion of Canadian parents reported planning practices; 91% planned before going to the store, 55% used a budget and 95% used a written grocery list. The meal planning practices investigated in this study were not associated with diet quality; however, this study may not have captured all relevant planning skills and the frequency of each planning practice was not assessed (35).

Data collected from a subsample of 152 Quebec parents (35) show that meal planning is prevalent in Quebec with 86% of parents reporting planning meals (Table 1). Though the

number of days in advance were not specified in this study, nearly all parents planned meals before going to the store (93%) or sometimes had a budget when shopping for groceries (93%) and just over half used a written grocery list (52%) (Table 1).

Relevance for practice

Evidence suggests that spending time on home-based food preparation is necessary to support healthy eating practices; however, time-related costs need to be factored into the “price” of healthy eating (36). Additionally, there is a strong demand for quick and easy solutions to healthy meals, particularly among parents (21). There are opportunities for practitioners to provide guidance to clients/patients that will help them quickly and efficiently prepare nutritious snacks and meals. Cooking abilities, knowledge, time, and food security are essential for effective meal planning. Furthermore, meal planning may take on different forms, depending on an individual's time availability, cooking skills, food and nutrition knowledge, lifestyle, and their household's characteristics. For time-constrained working individuals with disposable income, meal planning may include using more expensive prepacked/semi-prepared healthy ingredients (e.g., premade salad kits), healthy meal catering services, or even hiring domestic help. For those who cannot afford luxury services, practitioners can assist with budgeting food, community kitchens, organizing fridge/pantry ingredients, and teaching time-saving tips (e.g., doubling recipes and simple cooking methods, cooking once for an entire week) that will help make planning and preparation less stressful. Meal preparation is popular in the media with books dedicated to the topic (e.g., *Food Prep pour repas improvisés* by Jessika Langlois) and a plethora of life hacks on Pinterest and Instagram. Additionally, several apps and online services are now available

Table 1. Meal planning practices and barriers of Quebec parents*

	Total n (%)		Mothers n (%)		Fathers n (%)	
	n = 152	%	n = 127	%	n = 25	%
Meal planning practices						
Currently plan meals	130	86%	110	87%	20	80%
Plan before going to the store	141	93%	117	92%	24	96%
Make a budget	141	93%	118	93%	23	92%
Use a written grocery list	79	52%	70	55%	16	64%
Meal planning barriers						
Lack of time	85	56%	74	58%	11	44%
Food preferences or dietary restrictions of family members	61	40%	52	41%	9	36%
Health issues of allergies of a family member	14	9%	13	10%	1	4%
Access to a variety of fresh and affordable foods	32	21%	28	22%	4	16%
Financial resources	25	16%	23	18%	2	8%
Responsibilities not shared between family members	16	11%	14	11%	2	8%
Lack of ideas	79	52%	65	51%	14	56%

*Data were collected for the Skills Study to evaluate the *Eat Well Campaign*.

that respond to consumer demands for time and convenience, which can further assist households overcome time barriers and plan meals. Alternately, while digital applications hold great promise for management of chronic diseases and dietary concerns, few evaluations have been conducted (37). Strategies to facilitate meal planning and ultimately home-based cooking need to be balanced against societal norms and parental guilt. For some women societal expectations of providing home cooked meals can be compounded by economic disadvantage (38).

Interventions that include meal planning have very little risk for harm or adverse effects although it is relevant to consider potential negative impacts. Given that identifying causal benefits of meal planning is of little value in the context of diet-related diseases, robust research designs (e.g., randomized clinical trials) are not necessary (39). Research evaluating the best methods to implement inter-

ventions that influence the adoption of meal planning practices amidst time-scarcity concerns would be valuable for public health practitioners and clinicians (40). Given that meal planning practices are relatively prominent in Canada, campaigns that promote general meal planning are not warranted. However, interventions that examine the impacts of the frequency and level of engagement in different types of meal planning practices on nutrition outcomes among different segments of the population would be relevant. Research on knowledge translation and implementing meal planning interventions is needed to inform best practices.

Conclusion

Though evidence of the benefits of meal planning is cross-sectional in nature and stems largely from dietary disease-management studies, meal planning remains a viable strategy to support healthy eating. Additional work needs to be done to understand

how to overcome barriers to meal planning, and the types of practices that would be the most beneficial for different households/lifestyle contexts including gendered division of roles. Research on meal planning is relevant to advance priorities laid out in the *Charte québécoise pour une saine alimentation* that calls for collective action to simplify eating practices and promote them in a culturally appropriate way. ■

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