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Healthy Eating, Physical Activity, and Healthy Weights Guideline for Public Health in Ontario

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A Quality Initiative of the
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Context and Scope of the Guideline

The intent of this guideline is to provide specific, actionable recommendations that will enable public health and other professionals working in chronic disease prevention to make decisions about the provision and support of programs and resources for the promotion of healthy eating and physical activity. These recommendations were developed using evidence from the public health literature and/or the expert opinion of the Guideline Development Group (GDG), and in consultation with a broad range of involved stakeholders. This guideline does not make recommendations regarding specific program or policy interventions but instead focuses on strategies that will support the selection and implementation of effective programs. In the Discussion section, several other sources of information regarding programs or tools that have been appropriately evaluated are identified. It is beyond of the scope of this guideline to address the operational capacity of public health departments in Ontario to implement these recommendations.

We anticipate that the implementation of these strategies will make it more likely that Ontario adults and children will live in an environment that promotes good health in their schools, communities, and workplaces. At a policy level there is a need for action and coordination by the federal, provincial, and municipal governments. Policy advocacy can happen at every level, and everyone can contribute and participate. Local public health can also play an advocacy role. The guideline can also serve as a starting point for the production of documents that provide more specific details on tools and implementation strategies that could be applied successfully in Ontario.

In early 2009 and shortly after the development of this Guideline, the Ministry of Health Promotion, in close collaboration with a steering committee and working group of public health professionals employed by local boards of health in Ontario, started working on the development of a Guidance Document on healthy eating, physical activity, and healthy weights. Guidance Documents on other topics were also developed. Draft copies of this Guideline were considered and used by the Working Group that drafted the *Healthy Eating, Physical Activity and Health Weights Guidance Document*. In January 2010, the Ministry of Health Promotion coordinated a consultation process involving public health agencies to review drafts of such Guidance comment. Final Guidance Documents are anticipated to be distributed in the spring of 2010.

Rationale for an Obesity Prevention Guideline

In 2004 in Ontario, 59% of adults and 28% of children and youth were either overweight or obese. Evidence from recent, large-scale systematic reviews by the World Cancer Research Fund has shown a convincing link between body fatness and an increased risk of esophageal, pancreatic, colorectal, postmenopausal breast, endometrial, and kidney cancers and a number of other chronic diseases, including diabetes, heart disease, and stroke.

The CCO *Report on Cancer 2020: A Call for Renewed Action on Cancer Prevention and Detection in Ontario* acknowledges the relationship between lifestyle factors and chronic disease prevention and sets a number of ambitious targets in this area. As one way of moving forward on this agenda, CCO initiated the Project in Evidence-based Primary Prevention (PEPP) in 2008. This *Healthy Eating, Physical Activity, and Healthy Weights Guideline for Public Health in Ontario* report is the first PEPP initiative and addresses the question:

What population-based strategies should be used by public health professionals, and other professionals working in chronic disease prevention, to prevent obesity among adults and children in Ontario schools, workplaces, and communities?

In partnership with the CCO PEBC, PEPP established a Guideline Development Group (GDG) to produce guidance for this question. The PEPP GDG was comprised of an Expert Steering Committee to oversee the project and three working groups to draft the guideline, with members from public health, government, non-governmental organizations, and CCO's Prevention Unit and the PEBC.

Development of this PEPP Guideline

The intended users of this guideline are public health and other professionals working to prevent chronic disease in Ontario, as well as other individuals or institutions that might take a leading role in implementing the recommendations. In order to ensure the relevance of this guideline for the Ontario population, the developers utilized the Ministry of Health and Long-Term Care's Ontario Public Health Standards (OPHS), released in January 2009, as a framework for organizing the recommendations. The evidence behind these PEPP recommendations was derived largely from a United Kingdom (UK) National Institute for Health and Clinical Excellence (NICE) guidance document (specifically NICE CG43 Section 3: Prevention Evidence Summary) that was based on systematic reviews of the public health literature up to December 2005. A discussion of the quality of the public health evidentiary base is in Section 3.2 of this guideline. The recommendations from the NICE document were mapped onto the relevant OPHS chronic disease prevention and child health requirements, and each recommendation was modified by the working groups to fit the Ontario context. The draft recommendations were reviewed by the PEPP Expert Steering Committee and by members of the target-user population, including public health professionals and health promotion practitioners, in a two-round consultation process. The draft guideline was then reviewed by the PEBC Report Approval Panel and by other experts in the public health field. Revisions were made to the guideline in response to comments from those reviewers.

Organization of this Guideline

The Table of Contents following this Summary outlines the structure of the document. The Introduction is next, followed by detailed descriptions of the project process in the Methods and the Results and then by the Recommendations, Discussion, and Conclusions. The recommendations are organized and presented in alignment with the relevant sections of the OPHS Standards, beginning with a recommendation relating to the foundational standard requirements for research, knowledge exchange, and program evaluation. This is followed by recommendations related to the OPHS Standards for Chronic Disease Prevention for elementary, secondary, and post-secondary schools (Requirement #3), for workplaces (Requirement #4), food premises (Requirement #5), municipalities (Requirement #6), community partners (Requirement #7), and priority populations (Requirement #8), public awareness (Requirement #11), and to links to programs and services (Requirement #12). Recommendations are also presented for the OPHS Standards for Child Health related to breastfeeding (Requirements #4, 5, 7, 8) and disease prevention (Requirement #11). In the Recommendations, each section begins with an OPHS requirement that is then followed by one or more relevant recommendations developed by PEPP.

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1. INTRODUCTION

Over the past several decades, dietary patterns have shifted toward a diet dominated by a higher intake of animal and partially hydrogenated fats and a lower intake of fibre. An increase in the number of jobs requiring little physical activity and the proliferation of mechanization have paralleled this transition, and an overall shift toward more sedentary lifestyles has occurred, for a variety of reasons. Obesity and associated disabling chronic diseases have flourished on a global scale (1), and modern populations find it difficult, if not impossible, to maintain a healthy body weight while living in an "obesogenic" environment of fast-food restaurants, automobiles, and remote controls.

Obesity and overweight are risk factors for a number of chronic diseases, including diabetes, heart disease, stroke, and some cancers. Based on extensive systematic reviews of the literature, the World Cancer Research Fund (WCRF) has presented convincing evidence of a link between body fatness and the increased risk of esophageal, pancreatic, colorectal, endometrial, kidney, and postmenopausal breast cancers. Accordingly, the WCRF recommends:

- Being as lean as possible within the normal range of body weight (body mass index of 18.5 to 24.9 kg/m^2),
- Being physically active as part of everyday life,
- Limiting consumption of energy-dense foods and sugary drinks,
- Eating mostly plant-based foods, and
- Breastfeeding of infants (breastfeed infants exclusively up to six months and continue with complementary feeding thereafter) (2).

Some countries have taken action to address this growing health problem and encourage their populations to make lifestyle changes that are in keeping with the WCRF's recommendations. For example, UK health authorities, where two third of adults and a third of children are overweight or obese, have recognized the potential health and economic consequences of the obesity epidemic and have recently published a cross-government strategy (3).

In 2004 in Ontario, 59% of adults, and 28% of children and youth were either overweight or obese (4). In that year, Ontario's Chief Medical Officer of Health released the *Healthy Weights, Healthy Lives* report, sounding the alarm that "...an epidemic of overweight and obesity is threatening Ontario's health (5)." In response, the Ontario Ministry of Health Promotion launched a preliminary action plan in June 2006 to promote healthy eating and active living. In January 2009, the Ministry of Health and Long-term Care (MOHLTC) released new Ontario Public Health Standards (OPHS) (6) and gave responsibility for certain standards, including chronic disease prevention and child health, to the Ministry of Health Promotion. The OPHS expressly directs public health units to promote healthy weights, healthy eating, and physical activity under these standards and calls for the use of evidence in developing and implementing programs. The intent of this present Project in Evidence-based Primary Prevention (PEPP) guideline, therefore, is to provide that evidence-based guidance. Each OPHS standard also specifies a goal, societal outcomes, and board of health outcomes and includes specific requirements or statements of action. For example, in the Chronic Disease Standards, requirement #5 states "[t]he board of health shall collaborate with local food premises to provide information and support environmental changes through policy development related to healthy eating...(6)."

The CCO *Report on Cancer 2020: A Call for Renewed Action on Cancer Prevention and Detection in Ontario* (7) recognizes the relationship between lifestyle factors and chronic disease prevention. Acknowledging the fact that 10% of Ontarians are obese, as measured by a Body Mass Index (BMI) of 30 kg/m^2 or over, the *Report on Cancer 2020* sets a number of targets and priorities, including having:

- 90% of Ontarians consume five or more servings of vegetables and fruit daily, and
- 90% of Ontarians participate in moderate to vigorous activity on most days of the week.

In 2008, as one way of moving forward on the ambitious agenda presented in *Report on Cancer 2020*, CCO began the PEPP as a pilot project, in partnership with CCO's Prevention and Screening Department and Program in Evidence-based Care (PEBC). PEPP is led by an Expert Steering Committee. Their first initiative, the *Healthy Eating, Physical Activity, and Healthy Weights Guideline for Public Health in Ontario*, addresses the question:

> *What population-based strategies should be used by public health professionals, and other professionals working in chronic disease prevention, to prevent obesity among adults and children in Ontario schools, workplaces, and communities?*

Ontario adults and children are the target population for this guideline. The primary intended users are the broad range of public health and other professionals working to prevent chronic diseases in Ontario. However, because other individuals or institutions, including schools and municipalities, might also take a lead role in implementing the recommendations, some are specifically targeted at them. The implementation of these strategies will make it more likely that Ontario adults and children will live in an environment that promotes good health in their schools, communities, and workplaces.

The public health field acknowledges that healthy weight promotion is complex, and that social, cultural and other factors shape the environments in which we play, work and learn. Overweight, body dissatisfaction, and low self-esteem are strong predictors of unhealthy weight-control behaviours, and such behaviours are often associated with other health-compromising behaviours or conditions, including alcohol and drug use, depression, suicide, and smoking in youth (8). Recent Canadian population-based studies confirm that weight concerns begin at an early age and the number of individuals with disordered eating attitudes and behaviours increases with age (9-10). Nearly a third (29.3%) of girls as young as 10 to 14 years of age report dieting to lose weight despite being *within a healthy weight range* (9-10). Armed with the philosophy of "first do no harm," public health managers and planners are advised to ensure obesity prevention programs are non-stigmatizing (11). There is increasing movement in academic and practice-based arenas to attend to the entire spectrum of body weight and health conditions, rather than to just a single diagnostic category, in the context of the "whole child/person" and not just the condition. A recent national symposium has called for an integrated approach to obesity and eating disorders prevention. A theoretical case has been made for several shared risk and protective factors that is increasingly supported by empirical work (12). Understandably, for the purposes of this report, the PEPP Expert Steering Committee has viewed obesity prevention through this integrated lens.

While healthy eating and physical activity are well-established contributors to the maintenance of a healthy body weight, the link between breastfeeding and obesity is not as well known. However, the WCRF found probable evidence of a link between having been

breastfed and a reduced later risk of obesity, even after controlling for such variables as parental obesity or socioeconomic status (2). Although breastfeeding targets are not included in the CCO *Report on Cancer 2020*, in light of the evidence, the PEPP Expert Steering Committee (Appendix 1) chose to include breastfeeding recommendations in this guideline. The WCRF also found convincing evidence for a decreased risk of pre- and postmenopausal breast cancer and a probable decreased risk of ovarian cancer among women who had breastfed their babies (2). Examining this link is beyond the scope of this report, because the general mechanisms through which lactation could plausibly protect against cancer are not related to obesity but rather occur through hormonal effects or changes to breast tissue. The PEPP Expert Steering Committee also provided breastfeeding-related recommendations because of a reported interest in the topic in the public health community. Breastfeeding recommendations have a special significance because they reinforce the argument that chronic disease prevention policies and actions should be addressed across the life course.

