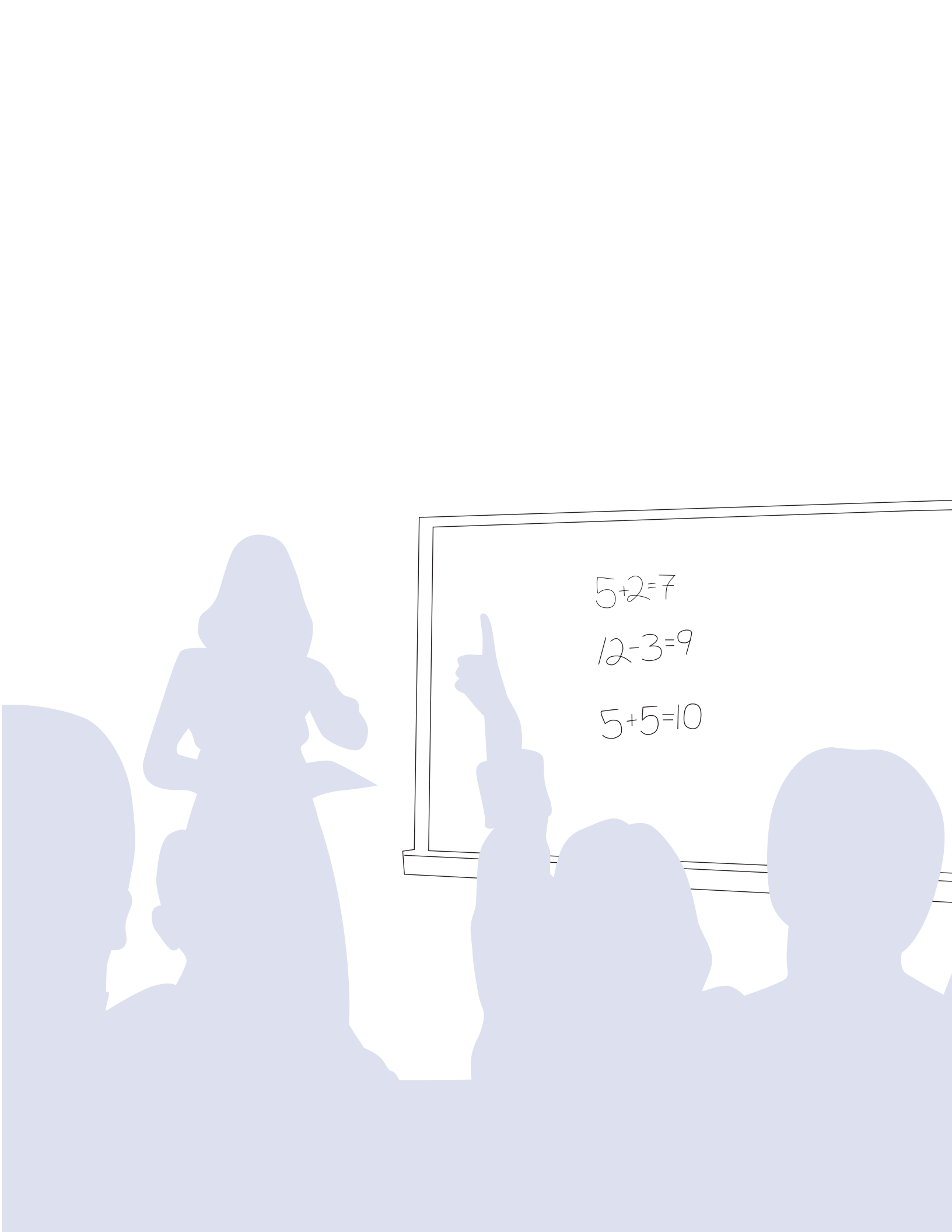
Call to Action:

Creating a Healthy School Nutrition Environment

Ontario Society of Nutrition Professionals in Public Health
School Nutrition Workgroup Steering Committee

March, 2004


5+2=7
12-3=9
5+5=10

Authors

Call to Action: Creating a Healthy School Nutrition Environment was prepared by the Ontario Society of Nutrition Professionals in Public Health (OSNPPH) School Nutrition Workgroup Steering Committee.

Written by:

Lucy Valleau, Chair of the OSNPPH School Nutrition Workgroup; Public Health Nutritionist, York Region Health Services

Sandra Almeida, Public Health Nutritionist, Peel Health

Mary Ellen Deane, Public Health Dietitian, Muskoka Parry Sound Health Unit

Carolyn Froats-Emond, Public Health Dietitian, North Bay & District Health Unit

Doreen Henderson, Community Dietitian, Wellington Dufferin Guelph Health Unit

Mary Ellen Prange, Public Health Nutritionist, Region of Waterloo Public Health

Caroline Wai, Public Health Nutritionist, Toronto Public Health

This document is also available in French. Copies of these documents can be downloaded in PDF format from the Ontario Society of Nutrition Professionals in Public Health Website @ **www.osnpph.on.ca.**

For more information please contact:

Lucy Valleau MHSc, RD
Public Health Nutritionist
York Region Health Services
22 Prospect St.,
Newmarket, ON
L3Y 3S9
905-895-4512 ext. 4332
lucy.valleau@region.york.on.ca

Acknowledgements

The OSNPPH School Nutrition Workgroup thanks reviewers and editors for their valuable time and expertise in reviewing the **Call to Action.**

Reviewed by:

Jennifer Bowen, Public Health Dietitian, Thunder Bay District Health Unit

Ellen Desjardins, Public Health Nutritionist, Region of Waterloo Public Health

Carol Dombrow and Lesley Macaskill, Breakfast for Learning, Canadian Living Foundation

Debbie Field, Executive Director, FoodShare; member of the Coalition for Student Nutrition

Janet Humble, Community Health Promoter, North Bay & District Health Unit

Betty Ann Horbul, Chair of OSNPPH; Public Health Nutritionist, Manager, Porcupine Health Unit

Colleen Logue, Manager, Nutrition Resource Centre

Carol MacDougall, Ontario Healthy Schools Coalition

Lynne Newell, Consultant, Trillium Lakelands District School Board

Kathy Page, Public Health Dietitian, Haldimand-Norfolk Health Unit

Acknowledgements (cont'd)

Reviewed by: (cont'd)

Sielen Raoufi, Public Health Nutritionist,
Toronto Public Health

Wayne Roberts, Toronto Food Policy Council

Monica Schneider, Public Health Nurse,
North Bay & District Health Unit

Emily Taylor, Public Health Dietitian,
North Bay & District Health Unit

Mary Turfryer, Public Health Nutritionist,
York Region Health Services

Barbara Zupko, Health Promotion Officer,
Region of Waterloo Public Health

Edited by:

Deborah Davis, Health Promotion Specialist,
Wellington Dufferin Guelph Health Unit

Serena Tene, Administrative Assistant,
Wellington Dufferin Guelph Health Unit

Design & Layout:
The Graffic Link Design Studio, Brantford, Ontario,
(519) 758-0901

Support for Printing and Translation:
The Ontario Society of Nutrition Professionals in Public Health and the Northern Healthy Eating Project

The **Call to Action: Creating a Healthy School Nutrition Environment** is supported by the following:

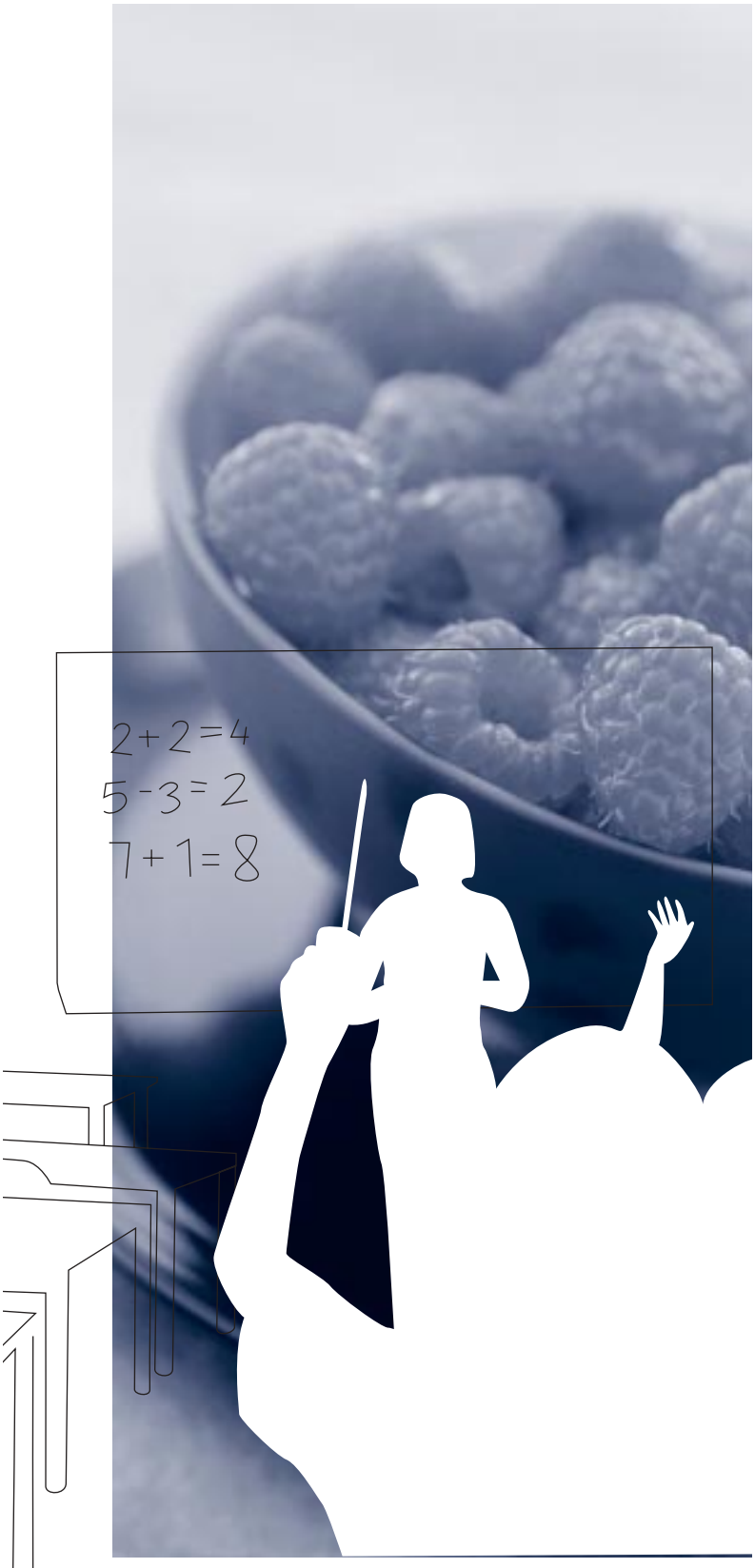
Breakfast for Learning, Canadian Living Foundation
Canadian Cancer Society
Canadian Diabetes Association
Coalition for Student Nutrition
Community Health Nurses' Initiatives Group
Dietitians of Canada
Heart and Stroke Foundation of Ontario
Ontario Healthy Schools Coalition
Ontario Physical and Health Education Association
Ontario Public Health Association
Toronto Food Policy Council
Voices for Children

Table of Contents

Call to Action: Creating a Healthy School Nutrition Environment

OSNPPH School Nutrition Workgroup

This Call to Action challenges the province, boards of education, school communities and public health units to acknowledge and act on their role in establishing a supportive nutrition environment in schools.



1.0 Executive Summary

Nutrition is important to people of all ages, but it is particularly important to the well-being of children and adolescents. Well-nourished children and adolescents are more likely to be better prepared to learn, be active, and maintain their health as adults. Today, many in these age groups have unhealthy eating patterns. Inadequate nutrition can have a detrimental effect on children's learning ability as well as on their physical development. Poor eating habits are contributing to the rising rate of childhood and adolescent overweight, obesity and type 2 diabetes. Not only are these poor eating habits in childhood a concern, it is likely that they will be transferred into adulthood and increase the risk of chronic diseases such as cancer and cardiovascular disease.

It is time to address the poor eating habits of Ontario children and adolescents. Since children and teenagers spend a significant amount of their time at school, the Ontario Society of Nutrition Professionals in Public Health (OSNPPH) School Nutrition Workgroup calls on the broader school community to create healthier school nutrition environments and to promote lifelong healthy eating behaviours.

Unfortunately, there is an increase in school-related nutritional concerns: Healthy eating is the exception rather than the norm. Currently in Ontario schools, there is an increasing availability of minimally nutritious foods and a decline in the quality of food brought from home. There also may be inadequate time for lunch breaks, inappropriate scheduling of mealtimes and limited nutrition education.

The formal curriculum provides an ideal place to teach children and adolescents about nutrition. A school that embraces the concept of a Healthy School Nutrition Environment promotes and supports healthy eating for students through actions as well as words. The goal is to ensure consistency between the theory students learn through a formal curriculum in the classroom and the nutrition messages provided by hidden and parallel curricula within the school environment.

The OSNPPH School Nutrition Workgroup has made nine recommendations based on essential elements of a Healthy School Nutrition Environment. The recommendations, along with suggested actions for provincial ministries, local school boards and local boards of health are:

1. Develop and adopt food and nutrition policies that create and support healthy eating environments in all Ontario schools.
2. Ensure that the formal curriculum is designed to provide adequate learning opportunities for students to develop knowledge, attitudes and skills for adopting healthy eating behaviours; and that teachers devote sufficient time to teaching all of the healthy eating expectations in the curriculum.
3. Encourage and support opportunities for teachers to be trained in nutrition education.
4. Ensure all foods available in the school setting are consistent with classroom teaching, reinforce healthy eating messages and are culturally acceptable.
5. Encourage and support school staff in promoting and modeling healthy eating behaviours while at school.
6. Educate parents and the wider community about nutrition, and involve them in activities that promote the practice of healthy eating.
7. Support the development and sustainability of school nourishment programs, including breakfast, lunch and snack programs.
8. Ensure a safe food environment where all students are comfortable and can enjoy eating.
9. Develop recommendations for scheduling nutrition breaks at appropriate times that allow students sufficient time to eat.

To support these recommendations and suggested course of action, the OSNPPH School Nutrition Workgroup addresses the importance of healthy eating in the school context. The **Call to Action** presents the link between nutritional health, learning and prevention of chronic disease among young people from childhood to adolescence. Further, the Workgroup strongly recommends the implementation of mandatory Food Standards that emphasize foods with Maximum Nutritional Value in all Ontario schools.

2.0 Purpose of the Call to Action

The Ontario Society of Nutrition Professionals in Public Health (OSNPPH) School Nutrition Workgroup calls on stakeholders to recognize the health and educational benefits of healthy eating and the importance of making it a priority in every school.

A primary goal of schools is to foster achievement in the interests of responsible citizenry. Since being well-nourished is an essential first step towards students' readiness to learn, schools must provide them with the skills, social support and environmental reinforcements they need to develop and practice healthy eating behaviour.

This **Call to Action** challenges the province, boards of education, school communities and public health units to acknowledge and act on their role in establishing a supportive nutrition environment in schools. Specifically, the province, boards of education, school communities and public health units must:

- Acknowledge that the current school nutrition environment in Ontario, at both elementary and secondary levels, is a significant public health issue that requires urgent action at both the local and provincial levels.
- Commit to the essential elements of a Healthy School Nutrition Environment.
- Create and promote consistent messages about the value of a Healthy School Nutrition Environment.
- Implement mandatory Food Standards for all Ontario elementary and secondary schools.
- Implement the proposed **Call to Action** recommendations for achieving a Healthy School Nutrition Environment.

This document provides the framework which key stakeholders can use to create, implement and support a Healthy School Nutrition Environment in Ontario.

