

Developing an Evidence Review Cycle Model for Canadian Dietary Guidance

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ABSTRACT

Formulating dietary guidance involves navigating a large volume of substantive, conflicting evidence. Canada's guidance is determined after periodic evidence reviews. Health Canada identified the need for a more formal and systematic process to gather, assess, and analyze evidence. This led to the development of the *Evidence Review Cycle* model for Canada's dietary guidance. The *Evidence Review Cycle* consists of 5 steps that form a dynamic, iterative process to promote evidence-based, transparent, and proactive decision making. Resulting actions may include enhancing the implementation of guidance, revising guidance, or developing new guidance. Here, the development of this model is described, including considerations for implementation.

Key Words: dietary guidance, Canada's Food Guide, evidence review, nutrition education (*J Nutr Educ Behav.* 2016;48:77-83.)

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INTRODUCTION

The influence of nutrition on population health is well-established. Individual food choices intersect with multiple determinants of health within the physical, social, and economic environment, which may increase or decrease risk for nutrition-related chronic diseases. The Global Burden of Diseases, Injuries, and Risk Factors Study 2010¹ indicated that 6 of the top 15 risk factors that account for the most disease burden in Canada were related to nutrition. Cancer, heart disease, and diabetes ranked in the top 10 causes of death in Canada in 2011, at 30%, 21%, and 3%, respectively.² Furthermore, an estimated 26% of Canadian adults were obese and an additional 34% were classified as overweight in 2011.³ The high risk for obesity associated comorbidities

translates into an enormous health care cost, with a 2006 estimate of \$3.9 billion in direct health care costs and \$3.2 in indirect costs.⁴

Dietary guidance informs nutrition and health education, policies, and programs; supports consistency in healthy eating messages; and provides a standard for the assessment of dietary intakes of Canadians.⁵ The Government of Canada has formally recognized the importance of food intake in health since 1942, with the release of the *Official Food Rules*, which acknowledged wartime food rationing while endeavoring to prevent nutritional deficiencies and improve the health of Canadians.^{6,7} The latest iteration was *Eating Well with Canada's Food Guide* (2007), which targets the healthy, general population aged ≥ 2 years. Canada's nutrition policies and programs for

the health and safety of Canadians are formulated, in part, using the Dietary Reference Intakes (DRIs) developed by Canadian and American scientists through a process overseen by the Institute of Medicine.⁸

The development of Canadian guidance was previously documented for the 1992 and 2007 Canada's Food Guides.⁹ Briefly, the evidence review has historically coincided with the identification of a potential need to revise guidance (eg, evolving science, revisions to nutrition standards, or changes to the food supply), and thus has occurred periodically. Globally, many countries have dietary guidance in place and most engage in periodic evidence reviews rather than a standardized process.¹⁰ This differs from the US, which has a legislated process to review and update dietary guidelines for Americans every 5 years.¹¹

Canada's dietary guidance development process is generally aligned with the World Health Organization (WHO) *Preparation and Use of Food-Based Dietary Guidelines*,¹⁰ because the process has consistently involved stakeholder consultation and considered how Canadian dietary guidance is used, the nutritional intake and status of the population, the environment within which Canadians make food choices, as well as the

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literature on associations between food and chronic disease prevention. Formulating dietary guidance on a national level has become increasingly complex, given the growing volume of substantive, conflicting evidence that aims to clarify the role of nutrition in the health of the population, understand the food environment, and describe food intake and nutritional status.

The growing volume of evidence and public interest in nutrition policy stimulated Health Canada to establish a mechanism for more regular and proactive review of the evidence underpinning dietary guidance. The *Evidence Review Cycle* (ERC) model was developed to formalize the evidence review process; ensure dietary guidance remains scientifically sound, relevant and useful; and identify facilitators and barriers to healthy eating behaviors.