2. METHODS

Guideline Development

This report, and the other evidence-based guidelines developed by the PEBC, uses the methods of the Practice Guidelines Development Cycle (13). The core methodology for this project included an environmental scan, the adaptation of recommendations from an existing guideline, and a formal two-round web-based consultation process. The PEBC is supported by the Ontario MOHLTC through CCO. All work produced by the PEBC is editorially independent from its funding source. In order to improve the relevance of this guideline for Ontario, the MOHLTC's OPHS (6), released in January 2009, was used as an organizing framework for the recommendations.

2.1. Environmental Scan

An environmental scan was conducted to identify existing guidelines on obesity prevention. Searching for guidelines first, rather than for other types of evidence such as systematic reviews or randomized controlled trials (RCTs), is in keeping with established criteria for a hierarchy of public health evidence used when investigating public health questions (Figure 1 shows one of several similar graphic representations of levels of evidence). Some researchers have stated that placing qualitative surveys at the bottom of the evidence hierarchy, or even within the pyramid at all, is not appropriate because qualitative research answers different types of questions from quantitative. A proposed hierarchy of evidence for qualitative research has recently been proposed (14), but its usefulness has not yet been conclusively established (15). It is beyond the scope of this document to include a review of other proposed models for representing levels of evidence applicable to qualitative research.

Figure 1. Hierarchy of Public Health Evidence (16).

The environmental scan for existing guidelines included a search of international guideline developers identified by the PEBC as preferred sources because of their credibility and rigour of guideline development. These included the Scottish Intercollegiate Guidelines Network (SIGN), the American Society of Clinical Oncology (ASCO), and the National Institute for Health and Clinical Excellence (NICE). Additional searches included the National Guidelines Clearinghouse database and a Google (©2009) search. Expert Steering Committee members recommended that systematic reviews from the Effective Public Health Practice Project (EPHPP) should also be considered because of their applicability to the Ontario context. The EPHPP is an initiative of the Public Health Research, Education and Development Program (PHRED), which is jointly funded by the MOHLTC and the City of Hamilton Public Health Services.

The Expert Steering Committee recognizes that, by using this strategy, in contrast to a full systematic review, other possibly relevant, high-quality guidelines and evidence sources might have been overlooked. However, in the interests of efficiency and avoiding duplication, and capitalizing on the high-quality sources that were included, the Committee stands by its decision.

2.2. Adaptation

The adaptation process followed the ADAPTE methodology (17), a systematic approach to adapting guidelines developed in one jurisdiction for use in new cultural and organizational contexts. Twenty of the 23 steps in the method were applied. The three steps that were not completed included Step 20, endorsement by professional bodies most closely connected to the guideline topic; Step 21, consultation with source guideline developers; and Step 23, plan for aftercare of the adapted guideline.

In order to distribute the project workload, the relevant OPHS Chronic Disease Prevention and Child Health Requirements were divided among three working groups (Appendix 2), according to the following topics and under the stewardship of the Expert Standing Committee:

1. Schools and Workplaces
2. Healthy Policy and Capacity Building
3. Public Awareness and Population Skill-building

The working groups used the OPHS as a framework for organizing the recommendations of the guidance document chosen for adaptation, in order to produce a draft set of adapted recommendations. OPHS requirements for chronic disease prevention and child health were used as headings, and the recommendations from the chosen document were mapped onto them. Each working group assessed the acceptability and applicability of the mapped recommendations for the Ontario context. The groups created new recommendations as needed to fill any gaps that were identified or modified the language of the recommendations to make them consistent with the Ontario context. In order to support group opinions, other evidence that was not captured in the chosen guidance document or the environmental scan was brought forward as needed by members of the working groups. In order to address any overlap in the subject matter between groups, and to ensure the consistency of the draft recommendations, the Expert Steering Committee, which included the working group leads, reviewed all the recommendations prior to the start of the consultation process.

2.3. Stakeholder Consultation

A two-round stakeholder consultation was organized to obtain feedback on the recommendations from the targeted users of the PEPP guideline and to ensure that the recommendations were implementable and appropriate for practice in Ontario. Participating groups, organizations, and individuals were identified by the Expert Steering Committee. The stakeholder consultation was conducted electronically in order to reduce geographic barriers to participation. To solicit feedback on the draft recommendations and raise stakeholder awareness, an online survey tool was used in the first round of the process, and an e-mailed portable document format (PDF) form was used in the second round.

2.3.1. Round 1

The first round of the two-round consultation process took place from December 17, 2008 to January 18, 2009. As target users of the guideline, all 36 health units in Ontario were surveyed. Fifteen other Ontario organizations that were identified by the Expert Steering Committee (Appendix 5) as potential users of the guideline, or stakeholders with an interest in the implementation of the guideline, were also surveyed. The appropriate contact names for the health units were identified by telephoning each health unit and obtaining the name and contact information of the current chronic disease prevention manager. This list was cross-referenced with information provided by the Ontario Ministry of Health Promotion and the current contact list of the Association of Local Public Health Agencies. The contact persons for all other stakeholder organizations were gathered from the Expert Steering Committee. In two cases, because contact names were unknown, the organization was contacted directly for the name of the appropriate individual. All 51 organizations were presented with the draft *Healthy Eating, Physical Activity, and Healthy Weights Guideline for Public Health in Ontario* report in a web-survey format.

The participants were asked to rate their level of agreement with each of the 50 recommendations, using a 5-point Likert response scale (1. strongly disagree, 2. disagree, 3. neither agree nor disagree, 4. agree, 5. strongly agree). An opportunity to comment on each recommendation and on the overall survey was also provided. The original 50 draft recommendations that were included in the Round 1 stakeholder consultation are available from the PEBC on request.

In order to present the survey in a manageable way, recommendations were divided into the following 14 categories:

1. Elementary and Secondary Schools (10 recommendations)
2. Post-Secondary Schools (3 recommendations)
3. Workplaces (6 recommendations)
4. Food Premises (1 recommendations)
5. Municipalities (4 recommendations)
6. Communities (1) (5 recommendations)
7. Communities (2) (6 recommendations)
8. Priority Populations (4 recommendations)
9. Public Awareness (2 recommendations)
10. Supportive Environments for Breastfeeding and Child Health (3 recommendations)
11. Breastfeeding: WHO/UNICEF Baby-Friendly Initiative (1 recommendations)
12. Breastfeeding: Other Support (3 recommendations)
13. Breastfeeding: Priority Populations (1 recommendations)
14. Family-based Interventions (1 recommendations)

Stakeholders were asked to submit one survey per organization and were free to complete the survey as a group.

2.3.2. Round 2

The second round of the consultation process took place between March 16, 2009 and March 30, 2009. The original plan for the second round was to repeat the methods used in Round 1, using the Likert scale to assess the level of stakeholder agreement with each individual recommendation, revised using the Round 1 feedback that was received from stakeholders. In light of the high level of agreement with the recommendations in the first round (see Results section below and Appendix 6), the decision was made to change the Round 2 methodology from a consultation on each individual recommendation to an opportunity to comment on each section (e.g., Priority Populations) of the Recommendations and on the guideline as whole. Thus, Round 2 was reconfigured to give stakeholders an opportunity to view and validate the changes that had been made in response to Round 1 feedback. A PDF form was used in this round in order to make it easier for respondents to save and share the survey.

2.2. External Review

During the guideline development process, five targeted peer reviewers (including academic researchers and public health officials) from Ontario were identified by the Expert Steering Committee. Several weeks prior to completion of the draft report, the nominees were contacted by email and asked to serve as reviewers. Five reviewers agreed, and the draft report and a questionnaire were sent via email for their review. The questionnaire consisted of items evaluating the methods, results, and interpretive summary used to inform the draft recommendations and whether the draft recommendations should be approved as a guideline.

Written comments were invited. The questionnaire and draft document were sent out on August 26, 2009. Follow-up reminders were sent at two weeks (email) and at four weeks (telephone call). The PEPP Panel reviewed the results of the survey. All five reviewers replied by October 14, 2009.

3. RESULTS

3.1. Environmental Scan

Thirteen guidelines were identified through the environmental scan (see Appendix 3). Each document was assessed for its relevance for this project, date of issue, and completeness by the Research Coordinator. The December 2006 NICE guideline *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children* (18) is based on systematic reviews of the literature ending in December 2005. A review of the methodology of the other guidance reports and systematic reviews indicated that NICE was the most current guidance document available. NICE is internationally recognized for its comprehensive and high-quality guidelines. Their obesity guidance is broad in scope, encompasses clinical and public health recommendations, and applies to communities, workplaces, and schools, as well as to vulnerable groups. Based on these factors, the public health portion of the NICE guidance (specifically NICE CG43 Section 3: Prevention Evidence Summary) was chosen for adaptation. Other guidelines identified through the environmental scan were deemed inappropriate for various reasons, including an inappropriate clinical target audience, older search strategy, failure to use systematic review methods, and inappropriate target population.

3.2. Quality of the Public Health Evidentiary Base

The original recommendations generated by NICE were developed according to methods outlined in the document *Guideline Development Process – Information for National Collaborating Centres and Guideline Development Groups* (19). The methods were originally created for clinical guidelines and were adapted for the development of public health guidance. The work was supported by two public health collaborating centres in the UK that searched for and synthesized evidence for a range of subtopics, resulting in a series of public health evidence reviews.

According to NICE, each evidence review did the following:

- critically appraised the included studies,
- identified what components are effective for which groups and in which settings, and
- identified the inputs and process issues that had an impact on the development and delivery of effective interventions (19).

For each question, the highest possible level of evidence was selected. The highest rating for quality of evidence was given to high-quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias. Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias were also rated very highly. If a systematic review, meta-analysis, or RCT related to the question being asked existed, studies of a weaker design were ignored. Where the evidence base was limited, questions were addressed by identifying published expert narrative reviews by a project team and/or guidance development group

and which formed the basis of discussion papers written either by that or by a member of the development group. Relevant information for each included study was summarized in evidence tables, evidence statements, and narrative summaries.

Regarding the quality of the evidence for these recommendations, NICE found that:

> Only a few public health RCTs met the NICE critical appraisal criteria in full and it was rarely possible to be certain that, as required by the NICE critical appraisal processes, the overall effect was due to the study intervention. Studies often lacked (or failed to report) a description of the randomization process, concealment allocation and/or an intention to treat (ITT) analysis (18).

As the quotation above indicates, the evidence base to support public health interventions to improve healthy eating and active living is not well developed. There are several challenges associated with developing a high-quality public health evidence-base, which is inherently interdisciplinary in nature and based on evidence generated from the application of mixed methods. These include but are not limited to difficulties with implementing RCTs at the community level, insufficiently long time scales for judging the effectiveness of interventions, lack of consensus about appropriate assessment indicators, and failure to properly evaluate interventions. As a result, and also in recognition of the valuable contribution that personal experience and training can make, we used a combination of evidence and expert opinion to formulate the recommendations for public health practice contained in this report.