3.0 Background

The Ontario Society of Nutrition Professionals in Public Health (OSNPPH) is the official organization of registered dietitians working in the Ontario public health system. OSNPPH members have special training in food and nutrition from accredited universities and are members of the College of Dietitians of Ontario. Members are primarily employed by local public health departments/units and are experts in nutrition in the area of public health, with their focus on improving health and preventing disease.

Under the *Health Protection and Promotion Act* (Ministry of Health and Long-Term Care, 1990), nutrition professionals working for boards of health in Ontario are mandated to provide public health programs and services targeted at health promotion, health protection and the prevention of disease. Health program and service guidelines are found in the document entitled *Mandatory Health Programs and Services Guidelines* (Ministry of Health, Public Health Branch, 1997). Working with the school community is one focus of these guidelines (see Appendix B).

Nutrition professionals in public health are witnessing a significant increase in school nutrition issues. Similar concerns have been expressed by other health professionals, parents and teachers, and various organizations such as Heart and Stroke Foundation of Ontario, Dietitians of Canada and Canadian Diabetes Association. Some of these concerns include:

- poor nutritional value of foods available in the school (such as cafeteria and tuck shop choices, and items sold as fundraisers or offered during special event days);
- inappropriate use of food as an incentive or reward to reinforce positive behaviour;
- increase in vending machines in schools selling foods and beverages with Minimum Nutritional Value;
- declining quality of food brought from home;
- unsuitable locations in which students eat their lunch;
- inadequate length of time students have to eat meals and snacks;
- cultural inappropriateness of foods offered at schools; and,
- increased absenteeism, sleeping in class, eating disorders, behavioural problems and the need for strong academic performance in the face of a challenging curriculum.

These concerns about student nutrition, along with the strong relationship between diet and optimal learning, and increasing rates of childhood obesity and type 2 diabetes, call for strong leadership, collaborative partnerships and aggressive action.

4.0 Children and Youth – Nutritional Status and Eating Patterns

4.1 The Association Between Healthy Eating and Academic Performance

Adequate nutrition is essential for the optimal growth and development of both children and youth, and for avoiding nutrient deficiencies. Well-documented research shows that there is a **clear link between good nutrition and school performance** (Papamandjaris, 2000; National Association of State Boards of Education, 2000). Several school boards acknowledge this link. In a policy statement, the Toronto District School Board (2000) declares:

> "The Toronto District School Board recognizes the direct relationship between healthy nutrition and the academic achievement of our students: that healthy nutrition helps to support students' learning, and enhances their physical, emotional, social and intellectual development; that well nourished students are able to concentrate better, retain and apply information more effectively, and are more likely to demonstrate positive behaviours and relationships with peers."

Similarly, the Chair of the Hastings and Prince Edward District School Board (2003) states: "Studies indicate that children's capacity to learn and their nutrition are directly related."

Other health and education organizations also acknowledge the benefits of healthy eating on academic performance (Fayette County Public Schools, 2003; Human Resources Development Canada, 1999; National Education Association, 2003; American Dietetic Association et al., 2003). Yet, faced with competing priorities and challenges, the Ministry of Education, boards of education and many schools have not made the promotion of a Healthy School Nutrition Environment a priority.

Negative consequences on students' ability to learn can occur if students do not eat well:

- Under-nourishment has impacts on children's behaviour, school performance and their ability to concentrate and perform complex tasks.
- Children's brain function is diminished by short-term or periodic hunger or malnutrition caused by missing or skipping meals (Tufts University Center on Hunger, Poverty & Nutrition Policy, 1994).

Breakfast Consumption

It is well-documented that students who eat a nutritious breakfast daily are better prepared to participate in the day's learning activities than those who do not eat breakfast (Kleinman et al., 1998; Center for Hunger, Poverty and Nutrition Policy, 1995; Meyers et al., 1989; Simeon & Grantham-McGreagor, 1989; Dickie & Bender, 1982). A study in Southwestern Ontario found that 31% of students in Grades 4 to 7 did not eat breakfast daily (Evers et al., 2001).

Similarly, the survey, *Trends in the Health of Canadian Youth* (King et al., 1999), reported:

- More than 30% of Grade 6 students did not eat breakfast daily.
- A consistent increase was found in both males and females who did not eat breakfast daily as grade level increased. By Grade 10, 60% of females did not eat breakfast every day.

Students who do not eat breakfast daily are less likely to have an adequate diet overall, when compared to those who do have breakfast (Evers et al., 2001). Therefore, school nourishment programs play a major role in encouraging healthy eating practices and improving the learning capabilities of elementary and secondary school children.

4.2 Current Consumption Trends of Canadian and Ontario Children and Youth

Recent Canadian data show low median intakes for most of the food groups in *Canada's Food Guide to Healthy Eating* for both genders and across several grade levels (Hanning and Jessup, 2002). More specifically:

- Children in Grades 6 and 8 consumed decreasing amounts of vegetables and fruit from 1990 to 1998, with a larger decrease in raw vegetable intake (King et al., 1999).
- One quarter of reported vegetables consumed by children were French fries (King et al., 1999).
- Only 14% of children between 9 and 12 years of age have four or more servings of vegetables and fruit a day (Heart & Stroke Foundation of Canada, 2002).
- Only 36% of adolescents between 12 and 19 years of age have five or more servings of vegetables and fruit a day (Statistics Canada, 2002).
- Half of children between 6 and 12 years of age did not consume any milk products for lunch (Market Facts, 1998).
- Only children who consumed milk at lunch met their daily calcium requirements (Johnson et al., 1998).

The consumption of foods with Minimum Nutritional Value (e.g., colas, pre-packaged lunch kits and chocolate) are displacing foods and beverages of higher nutritional value (e.g., milk products, vegetables and fruit) and may be contributing to the rising rates of childhood overweight and obesity. Statistics show:

- Daily soft drink consumption by both sexes has steadily increased from Grades 6 to 8 (King et al., 1999).
- Approximately one-third of Ontario students in Grades 4 to 8 consume soft drinks daily (Evers et al., 2001).
- Approximately 25% of Grade 6, 8 and 10 students consume candy and chocolate bars daily (King et al., 1999).
- A greater proportion of male than female students eat foods that are high in salt and fat (King et al., 1999).
- A study conducted by the Children's Exercise and Nutrition Centre in Hamilton, Ontario, showed that the diets of both obese and non-obese children are nutritionally poor, and high in empty-calorie sugars, fat and foods considered as 'extras'. This was, however, more prevalent in the obese group (Gillis, 2001).

Cafeterias and vending machines in schools sell high volumes of sweetened beverages and other foods with Minimum Nutritional Value, and it is often the larger size varieties that predominate. For example, serving sizes of carbonated beverages have increased from 6.5 oz. in the 1950s to 12 oz. in the 1960s and 20 oz. by the late 1990s (American Academy of Paediatrics, 2004; also see Appendix C, *Comparison Chart of Calorie, Fat and Sugar Content of Beverages Available in Schools)*.

Some beverages and foods offered in schools also contain significant amounts of caffeine (see Appendix D, *Recommended Maximum Caffeine Intake Levels for Children* and *Caffeine Content of Common Canadian Foods)*. Research shows that children may exhibit altered behaviour, such as anxiety, when they over-consume caffeine (Nawrot et al., 2003).

A child who consumes a 43g bag of potato chips, 75g chocolate bar and 355 mL can of cola takes in approximately…

10 teaspoons of fat
18 teaspoons of sugar
71 mg of caffeine

4.3 Potential Health-Related Consequences of Poor Eating Habits

The eating patterns of children and youth significantly impact their health at a young age. Poor eating habits, with low intakes of foods from any of the four food groups, may result in deficiencies of essential nutrients, such as calcium and iron. In addition, children's health and weight can be affected by over-consumption of minimally nutritious foods high in calories, sugar, saturated or trans fats, and salt. For example:

- An excess intake of 50 calories a day leads to an excess weight gain of 2.25 kg/year (Strauss, 2002).
- Each additional daily serving of a sugar-sweetened beverage consumed by children over a one-and-a-half-year period increases the risk of becoming overweight by 60% (Ludwig et al., 2001).

The risks of developing childhood obesity, malnutrition, disordered eating, type 2 diabetes, iron deficiency anemia, or dental caries all increase as a result of poor eating habits.

Detrimental effects have the potential to occur not only in children and youth, but also in adults since nutrition practices in childhood are often carried into adulthood. Substantial research indicates that healthy eating habits potentially play a role in preventing several adult-onset chronic diseases such as heart disease, diabetes and several types of cancer (Heart & Stroke Foundation of Canada, 2002; World Cancer Research Fund, 1997). Table 1 lists the potential health problems that can result from poor eating habits during childhood and adolescent years.

Table 1 The Health Effects of Nutrition-Related Disorders and Diseases

Childhood and Adolescence

Dental Caries	• There is a strong association between sugar consumption and dental caries, especially when preventative measures such as municipal water fluoridation and proper oral hygiene are not taken (Ontario Association of Public Health Dentistry, 2003).
Iron Deficiency Anemia	• Iron deficiency can increase fatigue, weakness, headaches, apathy and pallor. • Other signs of iron deficiency include shortened attention span and impaired intellectual performance (Health Canada, 1997). • Anemic children tend to do poorly on vocabulary, reading and other test scores (Parker, 1989).
Cardiovascular Disease	• Early indicators of atherosclerosis begin in childhood and are related to increased levels of LDL blood cholesterol levels, obesity and high blood pressure (National Heart, Lung and Blood Institute, 2002).
Overweight/Obesity	• There has been an increase in the prevalence of overweight and obesity among boys and girls between 7 and 13 years of age, where **one out of three children is considered either overweight or obese** (Tremblay and Willms, 2000). • Children who have excess weight may suffer from respiratory disorders, orthopaedic conditions, elevated blood cholesterol levels, stigmatization from peers and adults, low self-esteem, poor body image and depression (Guo and Chumlea, 1999). • Obesity in childhood and adolescence is an independent risk factor for adult obesity and is an acknowledged precursor to several chronic diseases (Guo and Chumlea, 1999).
Type 2 Diabetes	• The prevalence of type 2 diabetes among children and adolescents is increasing (American Diabetes Association, 2000). • Type 2 diabetes has recently emerged as a major complication of childhood obesity (Rosenbloom et al, 1999). • Today, 85% of children with type 2 diabetes are either overweight or obese at diagnosis (American Diabetes Association, 2000).
Disordered Eating	• A school-based study of females aged 12 to 18 years conducted in Toronto, Hamilton and Ottawa assessed disordered eating behaviours. The study reported that 23% of the girls were dieting for weight loss, 15% were binge eating, 8% reported self-induced vomiting, 2.4% used diet pills and 1.1% used laxatives (Jones et al., 2001). • Children and youth who develop unhealthy eating practices due to distorted perceptions of body weight are at increased risk of developing nutritional deficiencies (King et al., 1999).

Adulthood

Osteoporosis	• Approximately 50% of skeletal mass is accrued during adolescent years. In girls, 95% of total body mineral mass is accumulated by age 17 (Weaver, 2002). • Teenage girls have repeatedly been shown to be at risk for inadequate calcium intake (Looker et al, 1994).
Cancer	• There is strong evidence that diets containing substantial and varied amounts of vegetables and fruit will prevent 20% or more of all cases of cancer (World Cancer Research Fund, 1997).
Cardiovascular Disease	• The current lifestyle of children aged 9 to12 could put them in the fast lane for developing heart disease and stroke as early as in their 30s (Heart & Stroke Foundation of Canada, 2002).

The negative consequences and long-term implications of unhealthy eating practices during childhood and adolescence cannot be overstated. If students continue to eat as they do now, they will continue to overburden the health care system. The total direct cost of overweight and obesity in Canada in 1997 was estimated to be over $1.8 billion, which corresponds to 2.5% of the total health care expenditures for all diseases in Canada (Birmingham et al., 1999).

5.0 Schools are an Ideal Setting to Promote Healthy Eating

The school years are an influential time in a child's development, a time when life-long eating patterns are formed (World Health Organization [WHO], 1998). The early years are the most appropriate time to establish healthy eating patterns since children's eating behaviours carry into adulthood. Children and youth spend a significant amount of time in the school environment. As a result, schools provide the most effective and efficient way to reach almost all children and adolescents, as well as school personnel and families (WHO, 1998).

In addition to providing opportunities for academic learning, schools also have the capacity to enhance students' health, self-esteem and development of life skills and healthy eating behaviour. Knowledge alone does not result in students making healthy food choices. Besides the formal curriculum which teachers use to address nutrition, there are two other levels – the hidden and parallel curricula.

Hidden Curriculum

The hidden curriculum covers the entire day and includes all non-formal curricular activities throughout the school. This level of the curricula highlights the importance of the physical environment, the school's philosophy, nutrition policy and norms, consistent messages, positive role models and an inclusive spirit in which students and staff take responsibility for the school environment (Dixey et al., 1999).

Parallel Curriculum

The parallel curriculum comprises all external factors including home, neighbourhood norms and effects of mass media (Dixey et al., 1999). The parallel curriculum underscores the importance of both family and community involvement in a school through support systems and active networks. Family involvement includes parent-teacher evenings, school councils, and in-school family activities and celebrations. Community involvement (e.g., with non-governmental organizations, public health units) occurs through the coordinated actions of school networks, special projects and health promoting programs.

In a Healthy School Nutrition Environment, students learn reliable information in the formal curriculum, and put this knowledge into action through supportive hidden and parallel curricula. Table 2 describes why schools are an ideal setting for helping students to develop healthy eating behaviours, based on each level of the curriculum.

Table 2 Why Schools are an Ideal Setting to Promote Healthy Eating

Formal Curriculum	• Schools' formal curricula are good starting points from which students can learn about nutrition and healthy food choices.[1] • Children and youth need nutrition education to help them develop life-long healthy eating patterns consistent with *Canada's Food Guide to Healthy Eating* (Health Canada, 1992a). • Evaluations suggest that school-based nutrition education can improve the eating behaviours of students (Centers for Disease Control and Prevention [CDC], 1996; Contento et al., 1992).
Hidden Curriculum	• The hidden curricula offer valuable opportunities to influence positive eating behaviours through policy measures and by creating an environment that is supportive of healthy eating. • Schools provide opportunities to practice healthy eating. For example, food offered in school nourishment programs, for "special food" days and for school fundraising (e.g., in vending machines, school stores or tuck shops) are all avenues for reinforcing positive messages about nutrition and healthy eating. • Many students and staff eat at least one meal daily within the school setting (Dixey et al., 1999). Therefore, schools can teach students how to resist social pressures which influence eating. School-based programs can directly address peer pressures that discourage healthy eating and harness the power of peer pressure to reinforce healthy eating habits (CDC, 1996).
Parallel Curriculum	• External linkages between schools, families and communities provide an excellent opportunity for schools to integrate health and physical education, food service, and family contact (U.S. Department of Health & Human Services, 2001). • Family and community involvement in, and education about, healthy eating can reinforce healthy food choices and selection while at school (Bell et al., 1999). • Eating can be influenced to a large extent by education, social support and services at school (Health Canada, 1997).

[1] The Kindergarten Program (1998) addresses nutrition under the area of Personal and Social Development. The Ontario Curriculum (1998), Grades 1-8, includes nutrition as part of two broad areas 1) Health and Physical Education and 2) Science and Technology (Ministry of Education and Training, 1998; Bell et al., 1999). In Grade 10, both the Health and Physical Education curriculum and the Social Sciences and Humanities curriculum offer courses that address nutrition and healthy eating (Ministry of Education and Training, 1999). In Grades 11 and 12, the Health and Physical Education curriculum, the Social Sciences and Humanities curriculum and the Technological Education curriculum offer courses that incorporate nutrition and healthy eating (Ministry of Education and Training, 2000).