DISCUSSION

Development of the ERC Model

The ERC model was developed in 2012 by Health Canada to frame the

evidence review process for dietary guidance. The first step in building the ERC model was to adapt Gillespie's¹² conceptual framework for developing a dietary guidance system (Figure 1). Consideration was given to other models, including the Food and Agriculture Organization of the United Nations/WHO *Preparation and Use of Food-Based Dietary Guidelines*¹³; however, the broader system approach related to dietary guidance—and the interrelated factors that affect this system—made the Gillespie Framework more relevant. Furthermore, adapting this framework promoted consistency because it was used to inform the previous Canada's Food Guides.¹⁴

Basis of the ERC Model

Gillespie's¹² Framework positions dietary guidance as central to nutrition education; thus, development is linked to implementing a dietary guidance system. The adapted framework advances this work in several ways to capture the complexity of food and health research and enhance the rigor needed for evidence review. The Gillespie Framework was refined

to include 5 factors as direct influences on developing dietary guidance: nutrition standards, food supply, population status, the role of specific foods and dietary patterns, and the policy environment. Nutrition standards, a modification of the Gillespie Framework specification of nutrition needs, were included to better reflect the use of DRIs in assessing and planning diets. These standards reflect the current state of scientific knowledge on nutrient requirements; furthermore, the DRIs are the nutrient basis of the current Canada's Food Guide (2007) dietary pattern. Gillespie's terminology of food constraints was modified to the food supply and to reflect broader considerations such as food fortification, the nutrient composition of food, and food availability.¹⁵ Like Gillespie's Framework, the ERC model cites population status—consumption patterns, nutritional status, and health status—as a direct influence on dietary guidance. National surveillance data inform the development of dietary guidance by revealing trends in sociodemographic characteristics; food consumption patterns; nutritional and weight status; and health status of the population, such as disease pattern change and chronic disease prevalence.

The role of specific foods and dietary patterns in improving health and reducing the risk of chronic disease was added to the adapted framework to reflect the important scientific associations between food and health status.¹⁴ The policy environment was another addition, because the timing of food and nutrition policies as well as associated resources have a direct influence when linked to public health priorities that affect the food environment and the communication of dietary guidance. For example, if nutrition regulations change (eg, fortification policies), this is assessed against the current dietary pattern to ensure that the guidance still meets the needs of Canadians. The policy environment also has an indirect influence, because nutrition-related policies across government departments are also considered (eg, agricultural and environmental policies determine food availability, which in turn affects the content and application of dietary guidance).

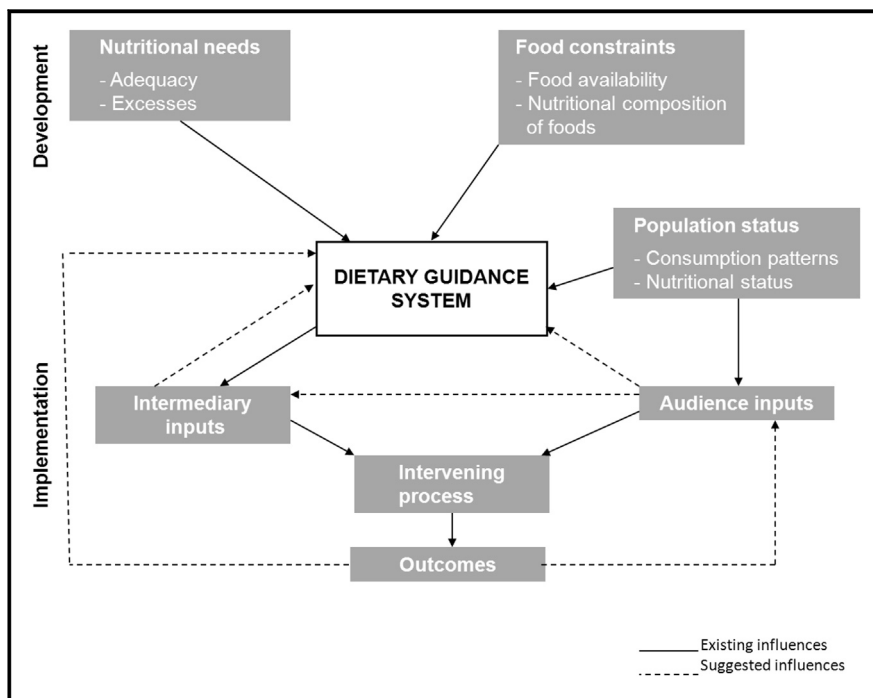


Figure 1. Framework for developing and implementing a dietary guidance system. (Reprinted from Gillespie A. A conceptual framework for developing a dietary guidance system. *J Nutr Educ.* 1985;17:139–142. Copyright [1985], with permission from Elsevier.)

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