3.3. Quality Appraisal of the NICE Evidence-Based Guidance Document

The Appraisal of Guideline Research and Evaluation (AGREE) Instrument (20) was used to rate the NICE guidance. The purpose of the AGREE Instrument is to provide a framework for assessing guideline quality, which includes judgements about the methods used for developing the guidelines, the content of the recommendations, and the factors linked to their uptake.

The NICE guidance was assessed with the AGREE instrument by two PEBC staff members and one working group member. The results of the ratings for each reviewer are presented in Appendix 4. The document was rated highly in the domains of Scope and Purpose, Rigour of Development, Clarity and Presentation, Applicability, and Editorial Independence. Overall, the quality ratings were favourable, with scope and purpose, rigour of development, and applicability domains being particularly strong.

3.4. Adaptation

The process of adapting the NICE recommendations occurred over the summer of 2008. The three working groups met separately several times in teleconference and assessed each recommendation for its acceptability and applicability (ADAPTE Step 15: Tool 15) (17) for the Ontario context. The adaptation process resulted in some additional resources being brought forward by the working group members (Table 1). These documents were utilized according to the opinions of the working groups to modify or create new recommendations to fill identified gaps. For example, the NICE guidance document referenced UK standards for healthy eating and physical activity. Working group #3 recommended modifying these

recommendations to Canadian standards, using *Eating Well with Canada's Food Guide* (20) and *Canada's Physical Activity Guide to Healthy Active Living* (21). Thus, resources gathered nonsystematically (i.e., on the basis of "opinion of the working group") were used when deemed necessary in order to supplement the evidence-based NICE guidance located through the environmental scan.

The Research Coordinator made additional revisions to the recommendations, which were then distributed again within each working group for approval. When each group had approved its own recommendations, all were compiled and assessed by the working group leads for cohesiveness and completeness. The draft recommendations were approved by all three working group leads and by the Expert Steering Committee in October 2008.

Table 1. Additional resources recommended by working groups.

Recommended by	Topic	Source
Working Group #1 - Schools and Workplaces	Current Ontario context for healthy schools	*Foundations for a Healthy School* (21) (Ontario Ministry of Education's framework for a healthy school)
	Specialist physical activity instructors	*Effectiveness of Physical Activity Enhancement and Obesity Prevention Programs in Children and Youth*, 2004 (22) (Effective Public Health Practice Project systematic review)
	Physical activity initiatives as part of a workplace health promotion program.	*Promoting Physical Activity in the Workplace*, released 2008 (23) (NICE guidance document)
Working Group #2 – Healthy Policy and Capacity Building	Childcare centres	Ontario Day Nurseries Act (24)
Working Group #3 – Public Awareness and Population Skill-building	Canadian recommendations for healthy eating, food premises	Canada's Food Guide (25)
	Canadian recommendations for physical activity	Canada's Physical Activity Guides (26)
	Breastfeeding	• *Nutrition for Healthy Term* Infants, 2005. (27) (Canadian Paediatric Society, Dietitians of Canada and Health Canada) • *The Canada Prenatal Nutrition Program: a Decade of Promoting the Health of Mothers, Babies and Communities* ,2007 (28) (Public Health Agency of Canada) • Breastfeeding Position Paper, 2007 (29) (Ontario Public Health Association)
	Canadian policy perspective on overweight and obesity	*Obesity and Overweight in Canada: A Population Health Perspective*, 2004 (30)
Round 1 consultation	Ontario context for workplace health promotion initiatives	*Conditions for Successful Workplace Health Promotion Initiatives* (Presentation slides; provided by Nancy Dubois, The Health Communication Unit (THCU) at The Dalla Lana School of Public Health, University of Toronto; available upon request or at http://www.thcu.ca/Workplace/infoandresources.htm#res

3.5. Stakeholder Consultation

3.5.1. Round 1

Response rate

Of the 36 health units polled in the first round of the survey, 23 provided full responses, and three provided partial responses, for an overall response rate of 73%. Eleven full responses and one partial were received from the 15 other stakeholders, yielding a rate for this group of 80%. The overall response rate for all respondents was 75%. Nonresponse items (i.e., "don't know" and "not applicable") were removed from the calculation of percent agreement. The number of responses received for each individual question ranged from 28 to 33.

Level of agreement

The overall level of agreement with the recommendations was high (greater than 80% stakeholder agreement for 44 of 50 recommendations, 70 to 79% agreement for five of the recommendations, and 60 to 69% for one of the recommendations). A complete list of agreement ratings for each question in Round 1 is presented in Appendix 6.

Comments

Over five hundred comments were received, for an average of over ten comments per recommendation. These comments were used to guide modifications to the recommendations, and in addition, several themes were also identified that applied to the guideline as a whole. Although identifying themes was not originally an intention of this project, the Expert Steering Committee decided that recording them for the public health community's future reference was important, and they are outlined below:

1. Capacity. Some recommendations garnered high levels of agreement, while at the same time eliciting concern about their feasibility, given current financing and staffing levels. Certain recommendations were seen as "not the role" of public health. Where there was a high level of agreement combined with concerns about feasibility, our interpretation was that the public health community recognized the importance of the recommendations and would be willing to play a role in these areas if sufficient resources were made available.

2. Provincial-level coordination. We heard that several recommendations would be better implemented at the provincial level, in order to coordinate efforts and achieve an economy of scale, for example, locally-based initiatives related to point-of-purchase schemes in supermarkets. On a related note, provincial legislation is desired for support of initiatives such as healthier food provision in vending machines in municipal arenas and recreation centres.

3. Individual-level interventions. We received feedback that this level of intervention was not appropriate for public health to undertake—public health professionals should instead be focused on population-level interventions.

4. Specific interventions or programs. The comments included calls by stakeholders for specific interventions or programs that could be used to implement these recommendations. We have made a list of these items (e.g., EatSmart!, NutriSTEP) that will be forwarded to those responsible for developing the guidance documents for the OPHS. This PEPP guideline, however, does not mention specific interventions or programs because it is intended to serve as the foundation for more detailed guidance documents.

5. Image-framing strategies. Stakeholders emphasized framing the obesity prevention strategy in positive terms, which was in agreement with the opinions expressed by members of the three separate working groups during the adaptation process. More specifically, all agreed that healthy weights should be achieved through strategies that emphasize healthy eating, active living, and positive body image, rather than restrictive dieting or negative outlooks on body image and size.

Revising the Recommendations

Based on the results of the first round, including the extensive number of comments that were received from respondents, changes were made to the recommendations. Comments on the recommendations for each working group were assessed by the project Research Coordinator, the respective working group leads, and an individual representing the PEPP secretariat. Decisions to make revisions to the original draft recommendations were based on the frequency of the comments (e.g., we received numerous comments requesting that we use the term "healthy eating" rather than "diet") and whether incorporating a suggestion enhanced clarity and was in keeping with the original intent of the recommendation. Some comments helped us adjust the recommendations to better reflect the Ontario context (e.g., use of the Canadian Society for Exercise Physiology's term Personal Fitness and Lifestyle Consultant, rather than "physical activity expert").

Additionally, in response to comments, the language of the recommendations was revised to clarify the role of public health, especially with respect to recommendations that advocate for partnerships or for public health to support the initiatives of other individuals or organizations, such as schools and municipalities, for example. We also attempted to make clear that, while public health initiatives should be directed at populations, tailored and targeted interventions such as interactive websites can fit within that framework.

The three working group leads, PEPP secretariat representatives, the Research Coordinator and the PEBC Assistant Director met as a group to discuss the recommendations that obtained less than 80% stakeholder agreement to ensure that these recommendations were adequately revised and stakeholder feedback incorporated.

Finally, the overall number of recommendations was reduced from 50 to 48 in response to suggestions to merge some items. A new section, Foundational Standard, was added, bringing the total number of sections to 15.

3.5.2. Round 2

Feedback from the first round indicated that some stakeholder organizations, particularly public health units, were completing the survey in teams. Therefore, for the second round of the survey, a PDF form was used in order to make it easier to save and share the survey.

Response Rate

As mentioned in the Methods section, this round was designed to give stakeholders an opportunity to view and validate the changes that had been made to the recommendations based on the feedback received in Round 1 of the consultation. Eighteen responses were received for the second round of the consultation process. The overall response rate was 35%, substantially lower than the first round. Because stakeholders were largely in agreement with the recommendations in the first round of the consultation, this may have led some of them to decide that it was not necessary to comment a second time. Another reason for the low participation could have been a lack of interest in reviewing the recommendations

a second time because of the length of the guideline. An extension to the deadline for submission was implemented in an attempt to increase the response rate, but this did not result in a substantial improvement, indicating to us that there was not a high level of interest in commenting on the guideline a second time. Given that the objective of stakeholder input was for stakeholder consultation rather than consensus, no further measures were taken to increase the Round 2 response rate.

Level of Agreement

As a Likert scale was not used in Round 2 of the consultation, there are no rating scores to report.

Comments

Despite the low number of surveys returned in this round of the consultation, we did receive many comments from those organizations that did respond. The following themes noted in the comments were:

1. Provincial-level coordination. This was a recurring theme in both phases of the consultation process. We heard that some recommendations would be difficult to implement without provincial policy and funding support, for example, the recommendation to use specialist physical education teachers in elementary schools.

2. Guideline audience. Several suggestions were made that all recommendations be explicitly directed at public health professionals. Because the target audience for this guideline includes other professionals working in chronic disease prevention, and might be applicable to individuals in other occupations or organizations that could partner in chronic disease prevention initiatives, we chose not to modify the recommendations in this way.

3. Healthy eating and physical activity. Respondents commented that healthy eating and physical activity be promoted together and recommended that we include both in our recommendations wherever possible.

3.5. Revising the Recommendations

An agreement rating scale was not presented during Round 2, but many comments were received that included suggestions for modifying some of the recommendations. These suggestions were assessed by the project Research Coordinator, and changes were made based on frequency of the comments and whether the change enhanced clarity and was in keeping with the original intent of the recommendation. One additional recommendation was added as a result of splitting two recommendations; thus, the number of recommendations after Round 2 of the consultation process was 49. The Expert Steering Committee reviewed and approved these changes.

3.6. External Review

Five responses were received from five reviewers. Key results of the feedback survey are summarized in Table 2.

Table 2. Responses to nine items on the targeted peer reviewer questionnaire.

	Reviewer Ratings (N=5)					
Question	N/A	Lowest Quality (1)	(2)	(3)	(4)	Highest Quality (5)
1. Rate the guideline development methods.				2+1*		2
2. Rate the guideline presentation.				1	3	1
3. Rate the guideline recommendations.				1	1	3
4. Rate the completeness of reporting.					3	2
5. Does this document provide sufficient information to inform your decisions? If not, what areas are missing?		1		2	2	
6. Rate the overall quality of the guideline report.			1		2	2
		Strongly Disagree (1)	(2)	(3)	(4)	Strongly Agree (5)
7. I would make use of this guideline in my professional decisions.	1		1		2	1
8. I would recommend this guideline for use in practice.	1		1		2	1

* 1 reviewer rated the guideline development methods as 3.5.

9. **What are the barriers or enablers to the implementation of this guideline report?**

Several reviewers commented that the main barrier to the implementation of the guideline would be the capacity of health units and staff to implement the recommendations due to the availability of resources, skills, and training and the resistance to change. Reviewers recommended that training and technical assistance be provided to staff. Other barriers identified were the lack of specific examples for implementation, the incompleteness of the evidence base for this document (did not include more recent evidence) and confusion in the field regarding how this document relates to the OPHS guidance documents that are expected to be released in the coming year.

The enablers of the implementation cited were the easy-to-read recommendations, the alignment of this document with the OPHS standards, and the fact that the recommendations are based on evidence.