6.0 Healthy Eating at School

Canada's Food Guide to Healthy Eating (Health Canada, 1992a) was developed to address the nutrition needs of individuals over the course of a day or a week. It is based on the premise that "all foods can fit" into a healthy lifestyle. This philosophy assumes that people eat whole meals and that the content of those meals balance over time (Health Canada, 1992b).

Unfortunately, many students either skip breakfast and lunch or eat meals which are not nutritionally balanced. For example, lunch may consist of individual items selected from vending machines or the school store to augment or replace lunches brought from home. Other students purchase fast food meals from school cafeterias or offsite premises. Vending machines, cafeterias, school tuck shops, "special food" days, and in-class celebrations offer students regular access to foods with Minimum Nutritional Value. When nutritionally inadequate foods are available and promoted at school every day, it becomes increasingly difficult for students to balance their excesses (National Consensus Panel on School Nutrition, 2002).

This example illustrates the frequency with which foods of Minimum Nutritional Value may be offered at school*:

Monday is Nori's 7th birthday. Mom brings in doughnuts for the whole class.

Tuesday is bake sale day. Nori buys a cupcake at 11:30 am.

Wednesday is 'Special Food Day'. Pizza, pop and chips are on the menu.

Thursday's ski trip is cancelled. The principal makes up for cancellation with pop and chips for everyone.

Friday is Valentine's Day. Class celebrates with candy and cake.

*Note: These examples have been taken from actual occurrences in Ontario schools.

This example illustrates the frequency with which foods of Minimum Nutrition Value may be consumed by secondary students during the school day:

Monday is the day of the big math test. John is up early, but he's too nervous to eat breakfast. He drinks two cups of coffee when he arrives at school to make sure he's alert for the test. At lunch he celebrates the conclusion of his test by ordering a super-sized meal at the fast food outlet located near the school.

Tuesday John sleeps in and misses breakfast. He uses his lunch money to buy pop and chips at the vending machine between morning classes. He only has enough money left at lunch for fries and a coke.

Wednesday John has an early track practice at school. He is up and out the door before breakfast. After track he buys a sports drink from the vending machine. He discards the lunch his mom insisted he bring (so uncool!). He has no money for lunch but a friend shares a large order of fries with him.

Thursday John sleeps in. He grabs a doughnut from the cafeteria during his first spare. At lunch he has the cafeteria special - a burger, fries and large drink.

Friday John meets his friends and orders breakfast at the school cafeteria – two eggs, two slices of bacon, and home fries. He skips lunch so he can save money for dinner at the mall where he and his friends will be meeting after school.

It is also recognized that parents are not always providing healthy choices for their children to eat at school. Anecdotal reports from teachers suggest that lunches and snacks brought from home increasingly include foods with Minimum Nutritional Value.

Most children lack the skills to consider the long-term consequences of their actions. As a society, there are laws and regulations, such as those covering school attendance, use of tobacco and alcohol, and use of bike helmets, that protect children because of their inability to make good decisions regarding their long- and short-term health needs. It is incumbent upon the school system to foster healthy eating habits and to protect students from the influence of those who profit from children's growing consumption of foods with Minimum Nutritional Value (Center for Science in the Public Interest [CSPI], 2003a). To ensure a positive eating environment, parents, school administrators, teachers, cafeteria staff and other role models need to work together. Schools should be safe havens where students can access healthy food away from the unrestricted market place with its intense marketing and ready availability of foods with Minimum Nutritional Value (National Consensus Panel on School Nutrition, 2002).

7.0 Essential Elements of a Healthy School Nutrition Environment

A school that embraces the concept of a Healthy School Nutrition Environment is a school that promotes and supports healthy eating for students through both words and actions. The goal is to ensure consistency between the theory students learn in the classroom and the nutrition messages provided by the hidden and parallel curricula within the school environment.

The OSNPPH School Nutrition Workgroup suggests nine elements that are fundamental to a Healthy School Nutrition Environment. These elements form the foundation for the subsequent recommendations in the **Call to Action**. Table 3 outlines the elements that must exist within a school that aims to provide a Healthy School Nutrition Environment.

Table 3 The Elements and their Rationale for a Healthy School Nutrition Environment

Essential Elements	Rationale
1. Food and nutrition policies to support healthy eating	• The development and dissemination of a coordinated school nutrition policy is fundamental to providing the framework for a Healthy School Nutrition Environment (CDC, 1996). • A school nutrition policy allows for consistent healthy eating messages in the school environment. This will have a positive long-term effect on both the risk of chronic diseases and the effect of diet on health, growth and intellectual development (Pigeon, 2002). • Without a nutrition policy, schools risk negating nutrition lessons learned in the classroom by allowing actions that discourage healthy eating behaviours (CDC, 1996).
2. Nutrition education for students	• Nutrition education contributes to improved dietary practices that affect the health, growth and intellectual development of children and youth. • A sequential, comprehensive nutrition education curriculum should begin in Kindergarten and continue through secondary school (American Dietetic Association et al., 2003). • Research validates that behavioural change correlates positively with the amount of nutrition instruction received in the classroom (American Dietetic Association et al., 2003). • A minimum of 50 hours of nutrition education per elementary school year is necessary to impact behaviour (American Dietetic Association et al., 2003).
3. Nutrition education for staff provided by registered dietitians	• Registered dietitians have unique skills and expertise in nutrition education. • Training in nutrition can help gain teacher support for nutrition education and increase the extent to which teachers will implement the curriculum (CDC, 1996). • Teachers often need more help with innovative nutrition teaching techniques than with content. Therefore, training should focus on giving teachers the skills they need to use non-lecture, active learning methods (CDC, 1996). • Training teachers in nutrition can positively affect their nutrition behaviour and help them be positive role models for students. • Nutrition and food safety training for food service staff can enhance their skills and ability to provide healthy food choices.
4. Healthy, reasonably priced and culturally appropriate food choices available in schools	• What is taught in the classroom needs to be reinforced by the hidden curriculum through school activities which provide opportunities for students to practice what they learn in the classroom (CSPI, 2003b). • Nutrition education in the classroom is undermined in schools when snack bars, school stores and vending machines promote the sale of food and beverages with Minimum Nutritional Value. For example, soft drink vending machines are a contradiction to any healthy eating program. • Children who drink soft drinks consume more calories than those who do not (CSPI, 2003b). • Consumption of soft drinks can displace low-fat milk and 100% juice from children's diets (CSPI, 2003b). • Environmental changes, such as providing healthier choices in vending machines, are more effective within the school system because it is not left up to the student to decide whether to modify their habits (Dietz and Gortmaker, 2001). • Healthy habits are taught in the classroom, but the effect is diluted when students receive candy as rewards, or when freedom to choose means soft drinks and sweets.

Essential Elements	Rationale
4. (cont'd)	• Research has shown that foods used as rewards become more desirable to children than if they had not been used as rewards. When this particular food is freely available, children may over-eat it (Ikeda, 2003). • When the price of fruit and vegetables was lowered in a school cafeteria, there was a significant increase in fruit and vegetable consumption (French et al., 1997).
5. Positive role modeling of healthy eating by school staff	• Children and youth who see teachers eating healthy foods are more likely to eat well. • Teachers are found to be trusted sources for nutrition and dietary choices (Hanning and Jessup, 2002). • Elementary school teachers have a potentially greater influence on a child's health than any other group outside of the home (Berenson et al., 1991). • Teachers and coaches are seen to have a substantial impact, both positive and negative (Ontario Physical Health Education Association [OPHEA], 2002).
6. Student, parent and community education about healthy eating	• Students are more likely to adopt healthy eating behaviours if they receive healthy eating messages through multiple channels (e.g., home, school, community and the media), and from multiple sources (e.g., parents, peers, teachers, health professionals and the media) (CDC, 1996). • The attitudes and behaviours of parents and caregivers directly influence children and adolescents' choices of foods (CDC, 1996). • Improving parents' eating habits may be one of the most effective ways to promote healthy eating for their children as parents create conditions at home that are either conducive or not conducive to healthy nutrition (WHO, 1998). • At the elementary school level, involving parents in nutrition-related learning experiences such as games, take-home activities and school meals can enhance and change the eating behaviours of both students and parents (WHO, 1998; CDC, 1996). • Eating patterns at home translate into what students choose at school (National Food Service Management Institute, 2000). • Interest and support shown by parents was identified by youth as highly influential (OPHEA, 2002). • Involving the broader school community allows for innovative nutrition programming in the schools delivered in partnership with local community agencies.
7. School Nourishment Programs	• School Nourishment Programs (SNPs) improve students' cognitive performance and their educational achievement (American Dietetic Association et al., 2003). • Children who do not consume food and beverages that provide adequate energy and nutrition are at risk for a variety of poor outcomes including growth retardation, iron deficiency anemia, poor academic performance and development of psychosocial difficulties. There is also a higher risk that they will develop chronic diseases such as heart disease and osteoporosis during adulthood (American Dietetic Association, 2003). • SNPs provide a safety net for Ontario children and adolescents at risk. They may not eat breakfast because they may not be hungry in the morning, parents may not be home, eating breakfast may not be the norm, or breakfast may be a low priority. There may also be dieting or financial concerns. • Well-designed SNPs provide nutritious breakfasts, snacks and lunches based on *Canada's Food Guide to Healthy Eating*.

Table 3 (cont'd)

Essential Elements	Rationale
7. (cont'd)	• SNPs provide a vehicle for delivering nutrition education and consistent healthy eating messages to children and youth. • SNPs provide a way to involve the whole school community (e.g., senior volunteers and local community agencies).
8. Safe food practices and allergy-safe environment	• Providing a safe food environment will decrease the risk of food-borne illnesses (e.g., E.Coli, Hepatitis A) and protect students with life-threatening allergies (e.g., peanut or nut). • More schools are offering SNPs. These programs require safe food handling procedures and facilities to ensure the safety of participating students.
9. Appropriate scheduling of nutrition breaks	• Enjoying meals with friends is an important component of healthy eating (Conklin et al., 2002). • Lunches should be scheduled so that recess is not competing with mealtimes. Research shows that children eat less if they are eager to go outside for recess (Conklin et al., 2002). • Allowing students a minimum of 20 minutes to socialize with others at lunch provides a break in routine and refreshes them for afternoon classes (Conklin et al., 2003).

(Adapted from: Dixey et al., 1999; Team Nutrition USDA, 2000)

8.0 The Current Nutrition Environment in Ontario Schools

Table 4 outlines the current nutrition environment in Ontario schools, local and provincial factors contributing to this picture, and the barriers preventing Ontario schools from achieving healthy nutrition environments. Information was obtained from published literature and from surveys conducted by public health professionals and school boards. Although the survey data is anecdotal, the following trends illustrate how many school environments are inadequate in supporting healthy eating.

Table 4 The Current Nutrition Environment in Ontario Schools

Essential Element 1
Food and nutrition policies to support healthy eating

Current Provincial and Local Situation	Barriers
• The *Education Act of Ontario* governs policy for education (Bell et al., 1999). • The *Education Act of Ontario* allows school boards to purchase milk and operate school cafeterias. There are no governmental policies regarding school nourishment programs or regulating the nutritional content of foods offered in vending machines, for fundraising or in cafeterias. • Some school boards have developed policies; most have not (Bell et al., 1999). • Of four surveys conducted by public health personnel across the province, only one school board indicated that some of the schools under its jurisdiction had established a food policy or guidelines. • Generally, if schools have a food policy it concerns peanut allergies only.	• The *Education Act of Ontario* does not mandate or recommend school nutrition policies. • Potential resistance to policy implementation may occur if schools perceive that the enforcement of healthy eating policies infringes on their ability to fundraise (McKenna, 2003). • Lack of clarity on how to interpret and implement policy can create opposition to it (McKenna, 2003). • There is a lack of awareness about how policy promotes and supports healthy eating behaviours.

Table 4 (cont'd)

Essential Element 2
Nutrition education for students

Current Provincial and Local Situation

- The Ontario Minister of Education determines curricular guidelines under the *Education Act of Ontario.* The *Kindergarten Program* (1998) addresses nutrition under the area, Personal and Social Development. The *Ontario Curriculum* (1998), Grades 1-8, includes nutrition as part of two broad areas: 1) Health and Physical Education and 2) Science and Technology (Ministry of Education and Training, 1998; Bell et al., 1999).
- In Grade 9 and 10, the Health and Physical Education curriculum and the Social Sciences and Humanities curriculum offer elective courses that address nutrition and healthy eating (Ministry of Education and Training, 1999).
- In Grade 11 and 12, the Health and Physical Education curriculum, the Social Sciences and Humanities curriculum and the Technological Education curriculum offer elective courses that incorporate nutrition and healthy eating (Ministry of Education and Training, 2000).
- Ontario Learning Expectations focus primarily on increasing students' knowledge of nutrition through identification of the four food groups, nutritious foods, the composition of a balanced meal, and factors affecting food choices. Behavioural actions include self-analysis of food choices, and the planning and preparing of healthy meals (Bell et al, 1999).
- There is no required amount of time for teaching the Healthy Eating Expectations and nutrition is not consistently taught, especially at the secondary school level where such courses are optional (Bell et al, 1999).
- Inconsistent nutrition messages are taught in the classroom. In some instances, the U.S. Food Guide Pyramid is being used as a teaching tool in classrooms.
- Teachers commented that nutrition is not a high priority compared with other subject areas, such as the testing competencies for Grade 3 and 6.
- Students from the Ontario Youth Summit stated that they do receive basic nutritional information in schools, but they often find its presentation insufficient, misleading or boring (OPHEA, 2002).

Barriers

- Classroom pace is determined in part by student ability; teachers may elect to not cover certain sections of the curriculum.
- Currently, no standards exist for the amount of time a teacher is required to spend on the Healthy Eating Expectations. Nutrition education may be overlooked for other subjects.
- Teachers may lack knowledge and/or training on appropriate strategies for teaching about nutrition and eating behaviour.
- School boards follow the priorities set by the Ministry of Education, which has not placed a high priority on nutrition education.
- The *Ontario Secondary Schools Grade 9-12: Program and Diploma, 1999 (OSS)*, requires that only one compulsory credit in health and physical education be taken in high school. This course may not include nutrition education.

Essential Element 3

Nutrition education for staff provided by registered dietitians

Current Provincial and Local Situation	Barriers
• The number of designated days for professional development has been reduced, limiting time available for professional development. • Nutrition education training opportunities are optional and/or other administrative concerns take precedence. • Optional training workshops may be offered by public health departments and organizations [e.g., Dairy Farmers of Canada (Ontario)].	• Health and Physical Education teachers are not required to have specific nutrition training, although nutrition courses are available. • Lack of teacher time for additional training opportunities.

Essential Element 4

Healthy, reasonably priced and culturally appropriate food choices are available in schools

Current Provincial and Local Situation	Barriers
• Reports from public health professionals indicate that some teachers send mixed messages by using food as a reward or incentive for children. Some examples include candy, field trips to fast food restaurants, a jelly bean jar on a student's birthday, and gummy bears for a school bingo prize. • At an Ontario Youth Summit involving 59 Grade 9 youth from across the province, the majority of participants indicated that healthy food choices in the school environment are often more expensive than the less healthy choices (OPHEA, 2002). • A comment from a student at the Ontario Youth Summit (OPHEA, 2002): "I don't think we promote healthy eating as much as we should. People say that you should eat healthy, but if you go to school it's hard to find something that is healthy enough for you to eat, that is good for you. It's not like they put carrots and things in the vending machines. They put chips and chocolate bars and things like that." • Decisions regarding the food and beverages available in schools are under the authority of individual school boards, which follow the *Education Act of Ontario* for guidance (Basrur, 2003). • Pizza is the most popular lunch item. Although it is not necessarily an unhealthy choice, it is often served with items that are nutritionally poor, such as potato chips and soft drinks. • Other foods offered for "special food" days include hot dogs, potato or nacho chips, pop, cookies, milk (chocolate and white), fast food restaurant items (e.g., burgers/ cheeseburgers, French fries, ice cream bars, fried chicken, sub sandwiches), chili, pasta, chocolate bars, rice crisp squares, water, and ice cream/sherbet.	• There is a misconception that students do not like to eat healthy foods. • There is a misconception that healthy foods will not sell. Money raised through sales from vending machines and fundraisers is easy money to be made. • Some fundraising organizers (e.g., school councils) are not aware of the impact on students of the continual promotion of foods with Minimum Nutritional Value. • Sophisticated, multimillion-dollar advertising campaigns for fast foods, sweetened beverages and salty snacks influence student food preferences (American Dietetic Association et al., 2003). Media influences were perceived by students at the Ontario Youth Summit as having a powerful impact on their level of awareness and, as a result, on their lifestyle choices (OPHEA, 2002). • Merchandising incentives also influence and persuade schools to offer less nutritious items (American Dietetic Association et al., 2003). • Students have commented that there is not enough equipment, such as microwaves, available in the cafeteria so that students can bring their own food. • There are limited amounts of healthy foods prepared each day. As a result students turn to fast food options. • Healthy foods such as salads, sandwiches, and muffins, are more expensive than French fries, hamburgers and cookies. Students say they are choosing freshly baked chocolate chip cookies for breakfast from the cafeteria because they are cheap (three cookies can be purchased for the price of one muffin).

Table 4 (cont'd)

Essential Element 4 (cont'd)
Healthy, reasonably priced and culturally appropriate food choices are available in schools

Current Provincial and Local Situation

- In public health surveys, teachers and parents report decreased sales of milk in schools with vending machines that offer fruit drinks and/or pop.
- Per capita consumption of milk is 30% lower in schools that sell pop and fruit drinks than in schools that sell milk only (Dairy Farmers of Canada (Ontario), 1999).
- Many schools hold "special food" days and have contracts with fast food restaurants to provide lunches for students. Frequency varies from daily to once a month. Foods from these vendors are usually high in fat and calories.
- There is an increasing implementation of secondary school cafeteria programs which promote healthy food choices (e.g., Eat Smart! School Cafeteria Program and Teen Cuisine).

Fundraising with food

- Most schools fundraise with food.
- Results from public health surveys indicate that chocolate bars, chocolate-coated nuts, cookie dough, doughnuts, and home baking are all common fundraising items.

Vending machines

- School boards determine whether they will sign contracts with major vending machine companies.
- Some school boards have multi-year contracts with beverage companies.
- Some contracts carry an optional clause for elementary schools. For example, a contract may state that it is up to the principal's discretion to fill the pop machines in the school with non-carbonated products from the same beverage company (machines include the company's brand logo).
- Common vending machine contents include pop, iced tea, sports drinks, water, granola bars, chocolate bars, rice crisp squares, chewy fruit snacks, chewy candy, corn nuts, and chips.
- Beverage companies that become involved with individual schools or school boards generally offer incentives for selling products from their vending machines.

Information on food items sold in schools

- Various elementary schools have tuck shops offering a variety of foods, including sweetened beverages, potato chips, granola bars, cheese puffs, popcorn, pepperoni sticks, ice cream, gum and chocolate bars.
- Occasionally, fresh fruit is made available.

Essential Element 5

Positive role modeling of healthy eating by school staff

Current Provincial and Local Situation	Barriers
• School staffrooms may not support healthy eating (e.g., pop machines, school staff providing coffee and doughnuts for special occasions).	• Teachers may not be aware of their influence as role models. • Pop machines may be located in teacher staffrooms. • There are misconceptions regarding the definition of healthy eating. • Personal opinions and food company sponsorships are influencing teaching strategies and messaging. • Teachers may insist on freedom of choice and may resist pressure to conform to healthy eating standards.

Essential Element 6

Support from students, parents, and the wider community

Current Provincial and Local Situation	Barriers
• Reports from various public health dietitians, school administrators and teachers indicate that children are coming to school with more convenience foods. For example, teachers and lunchroom supervisors have commented that more "junk" food, and snack items (e.g., granola bars and pre-packaged lunch kits) are in lunch bags. Large beverage portions (500 mL bottles) are often seen. Lunch bags often contain food choices high in sugar and fat, and low in nutrient value. • Reports from teachers indicate parents are delivering fast food take-out to school for their children's lunch. • Garbage-can assessments completed by public health professionals have identified more chips and candy wrappers than healthy food wrappers.	• Parents perceive that time is a barrier to packing healthy lunches and snacks. • There is a lack of awareness among some parents about what foods are healthy. Advertising on food packages may mislead parents to think the items are nutritious. • There is a misconception that healthy foods are more expensive. • There is lack of time for teachers and public health to develop nutrition programs that will involve families and the community. • Comments from teachers and students identify peer pressure as a barrier to eating healthy school lunches. For example, students have commented that ethnic and healthy foods are ridiculed by classmates. Parents comment that children feel uneasy taking "different foods" to school, as they risk being teased. Lack of adult supervision during break times exacerbates this situation. • Many parents, children and adolescents have good intentions to practice healthy eating, but find it difficult to maintain due to competing foods offered at school. • It is sometimes difficult for schools to partner with community agencies.

Table 4 (cont'd)

Essential Element 7
School nourishment programs

Current Provincial and Local Situation

- Ontario SNPs are only partially funded at the provincial level of government, with no funding at the federal.
- Most SNPs were developed as grassroots initiatives to meet local needs at schools.
- Many SNPs are initiated and managed by a community volunteer(s) and at most one paid coordinator.
- Most of these SNPs rely on the paid coordinator or untrained volunteers to take nutrition messages and resources to the program.
- Few SNPs have been formally evaluated (Bell et al., 1999).
- SNPs are under constant threat of elimination because of changing political climates and funding priorities at both the provincial and municipal level.
- Some schools have an "emergency" food cupboard stocked with food items which are not always healthy. For example, one school had an emergency food cupboard that consisted of fruit drinks, chocolate marshmallow granola bars and chewy fruit snacks.
- Some SNPs have formed partnerships with local community agencies, which provide them with more opportunities. For example, one partner in Toronto, FoodShare, has championed a salad bar initiative.
- In addition to breakfast, snack and lunch programs, many schools across the province have implemented a milk program (e.g., Dairy Farmers of Canada (Ontario), Elementary School Milk Program). These programs offer milk to elementary students at a low cost.

Barriers

- Many SNPs do not get started, or fail, due to lack of adequate funding for food and volunteers.
- There is a lack of volunteers to help run the programs.
- People wrongly perceive that SNPs should only be implemented in low-income areas.
- There is a lack of awareness about SNP benefits.
- There is a lack of knowledge on how to start a program.
- Some schools feel that it is not their responsibility to organize and implement SNPs.

Essential Element 8
Safe food practices and allergy-safe surroundings

Current Provincial and Local Situation	Barriers
• Many schools do not have lunchrooms which may result in students eating in inappropriate areas (e.g., gymnasium floor). • Schools are not equipped to prepare food on premises for SNPs. For example, many schools do not have three sinks for washing dishes, or a separate hand washing sink. Very few have industrial dishwashers. • There are reports of lunch bags being left beside sunny windows and on heat registers, where temperatures are unsafe for storing foods. • Many school boards' anaphylaxis policies are inadequate or inadequately implemented by individual schools. • Some children are not given the chance to wash their hands before eating lunch (takes too long). • Unless a school has a cafeteria, there is inconsistent application of the *Ontario Food Premises Regulation 562/90* (Ministry of Health and Long-Term Care, 1990). For example, only in some areas are SNPs inspected by public health inspectors.	• Inadequate facilities and equipment make it difficult to provide a safe environment. • There is a lack of money to fund appropriate facilities or equipment. • There are a limited number of lunchrooms available. • There are too few lunchroom supervisors. • There is a lack of resources, time and commitment to undertake training and set up an allergy prevention and response system. • School administrations may be unclear about how to develop and enforce policies related to food allergies.

Essential Element 9
Appropriate scheduling of nutrition breaks

Current Provincial and Local Situation	Barriers
• Schools have decreased the amount of time available for students to eat lunch (American Dietetic Association et al., 2003). • Children are expected to go to the washroom, get lunch, eat it, and get dressed to go outside – all within 15-20 minutes. • Some school boards in Ontario have implemented the Balanced School Day schedule. • Many children are choosing to skip lunch or selecting foods from snack bars or vending machines which they can eat quickly (American Dietetic Association et al., 2003). • Parents comment that teachers are asking them to limit their young children's lunches to only three food items, so that they don't take too long to finish their meal. • Some high school lunch breaks are occurring at inappropriate times. For example, they may be scheduled during first period between 8:00 and 9:00 am. • Reports from parents indicate some schools do not allow children to eat lunch and snacks outside due to concerns about littering, bee stings and food allergies.	• There are too few staff to provide lunchroom supervision. • There is a limited number of appropriate lunchrooms available. • Educators may have a limited knowledge of the link between good nutrition and learning. • The nutritional impact of the Balanced School Day schedule has not been sufficiently evaluated. • Children may not be permitted to take unfinished lunches and snacks outside.

9.0 Creating a Healthy School Nutrition Environment – Recommendations for Action

The OSNPPH School Nutrition Workgroup acknowledges that the school system alone cannot rectify all nutrition-related problems facing students in the Ontario school system. A school's primary role in regard to nutrition is to ensure that students can make food choices that are consistent with what they learn in the classroom. However, schools cannot work independently. They need to work collaboratively with the provincial government, school boards, boards of health and parents. These stakeholders can help to achieve a Healthy School Nutrition Environment by acting on the nine recommendations put forward by the OSNPPH School Nutrition Workgroup and outlined in table 5.

Table 5 Recommendations and Suggested Actions for Provincial Ministries, School Boards and Boards of Health

Recommendation	Actions		
	Provincial Government	**Local School Boards/ Schools**	**Local Boards of Health**
1. Develop and adopt food and nutrition policies that create and support healthy eating environments in all Ontario schools.	Facilitate collaboration between the Ministries of Health and Long-Term Care and Education to address critical nutrition issues in provincial schools. Adopt the **Call to Action** as a basis for developing and implementing school food and nutrition policies that will reflect the recommended Food Standards in section 10.0 of the **Call to Action.** Amend the *Education Act of Ontario* to direct school boards to develop food and nutrition policies that foster a healthy school nutrition environment as defined in section 7.0 of the **Call to Action.**	Commit to the establishment of board-wide food and nutrition policies that will include the recommended Food Standards in section 10.0 of the **Call to Action.** Collaborate with local boards of health to identify priorities and support the development, implementation and evaluation of board-wide food and nutrition policies. Encourage the formation of School Nutrition Advisory Committees with a mandate to plan, design and evaluate efforts to achieve a Healthy School Nutrition Environment.	Allocate appropriate resources to support schools/school boards to develop and implement food and nutrition policies. Use **Call to Action** to advocate for provincial government leadership on issues related to food and nutrition in schools. Use **Call to Action** to make school boards aware of the importance of creating a Healthy School Nutrition Environment. Provide consultation and training on food and nutrition policy development to support local school boards. Work with school councils, School Nutrition Advisory Committees, principals, teachers and parents to develop and implement school food and nutrition policies. Establish an evaluation or monitoring system to determine the impact of school food and nutrition policies.
2. Ensure that the formal curriculum is designed to provide adequate learning opportunities for students to develop knowledge, attitudes and skills for adopting healthy eating behaviours; and that teachers devote sufficient time to teaching all of the healthy eating expectations in the curriculum.	Review formal curriculum expectations for healthy eating education at the elementary level. Ensure content is appropriate through consultation with nutrition education experts.Mandate a minimum of 50 hours of nutrition education per school year at the elementary level.	Ensure that students at the elementary level are receiving no less than the minimum number of hours per year of nutrition education in the classroom.	Advocate for at least 50 hours of nutrition education at the elementary level. Make school boards aware that this is the minimum required to affect positive behaviour change. Advocate for the need for nutrition education, particularly at the secondary level.

Table 5 (cont'd)

Recommendation	Actions		
	Provincial Government	**Local School Boards/ Schools**	**Local Boards of Health**
2. (cont'd)	Develop sample curricula at the elementary level that integrate nutrition education within other subject areas (e.g., math) and that reflect 50 hours of nutrition education. Amend *Ontario Secondary Schools Grade 9-12: Program and Diploma Requirements, 1999 (OSS),* to ensure that at least one health and physical education credit which includes specific nutrition expectations is compulsory for students in grade 9 or 10. Mandate secondary schools to provide an optional food and nutrition credit with course content that reflects *Canada's Guidelines for Healthy Eating.* Mandate integration of nutrition education into compulsory credits at the secondary level, to reinforce the nutrition expectations in the compulsory health and physical education credit.	Ensure that food and nutrition courses provide opportunities for students to gain practical skills necessary to promote adoption of healthy eating behaviours, such as participation on a School Nutrition Advisory Committee or working within the school cafeteria or tuck shop. Ensure that nutrition education is integrated into mandatory credits at the secondary level. Ensure a food and nutrition credit is universally available at secondary level.	Provide resources to secondary school teachers to facilitate integration of nutrition education into mandatory credit courses (e.g., health and physical education, science).
3. Encourage and support opportunities for teachers to be trained in nutrition education.	Review minimum requirements to teach a specialist nutrition course. Mandate faculties of education to include a minimum of one nutrition education course for elementary teachers-in-training.	Provide release time for teachers to attend continuing education opportunities pertaining to nutrition education. Prioritize nutrition education opportunities for professional development days. Partner with boards of health to provide in-services or workshops reflecting the nutrition education needs of teachers.	Provide consultation and make recommendations to school boards regarding relevant teaching resources. Identify gaps and needs of teachers to assist in the provision of nutrition education. Develop tools and resources to assist teachers in implementing nutrition education, particularly at the secondary level.

Recommendation	Actions		
	Provincial Government	**Local School Boards /Schools**	**Local Boards of Health**
3. (cont'd)			Provide annual in-services or workshops for elementary and secondary teachers.
4. Ensure all foods available in the school setting are consistent with classroom teaching, reinforce healthy eating messages and are culturally acceptable.	Ensure adequate funding to schools to alleviate reliance on fundraising with food to support student programs. Enact policy for mandatory nutrition and food safety training of food service staff in school cafeterias. Collaboration is required between Ministries (Health and Long-Term Care, and Education), and expert stakeholders to review and adopt the recommended Food Standards. Collaboration is required between above Ministries to develop a joint position on: • food contracts within the school setting, including specifications for fast food chain operations and soft drink vending machines; and, • advertising to students and use of advertising in schools.	Ensure all foods offered in the school setting reflect current Food Standards in section 10.0 of the **Call to Action.** Develop and enforce a policy for contracts with local food and beverage vendors. Encourage student leadership as a practical application of classroom learning (e.g., participation on School Nutrition Advisory Committees).	Re-examine nutrition component of Food Safety Training course. Provide consultation and support to school administrators, as well as school and student councils regarding food choices available in schools. Provide schools with information on healthy alternatives and non-food options for fundraising. Encourage secondary schools to participate in point-of-purchase nutrition education programs.