Summary of Written Comments

The main points contained in the written comments were:

1. The evidence base is incomplete and out of date, in that it is largely derived from the NICE search to December 2005.
2. More clarity is required regarding how stakeholder opinion was obtained and how a consensus opinion was achieved.
3. The limitations of systematic reviews based on RCT evidence for public health and obesity prevention should be addressed.

4. More information on how to implement the recommendations and/or recommendations on specific programs would be helpful. Provide information on practical resources, protocols and materials.
5. This document needs to be clearly distinguished from other guidance being developed for public health practice.
6. The recommendations are appropriate, well documented and they make sense.
7. Several formatting and editorial changes were suggested.

Modifications/Actions in Response to Comments

1. At the outset of this project, the PEPP Expert Steering Committee decided to adapt the NICE guidance document for use in Ontario, using the extensive systematic review of public health evidence as the basis for the PEPP guideline, with limited additional searching. We began the task of adapting the NICE recommendations to the Ontario context in July 2008. The guideline development process has been presented in a transparent manner, and readers are encouraged to use their judgement with respect to implementing the recommendations. New evidence is published regularly, and several systematic reviews that are relevant to this guideline have been published since December 2005 and can be located through resources such as the *health-evidence.ca* website (http://health-evidence.ca/). A search for reviews on obesity prevention, physical inactivity prevention, and healthy eating at *health-evidence.ca* in November 2009 identified 29 papers published between 2006 and 2009. For 13 reviews, the literature search ended in 2005 or earlier, or the dates searched were not stated. Two reviews included literature to 2008, six included literature to 2007, and eight included literature to 2006. Several recent reviews note that there are significant methodological limitations to this literature, including heterogeneity in study design, quality, intervention strategies and effects, and measured outcomes.
2. Modifications have been made to the text to further clarify the consultation process.
3. It is well recognized that RCT study designs may be impractical and/or inappropriate for public health interventions, and much of the public health literature consists of uncontrolled observational studies that are considered to be a lower level of evidence. At present time, a standardized model for synthesizing the results of observational studies is unavailable, but see (31) for a recent discussion of this issue and a summary of methods to address it.
4. It is beyond the scope of this document to make recommendations regarding specific programs; other resources to aid in these decisions are identified in the Discussion.
5. Further clarification regarding the context for this guideline and other guidance documents that are forthcoming from the Government of Ontario has been included in the section "Context and Scope of this Guideline".

4. RECOMMENDATIONS

The OPHS (6) served as the organizational framework for reporting the recommendations. For each of the 15 relevant OPHS topic areas, we present the standard first (italics), followed by the associated requirements. Note that the requirements are numbered according to the OPHS standards; for example, the first standard addressed is the foundational standard for which the requirements that are relevant to this guideline are #8 through #13. The recommendations from the PEPP are presented after the standard, along with the evidentiary source used to inform the recommendations. The majority of the recommendations were adapted from a guideline and systematic review produced by the UK guidance development organization NICE (1). The final recommendations are the result of this adaptation, contributions from the project Expert Steering Committee and working groups, and a two-round consultation process that gathered the opinions of stakeholders and end users in Ontario. Source information is presented after each recommendation. Working definitions of several terms used in the recommendations are compiled in the Glossary that follows the Conclusion section of this document.

I. Foundational Standard

This recommendation relates to the OPHS Foundational Standards (2) for:

Research and Knowledge Exchange:
#8. The board of health shall engage in knowledge exchange activities with public health practitioners, policy-makers, community partners, health care providers, and the public regarding factors that determine the health of the population and support effective public health practice gained through population health assessment, surveillance, research, and program evaluation.
#9. The board of health shall foster relationships with community researchers, academic partners, and other appropriate organizations to support public health research and knowledge exchange.
#10. The board of health shall engage in public health research activities, which may include those conducted by the board of health alone or in partnership or collaboration with other organizations.

Program Evaluation:
#11. The board of health shall routinely monitor program activities and outcomes to assess and improve the implementation and effectiveness of programs and services, including collection, analysis, and periodic reporting of indicators related to inputs, resources, implementation processes, reach, outputs, and outcomes.
#12. The board of health shall conduct program evaluations when new interventions are developed or implemented, or when there is evidence of unexpected operational issues or program results, to understand the linkages between inputs, activities, outputs, and outcomes.
#13. The board of health shall use a range of methods to facilitate public health practitioners' and policy-makers' awareness of the factors that contribute to program effectiveness.

PEPP Recommendation

As stated in the Foundational Standard and accompanying Protocol, the assessment, planning, delivery, management and evaluation of public health programs and services need to be based on local epidemiology and evidence of effective interventions. It was beyond the scope of the working groups to do a comprehensive critique of the methodologies employed in all the primary studies included in the NICE review. Many public health programs are complex interventions which require the use of valid and reliable assessment and surveillance tools; as well as qualitative, quantitative and mixed-method approaches to assess program need, effectiveness and efficacy.

1. Statistical analysis techniques that control for contextual as well as individual characteristics (multilevel and hierarchical modelling techniques) are appropriate and recommended in research studies investigating public health interventions. Quantitative research studies that focus solely on individual-level differences are not appropriate.

Source: *Working group opinion, based on multilevel modelling literature. (For an example, see Duncan C, Jones K, Moon G. Context, composition and heterogeneity: using multilevel models in health research. Soc Sci Med J. 1998;46(1):97-117.)*

II. Elementary and Secondary Schools

The recommendations relate to OPHS Chronic Disease Prevention Requirement #3.
The board of health shall work with school boards and/or staff of elementary and secondary and post-secondary educational settings, using a comprehensive health promotion approach, to influence the development and implementation of healthy policies and the creation or enhancement of supportive environments to address healthy eating, healthy weights and physical activity. These efforts shall include: assessing the needs of the educational settings and assisting with the development and/or review of curriculum support.

PEPP Recommendations

1. Public health professionals should support and encourage school administrators, in collaboration with school staff, parents, and students, to assess the whole school environment, including recess and before and after-school activities, to ensure that the ethos of all school policies helps children and youth to eat a healthy diet, be physically active, and maintain a healthy weight in accordance with public health resources and capacities based on best practices. This also includes policies, guidelines, and practices related to the Foundations for a Healthy School: high-quality instruction and programs, a healthy physical environment, a supportive social environment, and community partnerships.

Source: *NICE (Obesity. Prevention evidence summary 9: school-based interventions; 296-316) (13) and Ontario Ministry of Education (Foundations for a Healthy School) (16).*

2. If short-term interventions and one-off events are carried out, they must be embedded in a whole school approach that is consistent with the *Foundations for a Healthy School*. Short-term interventions and one-off events are insufficient on their own.

Source: *NICE (Obesity. Prevention evidence summary 9: school-based interventions; p. 296-316) (13) and Ontario Ministry of Education (Foundations for a Healthy School) (16).*

3. Public health professionals should work in partnership with schools to provide training and support for administrators, teachers, support staff, cafeteria or catering staff, parent and student leaders, and food service and other volunteers, regarding healthy-school policies or initiatives and their implementation. Key concepts are healthy eating, active living, and sensitivity training, which include an appreciation of the impact that adult role models may have on students.

Source: *Adapted from NICE (Obesity. Prevention evidence summary 9: school-based interventions; p. 296-316) (13) by the working group.*

4. Public health professionals should work in partnership with schools to promote the eating of lunches by children and youth in a pleasant, sociable, and safe school environment. Younger children should be supervised at mealtime and, if possible, school staff should eat with the children in order to provide positive role modelling and monitor the eating environment. Adequate time should be provided for eating lunch.

Source: *Adapted from NICE (Obesity. Prevention evidence summary 9: school-based interventions; p. 296-316) (13) by the working group.*

5. Public health professionals should encourage schools to establish partnerships and link with organizations and professionals, including those involved in local strategies, to promote physical activity and healthy eating for children and young people. The messages and values of these partners should be consistent with public health policy.

Source: *Adapted from NICE (Obesity. Prevention evidence summary 9: school-based interventions; p. 296-316) (13) by the working group.*

6. Public health professionals should advocate, through provincial and board-level coalitions and partnerships with educators and school boards, for physical education specialists to provide physical education instruction in schools and/or supervise generalist teachers in physical education classes. Generalist teachers who are leading physical education classes should have access to mentoring from specialists to maximize the benefits of physical activity instruction that students receive.

Source: *Thomas H, Ciliska D, Micucci S, Wilson-Abra J, Dobbins M.* Effectiveness of Physical Activity Enhancement and Obesity Prevention Programs in Children and Youth. *(http://old.hamilton.ca/phcs/ephpp/Research/Summary/2004/HealthyWeightsFull2004.pdf) (17)*

7. Public health professionals should encourage school staff delivering physical education, sport, and physical activity to promote inclusive activities that children and youth find enjoyable and can participate in outside school hours, and throughout their adult lives. This includes opportunities to participate in structured and unstructured, lower cost, non-competitive sports and recreational activities. Children's confidence and understanding of why they need to continue physical activity throughout life should be developed as early as possible.

Source: *Adapted from NICE (Obesity. Prevention evidence summary 9: school-based interventions; p. 296-316) (13) by the working group.*

8. Staff and stakeholders planning physical activity and healthy eating related programs or policy interventions should involve children and youth in the planning and assess potential barriers and facilitators to the planned interventions (i.e., ensuring interventions are safe, accessible, affordable, and appealing).

Source: Adapted from NICE (Obesity. Prevention evidence summary 9: school-based interventions; p. 296-316) (13) by the working group.

9. All programs aimed at improving eating habits and physical activity levels should take into account mental well-being, and emphasize healthy growth and development, since unintended harmful consequences may occur as a result of overweight/obesity prevention initiatives (e.g., over-emphasis on weight, children adopting the healthy eating messages in extreme ways). Programs should address such topics as screen time use, media literacy, dealing with bullying, and building positive self-esteem, and fit within a whole school approach.

Source: Opinion of the working group.

10. Where possible, parents should be directly involved in school-based healthy eating and active living interventions through, for example, special events, after-school activities, newsletters, and information that is consistent with guidelines that are being followed by the schools as outlined in *Foundations for a Healthy School*. Public health professionals should encourage parental involvement on committees, including school councils, that make decisions about policy and supportive environments for healthy eating and active living.

Source: adapted from NICE (Obesity. Prevention evidence summary 9: school-based interventions; p. 296-316) (13) by the working group.

III. Post-Secondary Schools

The recommendation relates to OPHS Chronic Disease Prevention Requirement #3.
The board of health shall work with school boards and/or staff of elementary and secondary and post-secondary educational settings, using a comprehensive health promotion approach, to influence the development and implementation of healthy policies and the creation or enhancement of supportive environments to address healthy eating, healthy weights and physical activity. These efforts shall include: assessing the needs of the educational settings and assisting with the development and/or review of curriculum support.

PEPP Recommendation

1. Public health should work to establish and maintain partnerships with student health services in postsecondary educational settings to promote a comprehensive health promotion approach throughout the institution. This includes the promotion of healthy eating and active living (e.g., providing consistent information to the student population or priority subpopulations about food skills and healthy eating; coping with stress, including managing the transition to the postsecondary setting life skills; and opportunities for physical activity).

Source: Opinion of the working group.

IV. Workplaces

The recommendations relate to OPHS Chronic Disease Prevention Requirement #4.
The board of health shall use a comprehensive health promotion approach to increase the capacity of workplaces to develop and implement healthy policies and programs, and to

create or enhance supportive environments to address healthy eating, healthy weights, and physical activity.

PEPP Recommendations

1. Public health professionals should promote the use of situational assessments to create workplace health promotion programs that include awareness-raising activities, education/skill-building opportunities, environmental supports, and policy options.

Source: Opinion of the working group.

2. Public health professionals should promote interventions that take an interdisciplinary approach, with the following core principles:
   - Senior management involvement, including engaging senior management "champions"
   - Active engagement of staff through participatory planning
   - Primary focus on employees' needs, addressing the causes of behaviour that contributes to increased risk of chronic diseases
   - Optimal use of on-site resources and coordination with departments such as Occupational Health and Safety and Human Resources
   - Integration and alignment of workplace health policies with the organization's corporate mission, vision, and values, supporting both short and long-term goals
   - Recognition that a person's health is determined by an interdependent set of factors
   - Tailoring to the unique features of each workplace environment
   - Evaluation, including a clearly defined and realistic set of process and outcome measures
   - Long-term commitment
   - Involvement of employees' families, where possible, as social support is a recognized condition of creating and sustaining healthy behaviours

Source: Adapted from the THCU Conditions for Successful Workplace Health Promotion Initiatives and NICE (Obesity. Prevention evidence summary 10: workplace interventions; p. 317-27) (13) by the working group.

3. As identified in the situational assessment, public health professionals should provide support for workplaces that are ready to implement a sustained workplace health promotion program. This program needs to be part of an overall comprehensive strategy that will encourage employees to be more physically active and eat well, with the objective of improving their sense of well being. Where appropriate and feasible, this should be provided on the work premises. It should provide links to services that already exist in the community (e.g., services of Personal Fitness and Lifestyle Consultant, registered dietitians), advice, and other information or resources.

Source: adapted from NICE (Obesity. Prevention evidence summary 10: workplace intervention;. p. 317-27) (13) by the working group.

4. Public health professionals should support workplaces that are developing healthy eating initiatives. These initiatives, as part of a workplace health promotion program, should be sustained and include the following components:
   - Actions to improve food and beverage choices in the workplace, including cafeterias, catering and vending machines, should be supported by tailored educational and promotional programs such as a behavioural intervention and environmental changes.
   - Active and continuous promotion of healthy food and beverage choices in cafeterias, catering, vending machines, and shops for staff and clients, according to existing

provincial healthy eating standards/guidelines. Longer, interactive behavioural intervention efforts (e.g., self-assessment materials, professionally led direct education and skill-building workshops) are better than one-time events or more passive efforts such as the use of printed materials.

- Supportive environmental changes such as heavily advertised point of purchase information strategies and/or changes in food availability or cost, to encourage healthier eating.
- Physical environments that promote healthy eating, such as the availability of a designated lunch room, and appliances such as a refrigerator and microwave, as well as nutrition guidelines/policies (e.g., for foods served at meetings and functions).

For such a program to be effective, commitment from senior management, enthusiastic catering management, a strong occupational health lead, links to other on-site workplace health promotion initiatives, and supportive pricing policies that subsidize healthier food and beverage choices are likely to be needed.
***Source:** Adapted from NICE (Obesity. Prevention evidence summary 10: workplace interventions; p. 317-27) (13) by the working group.*

6. Healthy weights initiatives that focus on healthy eating and physical activity as part of a workplace health promotion program should be sustained and include a positive health education approach, which fosters motivation in the form of workplace support. Educational counselling about weight loss or "controlling your weight" is **not recommended** as an overall workplace strategy because the treatment of obesity requires a very specialized multidisciplinary approach in a supervised clinical setting after a thorough and appropriate clinical assessment.

***Source:** Opinion of the working group.*

7. Physical activity initiatives as part of a workplace health promotion program should be sustained and may include the following components:
   - Incentive schemes such as flexible hours, and practices and policies that encourage employees to walk, bike, or use other modes of transport involving physical activity.
   - Where possible, encourage employees to move around more at work (for example, by walking to external meetings) and support recreational opportunities such as lunchtime walks and the use of local recreation facilities.
   - Information about safe walking and biking routes and encouragement for employees to take short walks during work breaks.
   - The effective dissemination of information (including written information) on how to be more physically active and on the health benefits of such activity. This could include information on local opportunities to be physically active (both within and outside the workplace) tailored to meet specific needs, for example, the needs of shift workers.
   - Ongoing advice and support to help employees plan how they are going to increase their levels of physical activity.
   - Information on where to access confidential, independent appraisal for the evaluation of physical fitness administered by a certified Personal Fitness and Lifestyle Consultant.
   - Signs at strategic points and written information to encourage employees to use the stairs rather than elevators if they can. Environmental improvements in stairwells, such as redecoration, motivational signs, and music may increase stair use. Posters alone may be ineffective or effective only while the posters are in place.

- A supportive physical environment such as providing showers and secure bike parking.
- Encouraging employees to set goals and self-monitor on how far they walk and bike.

Source: *Adapted from* NICE *(Obesity. Prevention evidence summary 10: workplace interventions; p. 317-27) (13) by the working group with contributions from the NICE guidance document* Promoting Physical Activity in the Workplace, *released May 2008 (available at* http://www.nice.org.uk/PH013*) (18).*

V. Food Premises

The recommendation relates to OPHS Chronic Disease Prevention Requirement #5.
The board of health shall collaborate with local food premises to provide information and support environmental changes through policy development related to healthy eating.

PEPP Recommendation

1. With support from provincial organizations, public health professionals should encourage stores, supermarkets, restaurants, and cafes to promote healthy eating choices such as increased fruit, vegetable, and whole grain consumption and decreased overall saturated and trans fat intake (i.e., choices that are consistent with *Eating Well with Canada's Food Guide*). Strategies should include information such as signs and posters at the point of purchase and encouraging these food premises to adopt competitive pricing and motivating positioning of healthier products.

Source: NICE *(Obesity. Prevention evidence summary 12: broader community interventions (No.5); p. 357-63) (13) and* Eating Well with Canada's Food Guide *(20).*

VI. Municipalities

The recommendations relate to OPHS Chronic Disease Prevention Requirement #6.
The board of health shall work with municipalities to support healthy public policies and the creation or enhancement of supportive environments in recreational settings and the built environment regarding healthy eating, healthy weights and physical activity.

PEPP Recommendations

1. Public health should work with municipalities and industry, other levels of government, and voluntary organizations to create and manage more safe spaces for both spontaneous and planned physical activity, considering that enhanced access to space for physical activity can increase physical activity levels. This would include:
   - Providing facilities such as cycling and walking routes, cycle parking, safe play areas, and area maps.
   - Making streets cleaner and safer, through measures such as traffic calming, pedestrian crossings, cycle routes, lighting, and walking schemes.
   - Environmental improvements to buildings and spaces that encourage people to be more physically active (e.g., positioning and signing of stairs, entrances, and walkways).
   - Targeted behavioural change programs, which appear to change travel behaviour of motivated groups. Such programs should consider in particular people who require

tailored information and support, especially inactive, vulnerable (e.g., low income; disabled) groups.
- Auditing the needs of local users to engage all potential local partners and establish local ownership.

Source: *Adapted from NICE (Obesity. Prevention evidence summary 12: broader community interventions; p. 347-63) (13) by the working group.*

2. Public health should promote policy and environmental supports that increase supply and access to healthier foods and beverages in vending machines and snack bars in municipal recreation centres, arenas, and at municipally run events. Successful sales of healthy options can be facilitated by user involvement; appropriate, highly visible location and ongoing regular provision (e.g., making sure that vending machines are in working order); promotional signage; and competitive pricing relative to less healthy options.

Source: *Opinion of the working group based on NICE evidence reviews (Obesity. Prevention evidence summary 10: workplace interventions (No.10.4.1.3); p.324) (13).*

3. With information and advice from public health, municipalities should be encouraged to lead by example in developing healthy eating and active living policies within their own workplaces, and within the programs that they deliver to the public, given their potential for influence the local community. Supports within the workplace should include the policies and activities outlined under OPHS Chronic Disease Requirement #4 (see this guideline, IV. Workplaces).

Source: *Opinion of the working group.*

4. Public health should collaborate with municipal governments, retailers, and community organizations to improve access to healthy food. Strategies should be appropriate for the local context and take advantage of local opportunities. Examples include community-shared agriculture and community gardens and emphasizing more accessible food sources (e.g., local farmers' markets).

Source: *adapted from NICE (Obesity. Prevention evidence summary 12: broader community interventions; p. 347-63) (13) by the working group.*

5. Public health should encourage municipal partners, including planning, transport, and leisure services, to engage with the local community to identify environmental barriers to healthy eating and active living, including barriers experienced by vulnerable (e.g., low income, disabled) populations. This should include:
   - An assessment, including an audit of the food environment, developed collaboratively with the board of health and local residents, businesses, and institutions to engage all potential local partners and establish local ownership.
   - An assessment (ideally by doing a health impact assessment) of the impact of municipal policies on the ability of communities to create supportive environments in which individuals can be physically active and eat a healthy diet. The needs of population subgroups should be considered because barriers may vary by, for example, age, gender, social status, ethnicity, religion, and whether an individual has a disability.
   - Barriers identified in this way should be addressed.

Source: *adapted from NICE (Obesity. Prevention evidence summary 12: broader community interventions; p. 347-63) (13) by the working group.*

6. Public health professionals should advocate for transportation policy initiatives. Policy should include standards for access and availability of public transportation, opportunities for active transportation, and plans that link various modes of active and nonactive transportation and create hubs. Municipality-wide changes that make it easier and safer to walk, cycle, and use public transport have the potential to make active transport more appealing to local users.

***Source:** adapted from <u>NICE</u> (Obesity. Prevention evidence summary 12: broader community interventions; p. 347-63) (13) by the working group.*

VII. Improving Capacity of Community Partners

The recommendations relate to OPHS Chronic Disease Prevention Requirement #7.
The board of health shall increase the capacity of community partners to coordinate and develop regional/local programs and services related to: healthy eating, including community-based food activities, healthy weights and physical activity. These efforts shall include: mobilizing and promoting access to community resources; providing skill-building opportunities; and sharing best practices and evidence for the prevention of chronic diseases.

PEPP Recommendations

1. All community programs to increase activity levels and encourage healthy eating should address the concerns of local people (i.e., the targeted community) from the outset. A situational assessment should be used to determine relevant programming, and interventions should be context specific. Concerns identified by the situational assessment could include the availability of services or confusion over mixed messages in the media about weight, diet, and physical activity.

***Source:** Adapted from <u>NICE</u> (Obesity. Prevention evidence summary 12: broader community interventions. No.11; p. 349) (13) by the working group.*

2. Interventions to encourage healthy eating and physical activity should be multifaceted (for example, awareness raising, education and skill building, environmental supports, and policy development) and part of a comprehensive health promotion strategy.

***Source:** Adapted from <u>NICE</u> (Obesity. Prevention evidence summary 11: interventions led by health professionals; p. 328-46) (13) by the working group.*

3. Public health professionals should use their expertise in communications, data management, program planning, development, delivery, surveillance, monitoring, and evaluation to advise and collaborate with family health teams and community health centres on initiatives related to healthy eating and active living.

***Source:** Opinion of the working group.*

4. Public health should work with community partners and the province to advocate for and develop the capacity to implement local programs that address multiple chronic diseases and promote good health. This includes building on existing or developing programs initiated by other groups or organizations.