Table 5 (cont'd)

Recommendation	Actions		
	Provincial Government	**Local School Boards/ Schools**	**Local Boards of Health**
5. Encourage and support school staff in promoting and modeling healthy eating behaviours while at school.	Ensure that a statement related to modeling healthy eating behaviours is included in provincial standards for developing school food and nutrition policies. Ensure that the Food Standards in section 10.0 of the **Call to Action** are implemented, and that they provide direction on the use of food in the classroom (e.g., for nutrition education purposes, rewards).	Ensure teachers are appropriate role models by encouraging them to refrain from consuming foods with Minimum Nutritional Value when students are present – just as they would not smoke around students. Implement worksite wellness programs that facilitate healthy staff and school environments. Ensure that a statement prohibiting the use of food rewards in the classroom is included in school food and nutrition policy.	Consult with school administrators and teachers on implementing worksite wellness initiatives and support them in doing so. Educate teachers about the appropriate use of rewards in the classroom. For instance, suggest non-food rewards that do not sabotage efforts to create a healthy eating environment.
6. Educate parents and the wider community about nutrition, and involve them in activities that promote the practice of healthy eating.	Mandate school councils to address health issues in schools (e.g., creation of food and nutrition policy). Facilitate collaboration with the Ontario Parent Council to address critical nutrition issues in provincial schools.	Recognize, value, support and encourage parental involvement in making changes to reflect a Healthy School Nutrition Environment. Provide opportunities for all parents to be involved in the process of designing and implementing school food and nutrition policy. For example, form a School Nutrition Advisory Committee, which includes students, parents and educators responsible for planning, designing and evaluating efforts to achieve a Healthy School Nutrition Environment. Include practical suggestions for school lunches and snacks in school newsletters, through collaboration with local boards of health. Distribute nutrition education materials stressing the advantages of healthy eating behaviours to parents, in collaboration with local boards of health.	Use a variety of media and strategies to develop and implement comprehensive nutrition education, skill-building, and social marketing campaigns. Include the Internet, public service announcements, parent workshops, cooking sessions, and grocery store tours. Share initiatives within public health regions and collaborate to develop provincial resources. Keep messages consistent. Act as a resource to schools to assist with the development and dissemination of healthy eating information and skill-building opportunities for parents.

Recommendation	Actions		
	Provincial Government	**Local School Boards/ Schools**	**Local Boards of Health**
7. Support the development and sustainability of school nourishment programs, including breakfast, lunch and snack programs.	Develop provincial nutrition, facility, and operation standards for school nourishment programs. Establish quality control procedures to ensure school nourishment program effectiveness and adherence to provincial nutrition, facility, and operation standards. Enhance provincial funding for the creation and sustainability of school nourishment programs which meet the provincial nutrition, facility, and operation standards. Ensure priority is given to facility design that supports school nourishment programs during renovations or construction in schools.	Support new and existing school nourishment programs to ensure sustainability. Create a paid position for a board-wide coordinator of school nourishment programs. Collaborate with local board of health to ensure the provincial nutrition, facility and operation standards are met. Ensure menus are planned with input from students and include local, cultural and ethnic favourites of students.	Advocate to all school boards for the implementation of school nourishment programs. Assist with the monitoring of provincial nutrition and facility standards in school nourishment programs. Promote community awareness about the importance of school nourishment programs. Provide examples of different models of school nourishment programs (e.g., salad bar program or contracts with local farmers). Provide consultation on menu planning, budgeting and food safety for school nourishment programs. Provide nutrition education and food safety training to staff and volunteers who coordinate school nourishment programs.
8. Ensure a safe food environment where all students are comfortable and can enjoy eating.	Ensure all new schools plan appropriate lunchroom facilities. Ensure that the Ministry of Health and Long-Term Care and, the Ministry of Education collaborate to establish appropriate standards for lunchrooms.	Collaborate with local boards of health to develop and enforce policies regarding allergy-safe and safe food environments. Ensure that food service staff are trained in a food safety program approved by the local board of health. Ensure all food premises follow food safety policies, with the assistance of public health inspectors. Make certain that enough time is available for students to wash hands before eating.	Provide consultation and training for food service personnel, school nourishment program coordinators, volunteers, and teachers on allergy-safe and safe food handling practices. Provide support and guidance for development of policies regarding food allergies and food safety. Provide information on how fundraising money might be spent to facilitate healthy eating (e.g., purchase of a refrigerator or microwave ovens).

Table 5 (cont'd)

Recommendation	Actions		
	Provincial Government	**Local School Boards/ Schools**	**Local Boards of Health**
9. Develop recommendations for scheduling nutrition breaks at appropriate times that allow students sufficient time to eat.	Encourage school boards to develop policy on appropriate scheduling of nutrition breaks. Evaluate the nutritional implications of the Balanced School Day. Mandate school boards to allocate a minimum of 20 continuous minutes of eating time for nutrition breaks.	Implement and enforce policy regarding scheduling of nutrition breaks.	Provide support and guidance for development of policies regarding nutrition breaks. Provide guidance on scheduling of nutrition breaks.

10.0 Food Standards for Ontario Schools: A Critical Need

10.1 Recommendation

The OSNPPH School Nutrition Workgroup calls for the establishment of mandatory minimum Food Standards for all elementary and secondary schools in Ontario. Food Standards are based on the classification of foods with Maximum, Moderate and Minimum Nutritional Value and define the acceptable foods and beverages that can be served and/or sold in schools and at school-sponsored functions (refer to table 6, Food Standards, and table 7, Classification of Foods with Maximum, Moderate and Minimum Nutritional Value).

Given the current situation, it is critical to eliminate foods with Minimum Nutritional Value from all Ontario schools to foster nutrition integrity between the formal, hidden and parallel curricula. By encouraging students to choose foods from the four food groups in *Canada's Food Guide to Healthy Eating,* the Food Standards would support them in consuming more vegetables and fruits, milk products and whole grains.

10.2 Guiding Principles

Effective standards must:

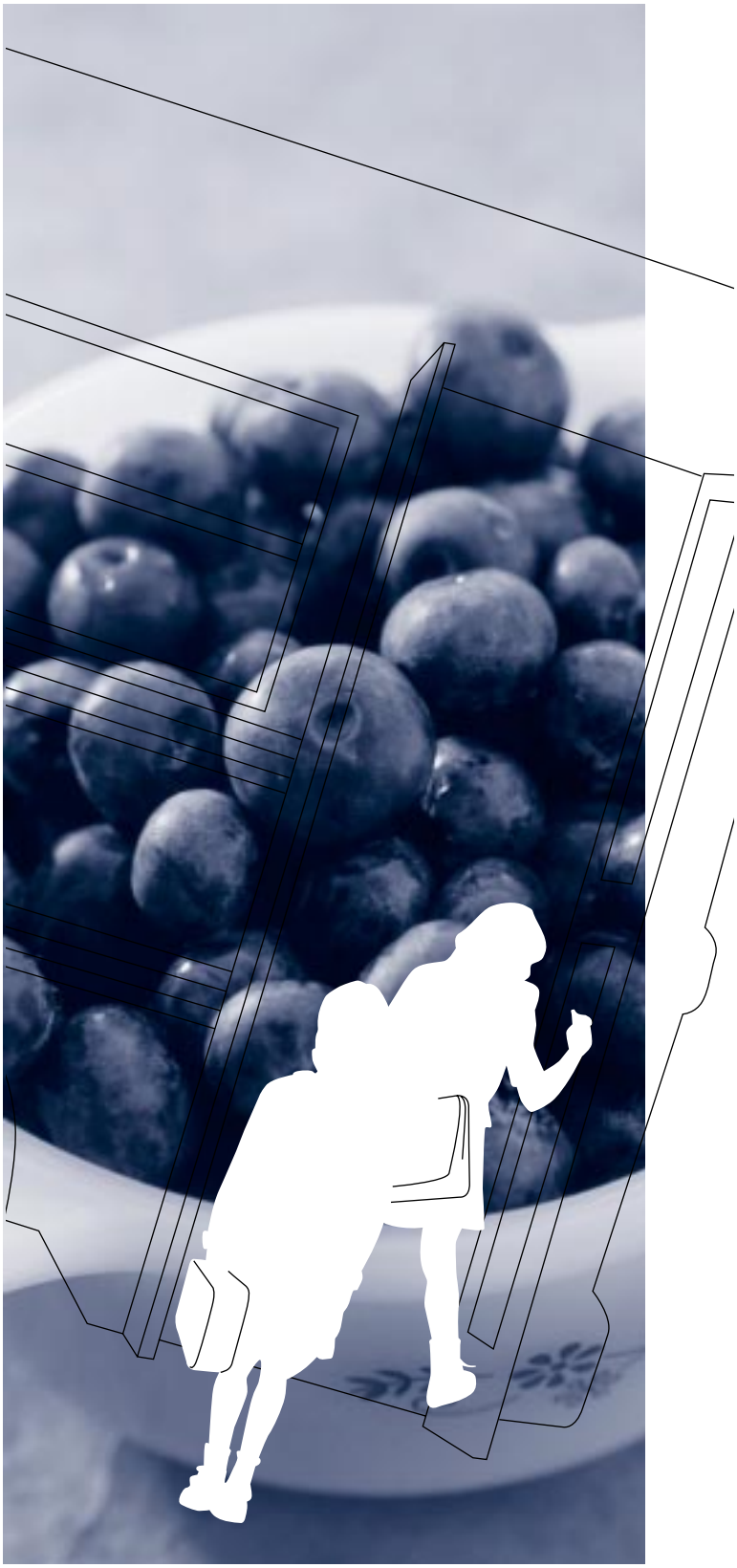
- Ensure that foods available on school premises contribute to students' nutritional well-being and the prevention of disease.
- Ensure that schools encourage students to enjoy a variety of foods.
- Recognize that foods brought from home may not meet the standards. However, the standards provide an opportunity to raise parental awareness about the importance of healthy eating and packing healthy lunches and snacks.
- Ensure that foods are culturally and socially appropriate, and prepared or offered in ways that will appeal to students, retain nutritive quality and foster lifelong healthy eating habits.
- Ensure that foods are served in age-appropriate quantities and at reasonable prices.
- Eliminate the sale and availability of foods with Minimum Nutritional Value.
- Eliminate all marketing of foods with Minimum Nutritional Value, including those from fast food chains.
- Be phased in over a period of time in consultation with all stakeholders.

10.3 Scope of the Food Standards

The Food Standards extend to all areas within the school where food is sold or available:

- In the classroom (the formal curriculum), through food experiences, food sampling, celebrations, and teaching tools or rewards.
- In broader school settings (the hidden curriculum), through vending machines, milk programs, fundraisers, school stores, cafeterias, and staff rooms.
- At school community functions (the parallel curriculum), through recreation activities, parent-teacher nights, school open house events, and school council events.

The Food Standards reflect the importance of positive role modeling and therefore apply to students, student organizations, school staff, school councils, and providers of school nourishment programs. The Food Standards emphasize healthy food choices such as whole grains, vegetables, fruit and lower fat milk products, while respecting and reflecting cultural and ethnic foods at a reasonable cost. **The overriding goal is to ensure that, regardless of the setting, no foods with Minimum Nutritional Value will be offered.**

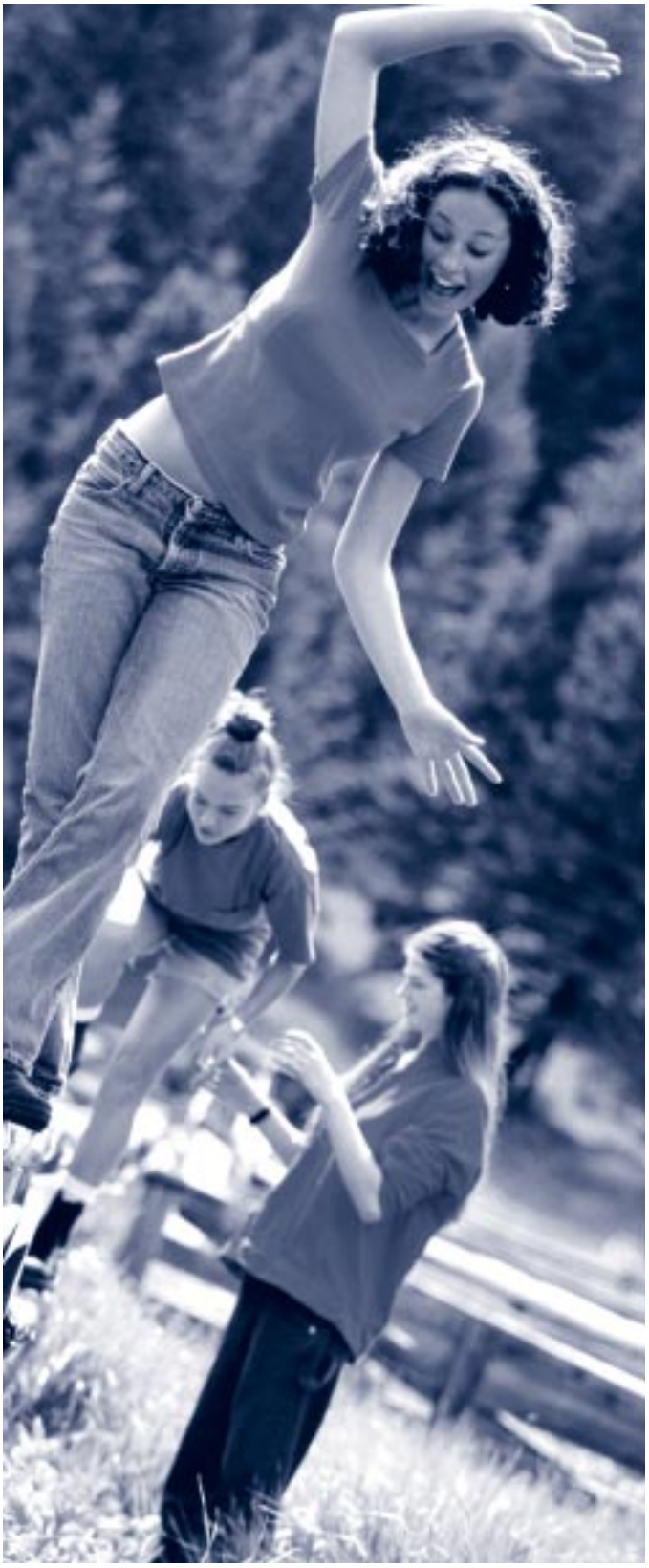


10.4 Table 6 Food Standards

Setting	Guidelines for Implementation	Comments
Classrooms	1. No foods with Minimum Nutritional Value should be offered for classroom celebrations. If food is used as part of a celebration, emphasize foods with Maximum Nutritional Value. 2. Food should not be used as a reward to modify classroom behaviour. 3. Classroom teaching tools should not display or promote corporate logos or brand names (e.g., food models with a McDonald's™ logo). Actual packaged foods – for example, to teach label reading – are permissible.	Standards emphasize the healthiest options by including foods with Maximum Nutritional Value most of the time. Some celebrations may include foods with Moderate Nutritional Value. Respect student allergies and cultural requirements.
School Council Meetings	1. No foods with Minimum Nutritional Value will be served. 2. If a food with Moderate Nutritional Value (e.g., fruit bread) is offered, ensure that at least one choice from foods with Maximum Nutritional Value is offered to balance the selection (e.g., fresh fruit or lower fat cheese).	Standards emphasize the healthiest options and provide choices.
School Fundraisers	1. No foods with Minimum or Moderate Nutritional Value will be used for fundraising. 2. Select from either non-food items or foods with Maximum Nutritional Value only.	Standards reinforce healthy eating messages taught in the classroom. Local public health department can provide a list of alternative fundraising activities.
Special Food Days and Cafeterias	1. No food with Minimum Nutritional Value will be served. 2. If a food with Moderate Nutritional Value (e.g., white rice or lean lunch meat) is offered, a comparable choice from the same food group in the Maximum Nutritional Value category must also be available. **Note:** During contract negotiations, the services and menus of cafeterias or lunch programs should be negotiated with assistance from public health dietitians, who will provide guidance and details for appropriate menu items. Competitive pricing should be in place to encourage and support the selection of healthy eating choices.	To emphasize the healthiest options, aim to offer foods with Maximum Nutritional Value at least 80% of the time.