***Source:** Adapted from <u>NICE</u> (Obesity. Prevention evidence summary 11: interventions led by health professionals; p. 328-46) (13) by the working group.*

5. Family-based interventions delivered by community agencies to encourage healthy eating and/or increase physical activity levels should provide ongoing, tailored support and incorporate a range of behaviour change techniques. Programs should have a clear aim to improve healthy eating practices and physical activity levels. Public health can provide resources (e.g., train the trainer, targeting of specific groups) and sit at the planning and evaluation tables for community agencies such as community health centres and family health teams.

Source: Adapted from NICE (Obesity. Prevention evidence summary 11: interventions led by health professionals, p. 328-46) (13) by the working group.

VIII. Links to Community Programs and Services

The recommendations relate to OPHS Chronic Disease Prevention Requirement #12.
The board of health shall provide advice and information to link people to community programs and services on healthy eating, healthy weights and physical activity.

PEPP Recommendations

1. As appropriate, public health should refer people who have any queries or concerns about their—or their families'—eating habits, physical activity levels, or weight to an in-house or community health professional such as a registered dietitian, physical activity specialist, health promoter, public health nurse, or general practitioner. As appropriate, referrals should be made to family health teams, community health centres, diabetes education centres, or existing province-wide programs.

Source: Adapted from NICE (Obesity. Prevention evidence summary 11: interventions led by health professionals; p. 328-46) (13) by the working group.

2. Population health communications and community-wide interventions to increase physical activity and improve nutrition should be tailored to people's preferences and circumstances and should aim to improve people's belief in their ability to change (for example, by verbal persuasion, modelling exercise behaviour, and discussing positive effects). Interventions to increase physical activity should focus on activities such as walking that fit into people's everyday lives. Ongoing support, including appropriate written materials, should be given in person or by phone, mail, Internet, or by primary care practitioners.

Source: Adapted from NICE (Obesity. Prevention evidence summary 11: interventions led by health professionals; p. 328-46) (13) by the working group.

3. Public health professionals should support and promote behavioural change programs along with tailored advice (e.g., phone intake or web-based) to help people who are motivated to change to improve eating habits or become more active, for example, by walking or cycling instead of driving or taking the bus.

Source: Adapted from NICE (Obesity. Prevention evidence summary 11: interventions led by health professionals; p. 328) (13) by the working group.

4. Public health professionals should advise that adults follow *Eating Well with Canada's Food Guide* and *Canada's Physical Activity Guide*, which might make it easier to maintain a healthy weight. Adults should also be encouraged to maintain a healthy relationship with food, body weight, and body shape.

***Source:** NICE (full guideline, p. 64) (REF);* Eating Well with Canada's Food Guide *(20)*; Canada's Physical Activity Guide for Healthy Active Living *(21); and opinion of the working group.*

5. Public health professionals should also encourage parents and caregivers to use *Eating Well with Canada's Food Guide* and *Canada's Physical Activity Guide* to help children establish healthy behaviours and maintain or work towards a healthy weight. As well, significant adults should be positive role models for children and youth with respect to their own perceptions of body weight and shape, model a healthy relationship with food, and ensure that no teasing or disparaging comments are made regarding their child's body weight by family members.

***Source:** NICE (full guideline, p. 66)*, Eating Well with Canada's Food Guide *(20)*, Canada's Physical Activity Guide for Healthy Active Living *(21), and opinion of the working group regarding the importance of positive role modelling.*

IX. Priority Populations

The recommendations relate to OPHS Chronic Disease Prevention Requirement #8.
The board of health shall provide opportunities for skill development in the areas of food skills and healthy eating practices for priority populations.

PEPP Recommendations

1. Public health professionals should work with primary care practitioners to provide information as needed on healthy eating, and physical activity to people at times when weight management is more difficult, including during and after pregnancy, at the time of menopause, and while stopping smoking, and to support the needs of other locally identified priority populations.

***Source:** Adapted from NICE (Obesity. Prevention evidence summary 13: interventions aimed at black, minority ethnic groups, vulnerable groups and vulnerable life stages; p.365-90; and Prevention evidence summary 6: energy balance; p. 250-69) (13) by the working group.*

2. Interventions to support smoking cessation should provide information and advice on long-term weight management, in particular by encouraging physical activity and healthy eating. ***Source:** Adapted from NICE (Prevention evidence summary 13: interventions aimed at black, minority ethnic groups, vulnerable groups and vulnerable life stages; p.365-90; and Prevention evidence summary 6: energy balance; p. 250-69) (13) by the working group.*

3. Public health should advocate for and support food skills training programs in a variety of settings, including school boards, parks, and recreation and social services. Training should include menu planning, food selection, safe food handling, healthy food preparation, storage, and serving. Priority populations that may benefit from food preparation skills training are wide ranging and may include children, youth, young single adults, parents, newcomers to Canada, women who are pregnant or postpartum, and individuals of various socioeconomic statuses. Food skills programs for caregivers of children should include information on how they can encourage young children to eat healthy foods and develop a healthy relationship with food.

***Source:** Opinion of the working group.*

X. Public Awareness

The recommendations relate to OPHS Chronic Disease Prevention Requirement #11.
The board of health shall increase public awareness in the following areas: healthy eating, healthy weights and physical activity. These efforts shall include: adapting and/or supplementing national and provincial health communications strategies; and/or developing and implementing regional/local communications strategies.

PEPP Recommendations

1. Public health professionals should adopt a comprehensive approach to encourage public awareness of healthy eating, daily physical activity, and positive self-esteem, which includes healthy relationships with food, positive attitude towards weight and body shape, media literacy, and resiliency factors.

Source: Adapted from NICE (Obesity. Prevention evidence summary 7: interventions to raise awareness; p. 270-86) (13) by the working group.

2. Community-based interventions might include awareness-raising promotional activities, but these should be part of a longer term, multicomponent intervention rather than one-off activities and should be accompanied by targeted follow-up with priority populations.

Source: adapted from NICE (Obesity. Prevention evidence summary 7: interventions to raise awareness; p.270-86) (13) by the working group.

XI. Supportive Environments for Breastfeeding and Child Health

The recommendations relate to OPHS Child Health Requirement #4.
The board of health shall work with community partners using a comprehensive health promotion approach, to influence the development and implementation of health policies, and the creation or enhancement of supportive environments to address breastfeeding, healthy eating, healthy weights and physical activity. These efforts shall include: a. Conducting a situational assessment in accordance with the Population Health Assessment and Surveillance Protocol, 2008 (or as current); and b. Reviewing, adapting, and/or providing behaviour change support resources and programs.[1]

PEPP Recommendations

1. Public health should encourage supportive environments for lactating mothers in the community and workplace that include flexible work schedules, safe and clean spaces for milk expression, and safe storage for expressed breast milk. All public health agencies should develop and maintain their own internal breastfeeding policy and ensure all staff are aware of and understand the relevance of that policy.

Source: Opinion of the working group.

2. Public health should promote healthy eating and physical activity as priorities for early learning and childcare facilities such as nurseries and daycares by:

[1] This could include, but is not limited to, curriculum support resources (in preschools, schools, and so on), workplace support resources, and education and skill-building opportunities.

- Minimizing sedentary activities during play time, and providing regular, structured and unstructured opportunities for enjoyable active play and physical activity sessions.
- Implementing the Ontario Day Nurseries Act requirements for physical activity, including activities designed to promote gross and fine motor skills appropriate for the developmental level of the child, and ensuring that each child over thirty months of age that is in attendance for six hours or more in a day plays outdoors for at least two hours each day, weather permitting.
- Implementing Ontario Day Nurseries Act requirements for nutrition.

Source: *Opinion of the working group, based on the* Ontario Day Nurseries Act*, Ontario Ministry of Children and Youth Services.*

3. Strategies to ensure healthy eating and active living in nurseries and daycares should seek to involve parents in a significant way. This can improve parental engagement in active play with children and children's dietary intake. ***Source:*** *opinion of the working group.*

XII. Breastfeeding: World Health Organization/United Nations International Children's Emergency Fund (WHO/UNICEF) Baby-Friendly Initiative

The recommendation in the section relates to OPHS Child Health Requirement #5.
The board of health shall increase public awareness of breastfeeding. These efforts shall include: adapting and/or supplementing national and provincial health communication strategies; and/or developing and implementing regional/local communication strategies.

PEPP Recommendation

2. Public health should advocate for the incorporation of UNICEF Baby Friendly principles and practices as a proactive and comprehensive approach to achieving healthy weights for the people of Ontario.

Source: *Opinion of the working group based on the Ontario Public Health Association* Breastfeeding Position Paper*; p. 15 (24).*

XIII. Breastfeeding: Other Support

The recommendations relate to OPHS Child Health Requirement #7.
The board of health shall provide advice and information to link people to community programs and services on breastfeeding.

PEPP Recommendations

1. Public health programming should support mothers in exclusively breastfeeding their children during the first six months of life, with the continuation of breastfeeding for two years and beyond, with the introduction of nutrient-rich complementary foods at six months, and with particular attention to iron. Public health should also respect a woman's decision to feed her child with a breast milk substitute (e.g., infant formula).

Source: *Opinion of the working group based on the Ontario Public Health Association* Breastfeeding Position Paper*; p. 4 (24).*

2. Public health should advocate for and support community-based and partner-driven programs for breastfeeding families. It is important to provide immediate, intensive postpartum support in person.

Source: Opinion of the working group, based on the Canadian Paediatric Society, Dietitians of Canada and Health Canada Statement. Nutrition for Healthy Term Infants (22).

XIV. Breastfeeding: Priority Populations

The recommendation relates to OPHS Child Health Requirement #8.
The board of health shall provide, in collaboration with community partners, outreach to priority populations to link them to information, programs and services on breastfeeding.

PEPP Recommendation

1. Priority populations for public health should include Aboriginal women living off-reserve and women and adolescent girls experiencing poverty, poor nutrition, teen pregnancy, social and geographic isolation, adjustment to a recent arrival in Canada, or current or past alcohol or substance use and/or family violence, in addition to other locally identified groups.

Source: Opinion of the working group based on the Public Health Agency of Canada report. The Canada prenatal nutrition program: a decade of promoting the health of mothers, babies and communities (23).

XV. Family-based Interventions

The recommendation relates to OPHS Child Health Requirement #11.
The board of health shall facilitate access and support for families to complete screening tools[2] to monitor their child's health and development, and provide a contact for families to discuss results and arrange follow-up.

PEPP Recommendation

1. Families of children and young people identified as being at high risk of eating behaviours that could lead to obesity should be offered ongoing support from an appropriately trained and regulated health professional. Individual as well as family-based interventions should be considered, depending on the age and maturity of the child. Public health should play a role in advocating for these supports.

Source: Adapted from NICE (Obesity. Prevention evidence summary 8: interventions for pre-school children and family-based interventions; p. 287-295) (13) by the working group.

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[2] Screening tools include those that are part of the Healthy Babies Healthy Children program (e.g., Nipissing District Developmental Screen™) as well as other reliable, valid screening tools that may be identified such as NutriSTEP™ and the Paediatric Dental Screening Instrument (OPHS REF).

5. DISCUSSION

The *Health Eating, Physical Activity, and Healthy Weights Guideline for Public Health in Ontario* includes recommendations for adults and children in diverse environments, including schools, communities, and workplaces. The guideline also addresses the importance of targeting priority populations. Over time, if implemented, these strategies should reduce barriers to healthy eating and active living in the environments in which we learn, live, and work and ultimately, reduce the risk of certain cancers and other chronic diseases. Population-based strategies and environmental changes are important because attempts to improve individual levels of physical activity and nutrition have not met with a great deal of success (32), with obesity rates continuing to increase at the same time that a large segment of the population has been attempting to lose or maintain weight. Therefore, public health, with its population-based focus, is ideally positioned be a leader or partner in working toward the implementation and promotion of the environment-level strategies outlined in this guideline.

This guideline suggests strategies for Ontario public health units and for other stakeholders working in chronic disease prevention in Ontario. The question of how best to implement these recommendations was raised by the developers of this document and by stakeholders, and the implementation of public health policy recommendations is a common concern. Policymakers have described their difficulties in responding to recommendations, citing a lack of guidance on how to translate public health and clinical evidence about obesity control into meaningful policies (33).

A systematic approach to program planning is recommended. The program planning steps below are a starting point for implementing this guideline. Some or all of these steps can be used to identify and describe the health issue of interest and develop a comprehensive program plan that addresses the problem. The *Handbook of Obesity Prevention* (34) presents a framework for thinking through evidence needs for obesity prevention, and includes the following components of an evidence-based obesity prevention program:

i. Build a case for action on obesity (Why should we do something about obesity?)
ii. Identify the contributing factors and point of intervention (What are the causative and protective factors that could potentially be targeted by interventions?)
iii. Define the range of opportunities for action (How and where could we intervene?)
iv. Evaluate potential interventions (what are the specific, potential interventions and their likely effectiveness?)
v. Select a portfolio of policies, programs and actions (What is a balanced portfolio of initiatives that is sufficient to prevent increases in obesity?)

These questions should be considered in the local context, taking into consideration the populations to be targeted and the availability of resources for program development. This guideline addresses steps ii. and iii. in the list above. Steps iv. and v. refer to choosing specific interventions and programs and are outside the scope of this project. We anticipate that this gap will be filled by existing tools that have been developed by organizations such as health-evidence.ca (http://www.health-evidence.ca/) (35), which is designed to provide quality research evidence to decision makers, the Public Health Agency of Canada's Canadian Best Practices Portal for Health Promotion and Chronic Disease Prevention (http://cbpp-pcpe.phac-aspc.gc.ca/) (36), and Towards Evidence-Informed Practice (http://teip.hhrc.net/), as well as other tools that are in development such as the National Collaborating Centre for Methods and Tools (http://www.nccmt.ca/) online program planning

tool for public health and their registry of methods and tools for knowledge translation in public health. Furthermore, there are plans for guidance documents for the OPHS that will name specific evidence-based tools that can be used to implement this guideline.

As noted in feedback to the draft recommendations, and in documents that have been published previously, another necessary component for the implementation of this guideline is provincial support. This support would include a clear vision at the provincial level; investment in the health promotion system, including human, financial and material resources; and the development of a comprehensive health promotion infrastructure (37).

It is also important to note that the Foundational Standards of the OPHS underpin these recommendations. The foundational principles are:

- Need (tailoring programs and services to address needs that are influenced by the contexts of local communities)
- Impact (influencing broader societal changes that reduce health inequities by coordinating and aligning programs and services with those of other partners and using comprehensive approaches that employ a multifaceted range of activities)
- Capacity (striving by boards of health to achieve the needed capacity and resources required to meet the OPHS standards)
- Partnership and Collaboration (extensive partnerships within the health sector and other sectors)

The OPHS Foundational Standards promote evidence-based practice through assessment, surveillance, research and knowledge exchange, and program evaluation. Adopting the Foundational Standards should help to improve the public health knowledge base and evidence-based decision making in Ontario.

6. CONCLUSIONS

In conclusion, the *Health Eating, Physical Activity, and Healthy Weights Guideline for Public Health in Ontario's* broad recommendations provide a foundation for chronic disease prevention in Ontario in a variety of environments through the promotion of healthy eating, physical activity, and healthy weights. The guideline is the product of an extensive stakeholder consultation that improved the quality and accessibility of the guideline. The report is a step forward in the implementation of chronic disease strategies in Ontario that the developers hope will be built upon in the coming years. In addition, the finding that the response rate dropped substantially in the second round of the consultation process indicates that a second round may not have been necessary, and this finding will be taken into consideration for future projects of this nature.

RELEVANT DOCUMENTS UNDER DEVELOPMENT

The Ministry of Health Promotion and CCO are working together to develop guidance documents to facilitate the implementation of this guideline. In January 2010, the Ministry coordinated a consultation process involving public health agencies to review a Guidance Document developed by the Ministry on healthy eating, physical activity and healthy weights. Distribution of the final Guidance Documents is anticipated for Spring 2010.

The field will also be informed by related NICE guidance documents that were not available at the time this guideline was written, including *Workplace Mental Well-Being*, released November 2009 (http://guidance.nice.org.uk/PH22/Guidance/pdf/English) and *Community-based Approaches to Prevent Obesity and Maintain a Healthy Weight: Whole System Approaches*, with an expected date of issue of March 2012.

CONFLICT OF INTEREST

No conflicts of interest have been reported by the developers of this guideline.

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GLOSSARY

Active living - more than just physical fitness or exercise, active living encourages everyone, not just those who are young and fit, to make physical activity a part of daily living. Examples of activities are gardening or walking the dog.
(Source: Adapted from Health Canada's Active Living *http://www.hc-sc.gc.ca/fn-an/nutrition/weights-poids/leaders_living-chefs_vive-eng.php).*

Active play - what children and young people do when they follow their own ideas and interests, in their own way and for their own reasons.
(Source: NICE, Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children (13).)

Active transport/travel - a form of transport that requires physical activity, e.g. walking or cycling. *(Source: NICE, Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children (13).)*

Behavioural intervention - treatment or therapy that uses the common components of behavioural treatment (self-monitoring, goal setting, stimulus control). (Source: NICE, *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children (13).)*

Community participation - direct participation of the community in decision-making about developments that affect the community, covering a spectrum of activities ranging from passive involvement in community life to intensive action-oriented participation in community development (including political initiatives and strategies). *(Source: Glossary of Terms for the Core Competencies for Public Health, Public Health Agency of Canada at http://www.phac-aspc.gc.ca/ccph-cesp/glos-a-d-eng.php.)*

Comprehensive strategy – includes public education and communication activities which complement the other key activities including policy and program development, research and knowledge development, and support to community-based programming. The collective impact of these activities can facilitate and foster individual and social change. (*Source: Adapted from Health Canada at http://www.hc-sc.gc.ca/ahc-asc/activit/marketsoc/socmar-hcsc/_mad-uef3/chap6-eng.php.)*

Day nursery - a premises that receives more than five children, who are not of common parentage, primarily for the purpose of providing temporary care or guidance (or both) for a continuous period not exceeding 24 hours, and the children are (i) under 10 years of age or (ii) under 18 years of age if the day nursery will be for children with a developmental disability. *(Source: Ontario Day Nurseries Act, Ontario Ministry of Children and Youth Services at http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_900262_e.htm#BK0)*

Diet – the habitual food intake of people or animals – *or* - a plan of food and drink set down for the loss of weight, or a prescribed plan for medical reasons. *(Source: NICE, Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children (13).)*

Food skills – knowledge related to diet and health, consumer awareness, food preparation and handling skills, and food safety that individuals should know, understand, and be able to

apply. *(Source: Adapted from the UK Food Standards Agency at http://www.food.gov.uk/consultations/ukwideconsults/2007/foodcompetency.)*

Foundations for a Healthy School – there are four components to the Ontario framework: quality instruction and programs, a healthy physical environment, a supportive social environment, and community partnerships. *(Source: Ontario Ministry of Education (16))*

Healthy eating – eating practices and behaviours that are consistent with improving, maintaining, and/or enhancing health. *(Source: Hooper M, Kirkpatrick S, Ellis N, McIntyre B. Preface. Understanding the forces that influence our eating habits. Can J Public Health. 2005;96 Suppl 3:S4-46.)*

Healthy weight –a body mass index (BMI) of 18.5 to 24.9 kg/m^2. *(Source: NICE, Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children (13).)*

Multicomponent intervention - an intervention that aims to address a range of factors which may influence the outcome measure of interest. Sometimes referred to as 'multifaceted'. *(Source: NICE, Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children (13).)*

Obesity - in children and adolescents obesity is measured by a BMI for age at or above the 95th percentile. In adults, obesity is defined as a BMI greater than 30 kg/m^2. *(Source: EatRight Ontario Glossary, Ontario Ministry of Health Promotion (REF))*

Overweight – a body mass index between 25.0 and 29.9 kg/m^2. *(Source: NICE, Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children (13).)*

Priority populations - populations that are at risk and for which public health interventions may be reasonably considered to have a substantial impact at the population level. They are identified by surveillance, epidemiological, or other research studies. *(Source: Ontario Ministry of Health Promotion (REF))*

Public health professional (public health practitioner, public health worker) - a generic term for any person who works in a public health service or setting. They may be classified according to profession (nurse, physician, dietitian, etc.); according to role and function (direct contact with members of the public or not); whether their role is hands-on active interventions or administrative; or in various other ways. *(Source: Glossary of Terms for the Core Competencies for Public Health, Public Health Agency of Canada at http://www.phac-aspc.gc.ca/ccph-cesp/glos-i-p-eng.php)*

Sensitivity training - training in small groups in which people develop a sensitive awareness and understanding of themselves and of their relationships with others. *(Source: The American Heritage Stedman's Medical Dictionary (REF))*

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Appendix 2. Project in Evidence-based Primary Prevention Working Group Members.

GROUP 1: Schools and Workplaces (OPHS Chronic Disease Prevention Requirements 3 and 4) Group Members: Lead: Joanne Beyers, Registered Dietitian, Public Health Research, Education and Development (PHRED), Sudbury & District Health Unit Additional members: Scott Leatherdale, PhD, Scientist, Cancer Care Ontario (CCO) Gail McVey, PhD, Researcher, Sick Children's Hospital
GROUP 2: Healthy Policy and Capacity Building (OPHS Chronic Disease Prevention Requirements 5, 6 and 7 and Child Health Requirement 4) Group Members: Lead: John Garcia, PhD, Director, Knowledge Exchange and Systems Evaluation, Ontario Tobacco Research Unit (OTRU) Additional members: Mary-Jo Makarchuk, Public Health Nutritionist, Toronto Public Health Nadia Stokvis, Nutrition Consultant, Ministry of Health Promotion Christa Costas-Bradstreet, Relationship Manager, ParticipACTION Luciana Rodrigues, Health Promotion Specialist, Prevention Unit, CCO
GROUP 3: Chronic Disease Prevention Requirements 8, 11 and 12 and Child Health Requirement 5, 7 and 8. Group Members: Lead: Connie Uetrecht, Executive Director, Ontario Public Health Association Additional members: Marie Traynor, Registered Dietitian, Dietetic Research Coordinator/Research Associate, KFL&A (Kingston, Frontenac and Lennox & Addington) Public Health Gayle Bursey, Director, Chronic Disease and Injury Prevention, Peel Health

Appendix 3. Environmental scan results. [below is my suggested change to make table more readable]