10.4 Table 6 (cont'd)

Setting	Guidelines for Implementation	Comments
School Tuck Shops	1. No foods with Minimum Nutritional Value will be available. 2. If foods having Moderate Nutritional Value (e.g., fruit bread) are offered, ensure that each selection is balanced by a food from the Maximum Nutritional Value category (e.g., fresh fruit or lower fat cheese).	To emphasize the healthiest options, foods with Maximum Nutritional Value should represent at least 80% of foods available.
Vending Machines	**Beverage vending machines** 1. Offer only 100% fruit or vegetable juice, water or fluid milk (white or flavoured, 2% MF or less). **Snack vending machines** 1. No foods with Minimum Nutritional Value will be available. 2. Foods with Maximum Nutritional Value should represent at least 80% of the foods available. 3. Foods with Moderate Nutritional Value should represent no more than 20% of foods available. 4. Appropriate portion sizes must be consistent with *Canada's Food Guide to Healthy Eating.*	Students may rely on vending machines for lunch or to supplement their lunch. To increase access to healthier choices, mostly provide foods with Maximum Nutritional Value.
School Nourishment Programs	Not available.	School nourishment programs currently do not have specific, established standards that mandate the types or quality of foods that must be served. These programs require a thorough review to establish consistent standards that ensure students using these programs receive safe, high quality, nourishing food. School nourishment programs require their own set of detailed standards and it is recommended that these be developed as a separate document. The OSNPPH School Nutrition Workgroup has identified the need for Food Standards for SNPs as a priority. This is supported by many nourishment program coordinators and volunteers who have been requesting clarity about current guidelines.



10.5 Classification of Foods with Maximum, Moderate and Minimum Nutritional Value.

The OSNPPH School Nutrition Workgroup developed table 7 to distinguish between foods with Maximum, Moderate and Minimum Nutritional Value. It is not an exhaustive list. Please keep the following issues in mind when reviewing the table:

- The table presents optimal choices within the school context where children or parents cannot control the amounts or frequency of food intake and dietary balance is hard to achieve. Students, especially young children, should not have the opportunity to make unhealthy food choices at school.
- Some foods with Moderate Nutritional Value, as well as combination foods, may need to be assessed on an individual basis. Issues to consider include the method of preparation; portion size; proportion of added fats, sugars, salt and whole grain ingredients; and, degree of processing. For example, a school may inappropriately purchase a commercially prepared or fast food muffin that is too large and high in fat and sugar. Alternatively, the school may prepare its own muffins from scratch, making the muffins with whole grains and fruit or vegetables, while controlling portion size and amounts of fat and sugar.
- When selecting foods from this list, consider food allergies (e.g., peanut butter) and the cultural needs/influences in individual schools.
- Not all foods listed below will be socially and/or culturally acceptable for every school community. For example, there may be a need to identify foods that are Kosher or Halal.
- Dental considerations were addressed when determining where a particular food should be categorized. For example, 100% chewy fruit snacks were identified as having Moderate Nutritional Value because they are dentally poor choices.
- Schools planning to offer food to students should consult public health dietitians. They can provide assistance in helping to identify the nutritional value of foods.

Table 7 Classification of Foods with Maximum, Moderate and Minimum Nutritional Value

Canada's Food Guide to Healthy Eating Food Groups	Foods with **Maximum** Nutritional Value	Foods with **Moderate** Nutritional Value	Foods with **Minimum** Nutritional Value
	These foods are: • good or excellent sources of important nutrients (e.g., vitamins, minerals, protein and fibre) • generally low in added fat, sugar and/or salt • found within one of the four food groups in *Canada's Food Guide to Healthy Eating* • generally whole grains, vegetables and fruit, low fat milk products and lean meats and alternatives	These foods are: • sources of nutrients (e.g., vitamins, minerals, protein and fibre) • sometimes high in fat, sugar, salt and/or excessive calories, generally as a result of processing. Some of these foods are difficult to classify because of the brand and/or their method of preparation and the portion size offered (e.g., commercial cake-style muffin, versus whole grain muffin with reduced fat and sugar) • found within one of the four food groups in *Canada's Food Guide to Healthy Eating*	These foods: • may provide few nutrients but are generally high in fat, added sugar, salt, caffeine and/or calories • tend to be highly processed (e.g., with added colouring, deep fried, high in hydrogenated fats) • may belong in the "Other Food" category in *Canada's Food Guide to Healthy Eating*
Grains	**Maximum Nutritional Value Examples**	**Moderate Nutritional Value Examples**	**Minimum Nutritional Value Examples**
Cereals	• cereal: whole grain, low-fat, good source of fibre • porridge: regular cooking oatmeal, unflavoured	• cereal: source of fibre, flake or crisp types • porridge: instant flavoured oatmeal	• cereal: sugar-coated or candied • regular granola
Pasta/Rice/Bread	• whole wheat, whole grain, and multigrain breads: pita, English muffins, bagels, rolls, buns, roti, tortilla, bannock • whole wheat pasta, noodles • couscous, bulgur • brown rice	• white enriched breads: pita, English muffins, bagels, rolls, buns, roti, tortilla, bannock • white pasta, noodles, rice noodles • white rice, enriched	

Grains	Maximum Nutritional Value Examples	Moderate Nutritional Value Examples	Minimum Nutritional Value Examples
Crackers and Snacks	• crackers: whole grain, lower fat content, such as whole wheat soda, rye flat breads • popcorn: air popped, unflavoured	• crackers: white flour soda, unflavoured rice crackers or cakes • pretzels • popcorn: microwaved, light • some types of plain cereal/granola bars (nutritional quality depends on the type of ingredients and relative proportions of whole grains, added fats and sugars)	• crackers: high fat, pastry types • granola bars: chocolate covered and/or with marshmallows
Baked Goods		• lower fat muffins and fruit loaves such as banana loaf (nutritional quality depends on the type of ingredients and relative proportions of whole grains, added fats and sugars) • cookies: whole grain, fruit bars, oatmeal, gingersnaps, graham wafers	• muffins, fruit loaves, and dessert breads made with commercially prepared mixes • pastries, danishes, cakes, packaged snack cakes, doughnuts, croissants • pies • cookies: with cream fillings, chocolate, and icing

Vegetables and Fruit	Maximum Nutritional Value Examples	Moderate Nutritional Value Examples	Minimum Nutritional Value Examples
	• baked or mashed potato • fresh, frozen, canned vegetables and fruit prepared without added sugar or salt • canned fruit: in its own juice, unsweetened • 100% unsweetened fruit juice • frozen fruit juice bar with 100% fruit juice	• dried fruit • canned fruit in syrup • 100% fruit leathers • salsa • fruit compote	• fruit drinks, punches, cocktails, "ades", blends • French fries or poutine • vegetables: breaded, fried, in cream or cheese sauces

Table 7 (cont'd)

Milk Products	Maximum Nutritional Value Examples	Moderate Nutritional Value Examples	Minimum Nutritional Value Examples
Milk	• milk: white, chocolate or flavoured, 2% MF or less • hot chocolate made with milk, 2% MF or less • soy beverage: fortified, low fat	• milk: homogenized • milkshakes, depending on ingredients • soy beverage: fortified, regular	• milkshakes: flavoured, (e.g., chocolate bar flavours) • eggnog
Cheese	• part-skim block cheese, cheese strings, 20% MF or less • cottage, 2% MF or less	• regular block cheese and string cheese, 21% MF or more	• processed cheese slices • spread
Yogurt and Puddings	• smoothies made with yogurt or milk, 2% MF or less, and fruit • yogurt: 2% MF or less • yogurt drinks, 2% MF or less	• Yogurt: more than 2% MF or with added granola • puddings made with milk	
Frozen Desserts and Snacks		• frozen yogurt, depending on the brand	• frozen yogurt, depending on the brand • ice cream
Meats and Alternatives	**Maximum Nutritional Value Examples**	**Moderate Nutritional Value Examples**	**Minimum Nutritional Value Examples**
Meat	• lean beef, veal, poultry, pork, lamb: baked, grilled, roasted	• lean lunch meats: ham, turkey, roast beef, pastrami • back bacon	• wieners • pepperoni slices or sticks • lunch meats: sausages, bologna, mock chicken, macaroni loaf, salami, kielbasa, side bacon • meat: battered, breaded or fried
Fish	• baked, grilled (not battered or breaded) • canned, packed in water	• canned, in oil	• fish sticks • fish: battered, breaded or fried
Legumes	• dried beans, peas and lentils: cooked • hummus • nuts, seeds, nut butters • peanut butter made with no hydrogenated fat • roasted soy beans	• peanut butter with added sugar and fat	

Meats and Alternatives	Maximum Nutritional Value Examples	Moderate Nutritional Value Examples	Minimum Nutritional Value Examples
Eggs	• hard boiled, poached, scrambled, with no added fat	• fried	
Soy Products	• tofu • soy-based alternatives • dried bean curd		

Other Category	Maximum Nutritional Value Examples	Moderate Nutritional Value Examples	Minimum Nutritional Value Examples
Beverages			• sports drinks • tea, iced tea, coffee • fruit-flavoured drinks and slushes • pop, diet pop, fruit sodas • instant hot chocolate made with water
Snack Foods			• flavoured cheese puffs, corn chips • sherbet • marshmallows • chewy fruit snacks • flavoured popcorn, potato chips • chocolate, candy, gum

Condiments, Spreads and Miscellaneous Food Items	Maximum Nutritional Value Examples	Moderate Nutritional Value Examples	Minimum Nutritional Value Examples
			• flavoured jelly powders • frozen ice treats such as ice pops • syrups, honey, jam, jelly • ice cream treats such as bars, cones • sour cream • whipped cream • cream cheese • non-dairy whipped toppings and creamers • instant noodle soups • gravy • cream • ketchup, mustard, relish • butter, margarine

Mixed Dishes	
	Consult a Registered Dietitian to assess if serving mixed dishes in schools is appropriate.

11.0 Conclusion

Establishing healthy eating patterns in childhood and adolescence has both short- and long-term implications with respect to the prevention of obesity and diet-related diseases such as heart disease, cancer and osteoporosis. Unhealthy eating increases the risk of damage to the potential of young people in every way; inadequate dietary intake hinders growth, development, activity and learning (Health Canada, 1997). Unfortunately, food consumption trends indicate a shift in the nutritional quality of children's and adolescents' diets, with research showing increasing intakes of foods with Minimum Nutritional Value. From educational and disease prevention perspectives, this inadequate attention to diet is a critical concern.

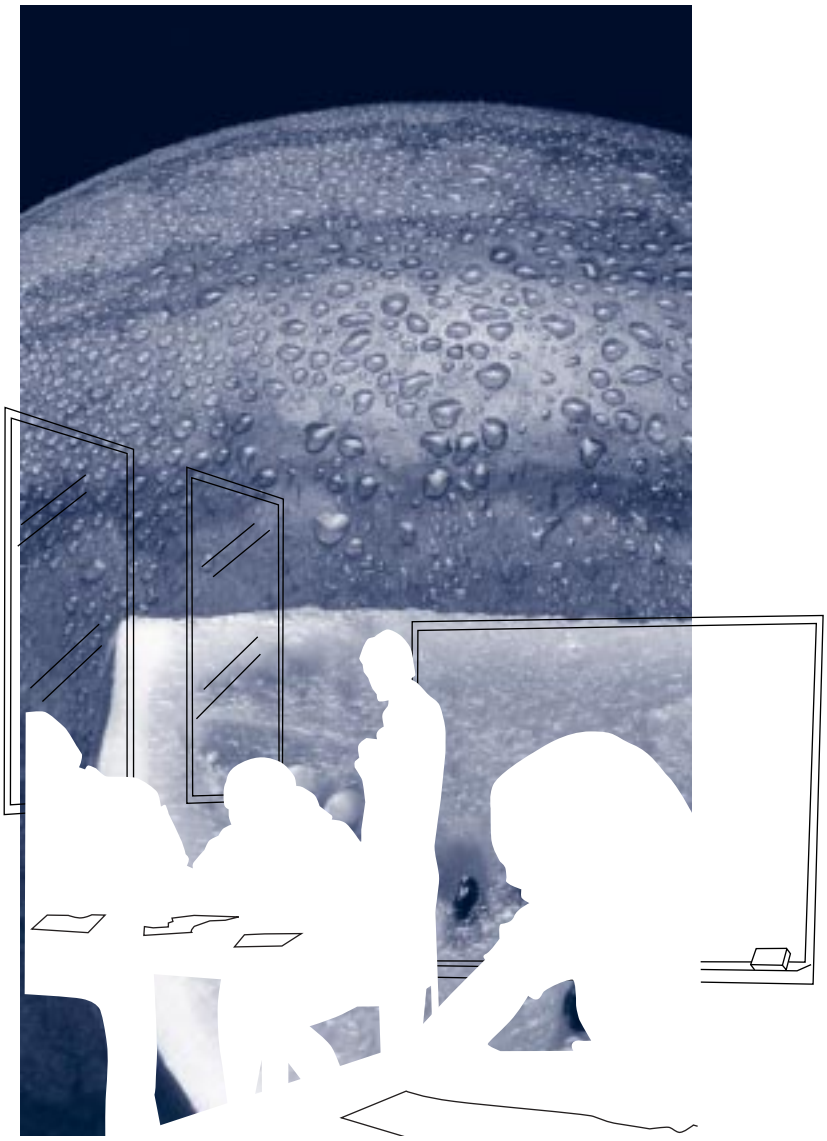
Although parents and care-givers have a responsibility to provide adequate amounts of healthy foods at regular times, sole responsibility cannot be placed on the home environment to influence young people to make healthy food choices. Young people spend a large part of their day in school, yet many schools have not taken adequate responsibility to promote healthy eating behaviours. Vending machines, cafeterias, school tuck shops, "special food" days, and in-class celebrations offer children access to typically large portions of foods with Minimum Nutritional Value. When nutritionally inadequate foods are available and promoted to young people at school every day, it is increasingly difficult for them to maintain a healthy diet. The school system plays a significant role in students' lives, not only academically, but also by promoting a Healthy School Nutrition Environment. Schools must acknowledge their role in ensuring students develop eating behaviours that will optimize their learning potential and reduce their risks of developing chronic diseases.

Many social, financial and academic pressures undermine the efforts of schools to provide foods with Maximum Nutritional Value. Many schools compensate for reduced funding and competing priorities by increasing the sales of foods with Minimum Nutritional Value. While the formal curriculum teaches about *Canada's Food Guide to Healthy Eating,* unhealthy foods are sold to raise funds, fast foods are introduced into the school, and an array of vending machines compete for students' money. This discrepancy between the formal curriculum and the hidden and parallel curricula goes unrecognized, yet it seriously jeopardizes the health of children and youth.

Schools must be supported in creating a healthy nutrition environment that ensures nutritional integrity between all levels of the curriculum and reflects the recommendations of the OSNPPH School Nutrition Workgroup.

The Workgroup strongly urges local school boards, boards of health and provincial government administrators to implement the Food Standards and recommendations in this report to address the nutritional health of children and youth. If successfully implemented, these will help to maintain and improve the health of students, ensuring that they are ready to learn. They will also guarantee that school nutrition environments support parents and teachers in encouraging students to establish healthy eating behaviours which they will be able to maintain throughout their lives (National Consensus Panel on School Nutrition, 2002). Students cannot apply what they learn in the classroom if they are offered foods and beverages mostly high in fat and sugar.

The OSNPPH School Nutrition Workgroup recognizes that creating a Healthy School Nutrition Environment is multifaceted, and requires active commitment from all stakeholders. As a strong collective, the Workgroup along with other nutrition professionals in public health, looks forward to partnering with school communities and affected stakeholders in order to create and develop a Healthy School Nutrition Environment.



References

American Academy of Pediatrics. 2004. Policy Statement Soft Drinks in Schools. Pediatrics, 113(1):152-154.

American Diabetes Association. 2000. Type 2 Diabetes in Children and Adolescents. Diabetes Care, 23(3): 381-389.

American Dietetic Association. 2003. Position Statement. Child and Adolescent Food and Nutrition Programs. 2003. Journal of American Dietetic Association. 103:887-893.