Title			
Publisher	**Country Language**	**Search dates**	**Publication date (Short Reference)**
1. 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children [summary]			
Canadian Medical Association Journal	Canada English	Not available	Apr. 10, 2007 (CMAJ. 2007;176(8):S1-13).
2. Prevention of pediatric overweight and obesity			
American Academy of Pediatrics (AAP) (recommendations for pediatricians) All policy statements from the AAP automatically expire 5 years after publication unless reaffirmed, revised, or retired (reaffirmed Oct. 2006)	USA English	Not available	Aug. 2003 (Pediatrics. 2003;112(2): 424-9)
3. Food, nutrition, physical activity, and the prevention of cancer: a global perspective			
World Cancer Research Fund International	Published in Washington DC English (WCRF International has members in the UK, the Netherlands, France, and Hong Kong.)	Based on a series of 20 specially commissioned systematic literature reviews, including evidence published up to the end of 2005. A limited review to the end of 2006 was also conducted.	2007
4. Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children			
National Institute for Health and Clinical Excellence	UK English	1990-Dec. 2005	Dec. 2006
Public health strategies for preventing and controlling overweight and obesity in school and workplace settings. A report on recommendations of the task force on community preventive services			
Centers for Disease Control and Prevention	USA English	1966-2001	Oct. 7, 2005 (MMWR Morb Mortal Weekly Rep. 2005;54(RR10):1-12)
5. Primary prevention of childhood obesity			

Title			
Publisher	**Country Language**	**Search dates**	**Publication date (Short Reference)**
Registered Nurses Association of Ontario (clinical - children from birth to age 18)	Ontario English	Database search Jan. 1, 1995- Sept. 2003 (website search to Dec. 2003)	Mar. 2005
6. Healthy weights, healthy lives			
2004 Ontario Chief Medical Officer of Health report	Ontario English	No systematic review	2004
7. Effectiveness of interventions to increase physical activity among marginalized populations			
Public Health Research, Education & Development (PHRED), Effective Public Health Practice Project (Helen Thomas, Donna Fitzpatrick-Lewis)	Ontario English	Nine relevant electronic databases were searched from Jan. 1995-Aug. 2006. In addition, relevant peer-reviewed journals were hand searched for the period Jan. 2006-Aug. 2006.	Mar. 2007
8. Effectiveness of physical activity enhancement and obesity prevention programs in children and youth			
PHRED, Effective Public Health Practice Project	Ontario English	Jan. 1985–Aug. 2003	Dec. 2004
9. World Health Organization (WHO) publications, e.g., A guide for population-based approaches to increasing levels of physical activity (2007)			
Implementation of the WHO global strategy on diet, physical activity and health (to reduce risk of heart disease and diabetes)		No systematic review	Various
10. Guidelines for childhood obesity prevention programs: promoting health weight in children			
Developed by the Weight Realities Division of the Society for Nutrition Education (a health-centred rather than weight-centred approach)	USA English	Not available	2003 (J Nutr Educ Behav. 2003;35(1): PAGES?)
11. Management of obesity in children and young people			
Scottish Intercollegiate Guidelines Network	Scotland English	Jan 1991-Dec 2001	Apr. 2003
12. Promoting physical activity in the workplace			
National Institute for Health and Clinical Excellence	UK English	Databases were searched for relevant systematic reviews, experimental studies, and qualitative studies from 1996–2006.	May 2008

Title	Publisher	Country Language	Search dates	Publication date (Short Reference)
1. 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children [summary]	Canadian Medical Association Journal	Canada English	Not available	Apr. 10, 2007 (CMAJ. 2007;176(8):S1-13).
2. Prevention of pediatric overweight and obesity	American Academy of Pediatrics (AAP) (recommendations for pediatricians) All policy statements from the AAP automatically expire 5 years after publication unless reaffirmed, revised, or retired (reaffirmed Oct. 2006)	USA English	Not available	Aug. 2003 (Pediatrics. 2003;112(2): 424-9)
3. Food, nutrition, physical activity, and the prevention of cancer: a global perspective	World Cancer Research Fund International	Published in Washington DC English (WCRF International has members in the UK, the Netherlands, France, and Hong Kong.)	Based on a series of 20 specially commissioned systematic literature reviews, including evidence published up to the end of 2005. A limited review to the end of 2006 was also conducted.	2007
4. Obesity: the prevention, identification, assessment and management of overweight and	National Institute for Health and Clinical Excellence	UK English	1990-Dec. 2005	Dec. 2006

Title	Publisher	Country Language	Search dates	Publication date (Short Reference)
obesity in adults and children				
5. Public health strategies for preventing and controlling overweight and obesity in school and workplace settings. A report on recommendations of the task force on community preventive services	Centers for Disease Control and Prevention	USA English	1966-2001	Oct. 7, 2005 (MMWR Morb Mortal Weekly Rep. 2005;54(RR10):1-12)
6. Primary prevention of childhood obesity	Registered Nurses Association of Ontario (clinical - children from birth to age 18)	Ontario English	Database search Jan. 1, 1995- Sept. 2003 (website search to Dec. 2003)	Mar. 2005
7. Healthy weights, healthy lives	2004 Ontario Chief Medical Officer of Health report	Ontario English	No systematic review	2004
8. Effectiveness of interventions to increase physical activity among marginalized populations	Public Health Research, Education & Development (PHRED), Effective Public Health Practice Project (Helen Thomas, Donna Fitzpatrick-Lewis)	Ontario English	Nine relevant electronic databases were searched from Jan. 1995-Aug. 2006. In addition, relevant peer-reviewed journals were hand searched for the period Jan. 2006-Aug. 2006.	Mar. 2007
9. Effectiveness of physical activity enhancement and obesity prevention	PHRED, Effective Public Health Practice Project	Ontario English	Jan. 1985–Aug. 2003	Dec. 2004

Title	Publisher	Country Language	Search dates	Publication date (Short Reference)
programs in children and youth				
10. World Health Organization (WHO) publications, e.g., A guide for population-based approaches to increasing levels of physical activity (2007)	Implementation of the WHO global strategy on diet, physical activity and health (to reduce risk of heart disease and diabetes)		No systematic review	Various
11. Guidelines for childhood obesity prevention programs: promoting health weight in children	Developed by the Weight Realities Division of the Society for Nutrition Education (a health-centred rather than weight-centred approach)	USA English	Not available	2003 (J Nutr Educ Behav. 2003;35(1): PAGES?)
12. Management of obesity in children and young people	Scottish Intercollegiate Guidelines Network	Scotland English	Jan 1991-Dec 2001	Apr. 2003
13. Promoting physical activity in the workplace	National Institute for Health and Clinical Excellence	UK English	Databases were searched for relevant systematic reviews, experimental studies, and qualitative studies from 1996–2006.	May 2008

Abbreviations: UK, USA, WHO, etc.

Appendix 4. AGREE assessment of the NICE guidance document *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children* (2006) (18).

	Reviewer 1 (%)	Reviewer 2 (%)	Reviewer 3 (%)
Scope and Purpose	100	100	100
Stakeholder Involvement	58	81	81
Rigour of Development	86	100	94
Clarity and Presentation	92	68	100
Applicability	89	100	75
Editorial Independence	83	75	56
Overall Assessment	Recommend (with provisos or alterations). The recommendations should be tailored to the Ontario population.	Strongly recommend. It would be helpful if the document was less complicated and easier to navigate.	Strongly recommend

Appendix 5. Consultation process list of stakeholders.

Ontario Public Health Units (Round 1 response rate = 73%)
1. Algoma Public Health Unit
2. Brant County Health Unit
3. Chatham-Kent Health Unit
4. City of Hamilton - Public Health & Social Services
5. Durham Region Health Department
6. Eastern Ontario Health Unit
7. Elgin-St. Thomas Health Unit
8. Grey Bruce Health Unit
9. Haldimand-Norfolk Health Unit
10. Haliburton, Kawartha, Pine Ridge District Health Unit
11. Halton Region Health Department
12. Hastings and Prince Edward Counties Health Unit
13. Huron County Health Unit
14. Kingston, Frontenac and Lennox & Addington Health Unit
15. Lambton Health Unit
16. Leeds, Grenville and Lanark District Health Unit
17. Middlesex-London Health Unit
18. Niagara Region Public Health Department
19. North Bay Parry Sound District Health Unit
20. Northwestern Health Unit
21. Ottawa Public Health
22. Oxford County Public Health & Emergency Services
23. Peel Public Health
24. Perth District Health Unit
25. Peterborough County-City Health Unit
26. Porcupine Health Unit
27. Region of Waterloo, Public Health
28. Renfrew County and District Health Unit
29. Simcoe Muskoka District Health Unit
30. Sudbury and District Health Unit
31. Thunder Bay District Health Unit
32. Timiskaming Health Unit
33. Toronto Public Health
34. Wellington-Dufferin-Guelph Health Unit
35. Windsor-Essex County Health Unit
36. York Region Public Health Services

Other Stakeholder Organizations
The following organizations replied to the Round 1 web-based survey:
1. Breakfast for Learning
2. Canadian Diabetes Association
3. Canadian Cancer Society (Ontario Division)
4. Dietitians of Canada
5. Heart and Stroke Foundation of Ontario
6. Ontario Physical and Health Education Association

7. Ontario Public Health Association Nutrition Resource Centre
8. Ontario Society of Nutrition Professionals in Public Health
9. Ontario Society of Physical Activity Promoters in Public Health
10. Registered Nurses Association of Ontario
11. The Health Communication Unit
Responses to the Round 1 web-based survey were not received from the following organizations:
1. Heart Health Resource Centre
2. Ontario Medical Association
3. Ontario Public Health Association Food Security Work Group
4. Parks and Recreation Ontario

Appendix 6. Agreement scores: stakeholder consultation round 1.

GROUP	QUESTION	TOTAL NUMBER OF RESPONSES	AGREEMENT (%)	STRONGLY AGREE (#)	AGREE (#)	NEITHER AGREE NOR DISAGREE (#)	DISAGREE (#)	STRONGLY DISAGREE (#)
SCHOOLS (1)	1	33	97	23	9	1		
	2	33	97	23	9	1		
	3	33	97	14	18			1
	4	32	88	11	17	3	1	
	5	32	97	21	10		1	
	6	33	97	21	11	1		
	7	33	97	22	10	1		
	8	33	97	24	8		1	
	9	33	94	23	8		1	1
	10	33	100	19	14			
SCHOOLS (2)	1	33	82	11	16	3	2	1
	2	33	82	14	13	3	1	2
	3	33	82	14	13	3	1	2
WORKPLACES	1	32	91	19	10	1	1	1
	2	32	88	19	9	2	1	1
	3	32	91	15	14	1	2	
	4	31	100	17	14			
	5	31	77	14	10	2	3	2
	6	32	97	19	12			1
FOOD PREMISES	1	30	80	14	10	2	4	
MUNICIPALITIES	1	32	94	22	8	1	1	
	2	32	97	22	9	1		
	3	33	94	18	13	1	1	
	4	32	94	20	10	1		1
COMMUNITIES	1	33	91	15	15	1	1	1
	2	33	82	9	18		5	1
	3	33	85	13	15	1	3	1
	4	33	82	14	13	2	3	1
	5	32	78	12	13	3	2	2
	6	32	91	23	6		1	2
	7	33	70	13	10	3	6	1
	8	30	77	14	9	2	4	1
	9	33	82	11	16	1	3	2
	10	33	76	13	12	2	3	3
	11	32	84	14	13		4	1
PRIORITY POPULATIONS	1	30	60	7	11	4	4	4
	2	31	84	10	16	1	3	1
	3	31	94	18	11		1	1
	4	30	97	21	8			1
PUBLIC AWARENESS	1	33	85	18	10	2		3
	2	33	88	21	8	1	1	2
BREASTFEEDING AND CHILD HEALTH	1	31	97	23	7	1		
	2	31	97	22	8	1		
	3	30	93	14	14		1	1
	4	29	90	21	5	3		
	5	30	97	19	10			1
	6	29	100	19	10			
	7	30	100	19	11			
	8	30	87	11	15	3		1
	9	28	86	13	11	1		

Note: Highlighted rows indicate recommendations that received agreement ratings below 80%.