American Dietetic Association, Society for Nutrition Education, & American School Food Service Association. 2003. Nutrition Services: An Essential Component of Comprehensive School Health Programs. Journal of the American Dietetic Association. 103:505-514.

Basrur SV (Medical Officer of Health). Sept 2, 2003. Effects of Caffeine on Children's Health and Promoting Healthy Eating in Toronto Schools. Report to the City of Toronto Board of Health. City of Toronto Board of Health.

Bell R, Edward G, Evers S, Filsinger S. April, 1999. School Nutrition Initiative Draft Report. Unpublished document.

Berenson G, Arbeit M, Hunter S, Johnson C, Nicklas T. 1991. Cardiovascular Health Promotion for Elementary School Children: the Heart Smart Program. Annals of New York Academy of Science, 623:299-313.

Birmingham CL, Muller JL, Palepu A, Spinelli JJ, Anis AH. 1999. The Cost of Obesity in Canada. Canadian Medical Association Journal, 160(4):483-8.

California Project Lean. 2003. Successful Students Through Healthy Food Policies Act Now For Academic Excellence. California, United States.

Center for Science in the Public Interest [CSPI]. 2003a. Pestering Parents: How Food Companies Market Obesity to Children. Available at: http://www.cspinet.org/new /pdf/pestering_parents_final_part_1.pdf Accessed in January, 2004.

Center for Science in the Public Interest [CSPI]. 2003b. School Foods Tool Kit. A Guide to Improving School Foods and Beverages. Available at: http://www.cspinet.org /schoolfood/index.html Accessed in January, 2004.

Center for Hunger, Poverty and Nutrition Policy. 1995. Statement on the Link Between Nutrition and Cognitive Development in Children. 2nd ed. Medford, Mass: Tufts University School of Nutrition.

Centers for Disease Control and Prevention [CDC]. 1996. Guidelines for School Health Programs to Promote Lifelong Healthy Eating. Morbidity and Mortality Weekly Report, Vol. 45.

Conklin MT, Lambert LG, Anderson JB. 2002. How Long Does it Take Students to Eat Lunch? A Summary of Three Studies. The Journal of Child Nutrition and Management, 1:1-6. Available at: http://www.asfsa.org/childnutrition/ jcnm/02spring /conklin/ Accessed on February 20, 2004.

Contento IR, Manning AD, and Shannon B. 1992. Research Perspective on School-Based Nutrition Education. Journal of Nutrition Education, 24(5):247-260.

Dairy Farmers of Ontario. November, 1999. Letter to Medical Officer of Health.

Dickie NH and Bender AE. 1982. Breakfast and performance in school-children. British Journal of Nutrition, 48:483-497.

Dietz WH and Gortmaker SL. 2001. *Preventing Obesity in Children and Adolescents.* Annual Reviews in Public Health, 22: 337-353.

Dixey R, Heindl I, Loureiro I, Preez-Rodrigo C, Snel J, and Warnking P. 1999. Healthy Eating for Young People in Europe. International Planning Committee (IPC) of the European Network of Health Promoting Schools.

Evers S, Taylor J, Manske S, Midgett C. 2001. Eating and Smoking Behaviours of School Children in Southwestern Ontario and Charlottetown, PEI. Canadian Journal of Public Health, 92(6):433-436.

Fayette County Public Schools. 2003. Healthy Eating. Available at: www.fcps.net/pss/food/healthy.htm Accessed on January 15, 2004.

French SA, Story M, Jeffery RW, Snyder P, Eisenberg M, Sidebottom A, and Murray D. 1997. Pricing Strategy to Promote Fruit and Vegetable Purchase in High School Cafeterias. Journal of American Dietetic Association, 97:1008-1010.

Gillis L. 2001. Promoting Vitality in Youth. Canadian Journal of Dietetic Practice and Research, 62(2): 61-69.

Guo SS and Chumlea WC. 1999. Tracking of Body Mass Index in Children in Relation to Overweight in Adulthood. American Journal of Clinical Nutrition, 70(1):145S-8S.

Hanning R and Jessup L. May, 2002. Presentation Handout on Reality Check: What Kids are Eating in Ontario. Dairy Farmers of Ontario Symposium, Canada.

Hastings and Prince Edward District School Board. October 1, 2003. Volunteers go Apple Picking for FOOD FOR LEARNING. Available at: http://www.hpedsb.on.ca/ec/news/2003_04%20releases/apples_oct03.htm Accessed on January 15, 2004.

Health Canada. 1990. Canada's Guidelines for Healthy Eating. Minister of Supply and Services Canada: Ottawa, ON.

Health Canada. 1992a. Canada's Food Guide to Healthy Eating. Minister of Supply and Services Canada: Ottawa, ON.

Health Canada. 1992b. Food Guide Facts Background for Educators and Communicators. Minister of Supply and Services Canada: Ottawa, ON.

Health Canada. 1997. Food for Thought: Schools and Nutrition. Minister of Supply and Services Canada: Ottawa, ON.

Health Canada. 2003. Fact Sheet Caffeine and Your Health. Available at: http://www.hc-sc.gc.ca/food-aliment/dg/e_caffeine.html Accessed on February 20, 2004.

Heart & Stroke Foundation of Canada. 2002. Report Card on Health- Teens Could be Headed for Trouble. Available at: http://ww2.heartandstroke.ca/Page.asp?PageID=33&ArticleID=1088&Src=news&From=SubCategory Accessed on January 15, 2004.

References (cont'd)

Human Resources Development Canada. 1999. The Applied Research Branch of Strategic Policy of Readiness to Learn, Child Development and Learning Outcomes: Background T-98-4E.a. Ottawa: Applied Research Branch.

Ikeda J. 2003. Letter to Principal re: Using food as a reward. Unpublished.

Johnson RK, Panely C, Wang MQ. 1998. The Association Between Noon-Time Beverage Consumption and the Diet Quality of School-Aged Children. Journal of Children and Nutrition Management, 2:95-100.

Jones JM, Bennett S, Olmsted MP, Lawson ML and Rodin G. 2001. Disordered Eating Attitudes and Behaviours in Teenaged Girls: A School-Based Study. Canadian Medical Association Journal, 165(5): 547-552.

King AJC, Boyce WF, and King MA. 1999. Trends in the Health of Canadian Youth. Ottawa. Health Canada.

Kleinman RE, Murphy M, Little M et al. 1998. Hunger in Children in the United States: Potential Behavioral and Emotional Correlates. Pediatrics, 101:1–6.

Looker AC, Briefel RR, and McDowell MA. June 6-8, 1994. Calcium Intake in the United States. In: Optimal Calcium Intake. NIH Consensus Development Conference Programs and Abstracts. p.19.

Ludwig DS, Peterson KE, and Gortmaker SL. 2001. Relation Between Consumption of Sugar-Sweetened Drinks and Childhood Obesity. Lancet, 357:505-598.

McKenna ML. 2003. Issues in Implementing School Nutrition Policies. Canadian Journal of Dietetic Practice and Research, 64:208-213.

Market Facts. 1998. 1997 Canadian Eating Habits.

Meyers AF, Sampson AE, Weitzman M, Rogers BL, and Kayne H. 1989. School Breakfast Program and School Performance. American Journal of Diseases of Children, 43(10):234-1239.

Ministry of Health. 1997. Mandatory Health Programs and Services Guidelines. Province of Ontario.

National Association of State Boards of Education. 2000. Fit, Healthy, Ready to Learn: A School Health Policy Guide Part 1. Alexandria, VA: NASBE.

National Consensus Panel on School Nutrition. 2002. Recommendations for Competitive Food Standards in California Schools. California Center for Public Health Advocacy, School Nutrition Consensus Panel.

National Education Association. April, 2003. An Action Guide to Help You in Your Professional Development. Available at: http://www.nea.org/esphome/documents/espaction.pdf Accessed on January 15, 2004.

National Food Service Management Institute. 2000. NFSMI Insight-Barriers to a Good Nutrition Environment in the Middle Grades: Views from School Administrators, Teachers and Food Service Administrators. Available at: http://www.nfsmi.org/Information/2003resourceguide.htm#insight-barriers Accessed on February 20, 2004.

National Heart, Lung, and Blood Institute. 2002. National Heart, Lung, and Blood Institute Report on the Task Force on Research in Pediatric Cardiovascular Disease. Available at: http://www.nhlbi.nih.gov/resources/docs/pediatric_cvd.pdf Accessed on February 19, 2004.

Nawrot P, Jordan S, Eastwood J, Rotstein J, Hugenholtz A, and Feeley M. 2003. Effects of Caffeine on Human Health. Food Additives and Contaminants, 20(1):1-30.

Newman WP III, Freedman DS, Voors AW, et al. 1986. Relation of Serum Lipoprotein Levels and Systolic Blood Pressure to Early Atherosclerosis: the Bogalusa Heart Study. New England Journal of Medicine, 314:138-144.

Ontario Ministry of Education and Training. 1998. The Ontario Curriculum Grades 1-8 – Health and Physical Education. Province of Ontario.

Ontario Ministry of Education and Training. 1999. The Ontario Curriculum Grades 9 and 10 – Health and Physical Education. Province of Ontario.

Ontario Ministry of Education and Training. 2000. The Ontario Curriculum Grades 11 and 12 – Health and Physical Education. Province of Ontario.

Ontario Physical Health Education Association [OPHEA], Foundation for Active Healthy Kids. 2002. Youth Summit/ Active Healthy Schools Symposium 2001 Proceedings. OPHEA.

References (cont'd)

Ontario Association of Public Health Dentistry. 2003. Position Statement on Infant Feeding and Oral Health. Ontario Public Health Association. Health Beat, 22(3).

Ontario Public Health Association [OPHA]. 1995. Making a Difference in Your Community: A Guide for Policy Change. OPHA.

Ministry of Health and Long-Term Care. 1990. Health Promotion and Protection Act. Available at: http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/90h07_e.htm Accessed on February 20, 2004.

Papamandjaris A. 2000. Breakfast and Learning in Children: A Review of the effects of Breakfast on Scholastic Performance. Breakfast for Learning. Available at: http://www.breakfastforlearning.ca/english/resources_a3/materials/papa_report.pdf Accessed on February 24, 2004.

Parker L. 1989. The Relationship Between Nutrition and Learning: A School Employee's Guide to Information and Action. Washington: National Education Association.

Pigeon B. September, 2002. Review of the Literature-School Food & Nutrition Policy. Unpublished report prepared for Simcoe County Health Department.

Rosenbloom AL, Joe JR, Young RS, and Winter WE. 1999. Emerging Epidemic of Type 2 Diabetes in Youth. Diabetes Care, 22(2):345-354.

Simeon DT and Grantham-McGreagor S. 1989. Effects of Missing Breakfast on the Cognitive Functions of School Children of Differing Nutritional Status. American Journal of Clinical Nutrition, 49:646-653.

Statistics Canada. May, 2002. Health Indicators Catalogue #82-221-XIE. Canadian Community Health Survey 2000-2001. 2002(1):1-2.

Strauss RS. 2002. Childhood Obesity. Pediatric Clinics of North America, 49(1):175-201.

Team Nutrition USDA. 2002. Changing the Scene: Improving the School Nutrition Environment. Available at: http://www.fns.usda.gov/tn/healthy/kit.html Accessed on January 15, 2004.

Toronto District School Board. October 4, 2000. Policy of the Toronto District School Board Number E.09 Nutrition Foundation. Available at: http://www.tdsb.on.ca/boardroom/policies/e/e09.doc Accessed on January 15, 2004.

Tremblay MS and Willms JD. 2000. Secular trends in the body mass index of Canadian children. [published erratum appears in CMAJ 2001:164(7):970]. Canadian Medical Association Journal, 163(11):1429-1433.

Tufts University Center on Hunger, Poverty & Nutrition Policy. 1994. Statement on the Link Between Nutrition and Cognitive Development in Children. Tufts University, Metford MA.

U.S. Department of Health & Human Services. 2001. The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity 2001. Washington, DC: US Government Printing Office.

Weaver CM. 2002. Adolescence: The Period of Dramatic Bone Growth. Endocrine, 17(1):43-48.

World Cancer Research Fund. 1997. Food, Nutrition and the Prevention of Cancer: A Global Perspective. World Cancer Research Fund.

World Health Organization [WHO]. 1998. WHO Information Series on School Health Document Four, Healthy Nutrition: An Essential Element of a Health-Promoting Schools. WHO.

York Region Health Services Department, Nutrition Services. 2003. Clarifying the Caffeine Controversy. Available at: http://www.region.york.on.ca /Services /Public+Health+and+Safety/Food+and+Nutrition/ Nutrition+Services.htm#nutfash Accessed on February 20, 2004.

Appendix A – Definitions and Terminology

Healthy Eating

Healthy eating can be defined as the amount and variety of safe and culturally appropriate foods that provide the body with all the nutrients required, in adequate proportions. Nutrition is a major environmental influence on physical and mental growth and development in early life (Dixey et al., 1999). Healthy eating should be an integral part of daily student life that contributes to the physiological, mental and social well-being of individuals (WHO, 1998).

Canada's Guidelines for Healthy Eating

Canada's Guidelines for Healthy Eating are a user-friendly set of statements that promote healthy eating in a general way. The Guidelines were developed based on a review of nutrition research and provide recommendations describing the desired characteristics of the Canadian diet (Health Canada, 1990). The Guidelines are as follows:

1. Enjoy a variety of foods.
2. Emphasize cereals, breads, other grain products, vegetables and fruit.
3. Choose lower-fat dairy products, leaner meats and food prepared with little or no fat.
4. Achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating.
5. Limit salt, alcohol and caffeine.

Appendix A (cont'd)

Canada's Food Guide to Healthy Eating

Canada's Food Guide to Healthy Eating is an educational tool to help Canadians four years of age and over to establish healthy eating habits and meet their nutritional needs. Based on the principles in Canada's Guidelines for Healthy Eating, *Canada's Food Guide to Healthy Eating* goes a step further to give consumers detailed information on establishing healthy eating habits through the daily selection of food. *Canada's Food Guide to Healthy Eating* separates foods into four food groups: Grain Products, Vegetables and Fruit, Milk Products and Meat and Alternatives, as well as an Other Foods category. This tool emphasizes that healthy eating is the sum total of all food choices made over time and is not determined by any one food, meal or day's meals (Health Canada, 1992b).
Both *Canada's Guidelines for Healthy Eating* and *Canada's Food Guide to Healthy Eating* form the foundation for healthy eating principles and messages promoted in school-based nutrition education.

Nutrition Education

Involves "any set of learning experiences designed to facilitate the voluntary adoption of eating and nutrition-related behaviours conducive to health and well-being" (cited in Bell et al., 1999 by Contento et al., 1995).
The Ministry of Education curriculum guidelines defines formal learning expectations as part of the classroom lessons. However, informal learning experiences throughout the school day effects lasting change in student behaviours. Influence goes beyond the classroom and includes normative messages from peers and adults regarding foods and eating patterns (CDC, 1996). Ideally, classroom experiences link with a supportive school environment to enhance student learning.

Policy

While policy can be informal, it is most often a formal position taken on an issue used to define and support particular values and behaviours (Ontario Public Health Association, 1995). Policy can specify expectations, regulations and guides to action. Policy differs from recommendations or guidelines in that adherence to policy is mandatory, rather than voluntary (Bell et al., 1999). School nutrition policies offer a framework for coordinating all aspects of the school nutrition environment, including nutrition education, food services, and meal programs (CDC, 1996). Also, they provide an important educational tool, ensuring that healthy eating is promoted both in theory and practice.

Formal Curriculum

Formal curriculum refers to the mandated education policies that specify topic areas and content, and outline learning expectations for student achievement (Bell et al., 1999). Under the *Education Act of Ontario,* the Ministry of Education determines curriculum requirements. Within the **Call to Action** the formal curriculum refers to actual teaching in the school classroom.

Balanced School Day

The Balanced School Day is an alternative to the traditional school schedule for instructional times, and nutrition and physical activity breaks. A traditional school schedule represents approximately 300 minutes of instructional time with two 15-minute recess breaks, and one lunch break of up to one hour.
The balanced school day timetable divides the school day into three 100-minute blocks of instructional time.

Blocks are separated by a 40-50 minute break. Each break is divided into 20-25 minutes for eating and then 20-25 minutes for activity. This amounts to two break periods in the school day.

"Special Food" Day

A "special food" day takes many forms within individual schools. For the purposes of this report, a "special food" day is when lunch is offered to all students by an external vendor for a small fee. Typically, the money raised on "special food" days is used to support school activities (e.g., school trips), or purchase equipment and administrative items.

School Nourishment Programs

A school nourishment program is a general term for a breakfast, snack or lunch program offered by the school for all children. Generally, a combination of financial resources is used to fund these programs, including parental contributions, local community fundraising, and provincial funding via BREAKFAST FOR LEARNING, Canadian Living Foundation. These programs attempt to increase food availability, while also aiming to promote healthy eating and provide a positive social atmosphere for all students and staff.

Appendix B – *Mandatory Health Program and Services Guidelines* for Chronic Disease and Injury Prevention

The *Mandatory Health Program and Services Guidelines* for Chronic Disease and Injury Prevention state:

9. The board of health shall work with all schools and school boards to implement health promotion programming. Topics that must be included are tobacco-free living, healthy eating, healthy weights and regular physical activity. This shall include as a minimum:

a. provide assistance and consultation to school boards, school advisory councils and principals/teachers to review and implement health-related curricula on all the above topics as requested;

b. promote and provide teachers from all schools an opportunity to attend two hours of continuing education on one or more of the above mentioned topics;

c. provide ongoing consultation and development and review of learning materials for school boards, school councils and school staff throughout the year on all the above-mentioned topics; and

d. support the implementation of a variety of activities in schools on an ongoing basis. This will include: student-led school wide initiatives, peer education, peer support groups and annual awareness events on any of the above topics.

10. The board of health shall work with school boards, school advisory councils, principals/teachers and parents to develop and implement guidelines that support health eating and regular physical activity. This shall include as a minimum:

a. Promote the need for guidelines for healthy eating and daily physical activity with all school boards and all schools on an annual basis; and

b. Provide information, consultation and support to establish healthy eating guidelines consistent with *Canada's Food Guide to Healthy Eating* and relevant to foods available within the school including school nourishment programs, cafeterias, tuck shops/snack bars, vending machines, foods sold or distributed at special events and sports days, and foods used for fundraising.

Appendix C – Comparison Chart of Calorie, Fat and Sugar Content of Beverages Available in Schools

Per 100mL serving:	**POP-Pepsi, Coca Cola**	**POP-7up, Mountain Dew**	**Gatorade**	**Powerade**	**Fruitopia**
Calories	43.4-47 kcals	50-51 kcals	25.4 kcals	35 kcals	47-50 kcals
Sugar	11-11.3 g	12 g	N/A	8.7 g	12-13 g
Fat	0 g	0 g	0 g	0 g	0 g
Typical serving size	355 mL	355 mL	591 mL	591 mL	473 mL
Per individual serving size:	355 mL	355 mL	591 mL	591 mL	473 mL
Calories	154-167 kcals	178-181 kcals	150 kcals	207 kcals	222-237 kcals
Sugar	39-40 g	43 g	N/A	51.4 g	56.8- 61.5 g
Fat	0 g	0 g	0 g	0 g	0 g

Per 100mL serving:	**Snapple**	**100 % unsweetened orange juice**	**100 % unsweetened apple juice**	**2% milk**	**1% chocolate milk**
Calories	42-50 kcals	42 kcals	47 kcals	51.6 kcals	67.2 kcals
Sugar	9.6-12 g	9.2 g	10.4 g	4.8 g	10 g
Fat	0 g	0 g	0 g	2.0 g	1.2 g
Typical serving size	473 mL	250 mL (tetra box)	250 mL (tetra box)	250 mL	250 mL
Per individual serving size:	473 mL	250 mL	250 mL	250 mL	250 mL
Calories	199-237 kcals	103 kcals	114 kcals	129 kcals	160 kcals
Sugar	45.4-56.8 g	23 g	26 g	12 g	25 g
Fat	0 g	0 g	0 g	5 g	3 g

Information from: Pepsi Cola Canada, Coca Cola, www.mccain.ca, www.dairyland-ca.com, www.snapple.com .

Appendix D – Caffeine Consumption

Recommended Maximum Caffeine Intake Levels for Children and Adolescents

Age Group	Ages	Caffeine
Children*	4 - 6 years	45 mg/day
	7 - 9 years	62.5 mg/day
	10 - 12 years	85 mg/day
Male adolescents**	13-19	400-450 mg/day
Female adolescents	13-19	300 mg/day

*Based on the recommended maximum intake of 2.5 milligrams per kilogram of body weight per day, average body weights of children (Health and Welfare Canada, 1990), and on "behavioural effects" of caffeine (Health Canada, accessed on February 20, 2004).

**Recommendations based on written correspondence from the Bureau Chemical Safety, Food Directorate, Health Canada.

This is how easily a child can reach his/her maximum caffeine intake:

Child Age	Food Portion needed to reach maximum caffeine intake
4-6 years	1 can cola
7-9 years	1 chocolate brownie **plus** 1 bottle (473mL) of iced tea **plus** a chocolate bar, **plus** 1 cup chocolate milk
10-12 years	1 bottle (473mL) of iced tea **plus** 1 can of cola **plus** 2 brownies

York Region Health Services Department, August 2003

Appendix D – Caffeine Content of Common Canadian Foods

Coffees	**Serving Size**	**Caffeine* (mg)**
Coffee (variety of brands)	1 cup** (250 mL)	137
Coffee, roasted and ground (percolated)	1 cup (250 mL)	118
Coffee, roasted and ground (filter drip+)	1 cup (250 mL)	179
Coffee, regular instant (variety of brands)	1 cup (250 mL)	76–106
Coffee, decaffeinated brewed (variety of brands)	1 cup (250 mL)	3
Cafe Latte	1 cup (250 mL)	35
Cappuccino	1 cup (250 mL)	69
Espresso	2 oz (60 mL)	70-125

Teas	**Serving Size**	**Caffeine* (mg)**
Tea (variety of brands)	1 cup (250 mL)	43
Iced Tea (bottled, canned or powder)	1 cup (250 mL)	15
Green Tea	1 cup (250 mL)	30
Herbal Tea	1 cup (250 mL)	0
Tea, decaffeinated	1 cup (250 mL)	0

Please note that mugs and take-out cups are often larger than 250 mL and would therefore contain more caffeine.

Soft Drinks	**Serving Size**	**Caffeine* (mg)**
Pepsi/Coke or cola type beverages	355 mL (1 can)	37
Diet Pepsi/Coke or cola type beverage	355 mL (1can)	50
7-Up, Crush Flavours, Mountain Dew	355 mL (1 can)	0
Soft Drinks, decaffeinated	355 mL (1 can)	0

Chocolate Products	**Serving Size**	**Caffeine* (mg)**
Chocolate Milk	1 cup (250 mL)	5-8
Baking Chocolate	28 g	25-58
Hot Chocolate, from vending machine or mix	1 cup (250 mL)	5-9
Chocolate Bar	45 g	11-23
Chocolate Brownie (6cm x 6cm)	1.5 oz (42 g)	10
Chocolate Cake (1/12 cake)	2.8 oz (80 g)	6

Ice Creams	**Serving Size**	**Caffeine* (mg)**
Coffee-flavoured Ice Cream	1/2 cup (125 mL)	21
Chocolate-flavoured Ice Cream	1/2 cup (125 mL)	2

Yogourt	**Serving Size**	**Caffeine* (mg)**
Coffee-flavoured Yogourt	175 g	10

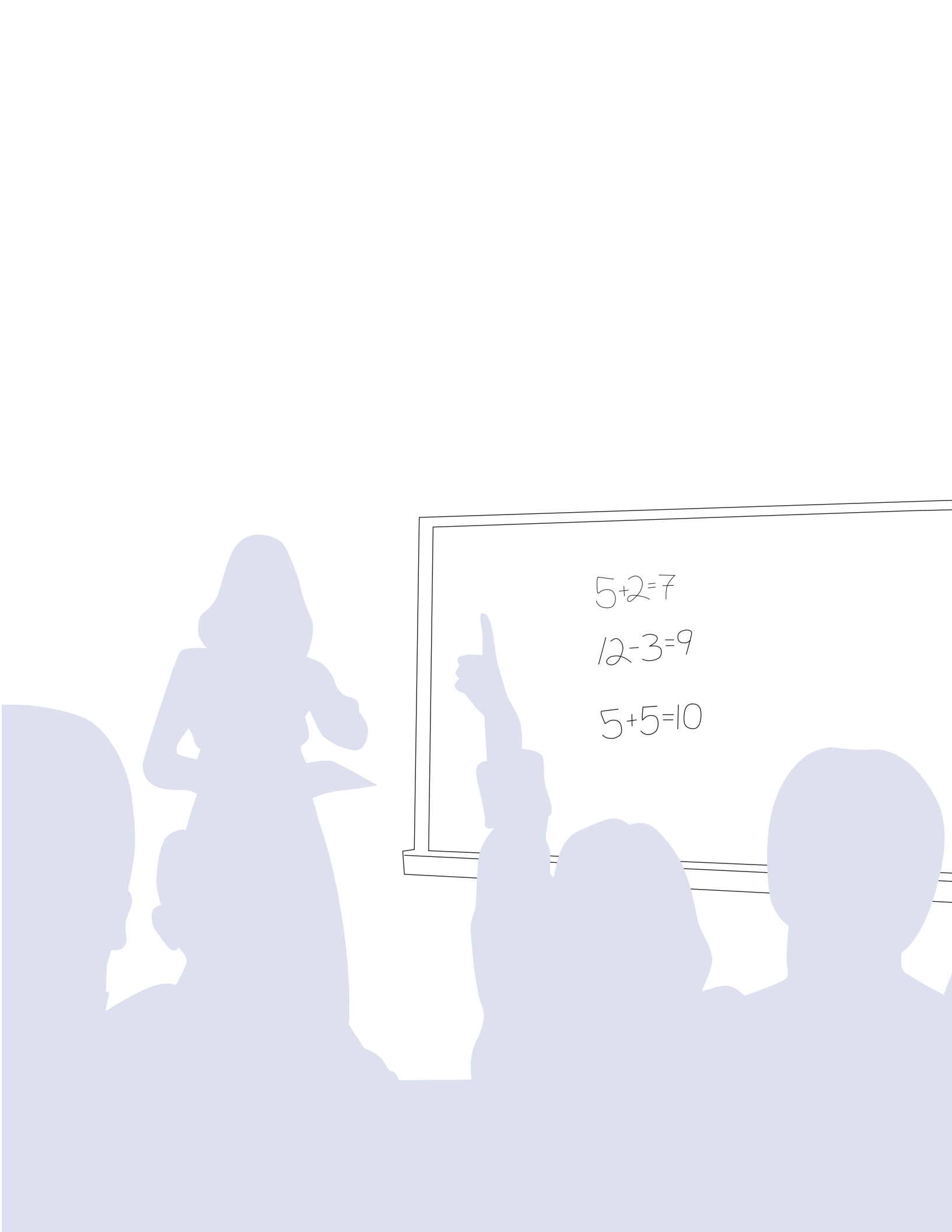
Medicine	
Medicine	Check label for the caffeine content.

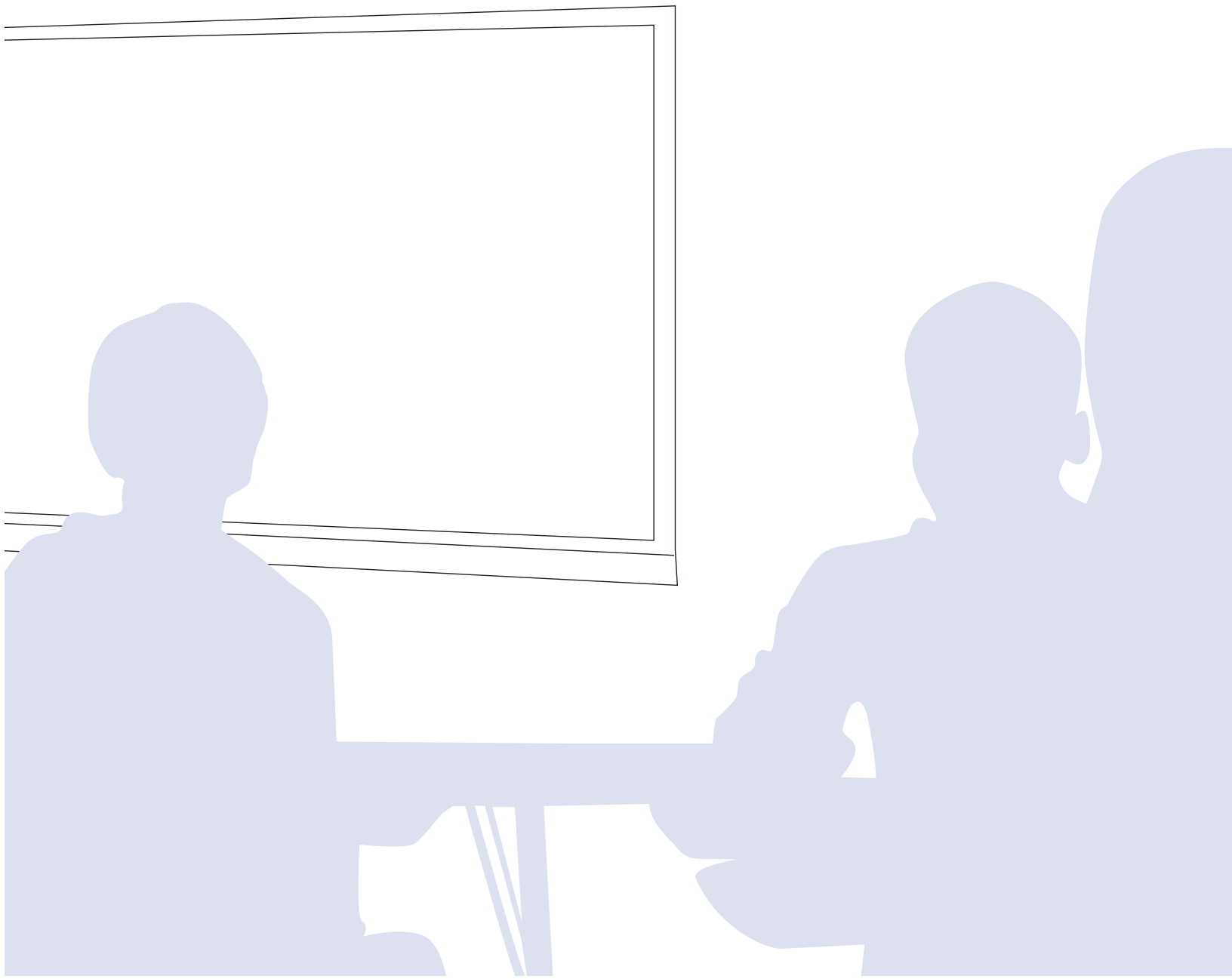
*The above values are given as approximations or ranges and values will vary depending on the food manufacturer, brewing method, plant variety and brand.

** 1 cup= 8 fl. oz.

+Coffee shops serve filter drip coffee.

York Region Health Services Department, August 2003.


5+2=7
12-3=9
5+5=10



Ontario Society of Nutrition
Professionals in Public Health

La société ontarienne des professionnel(le)s
de la nutrition en santé publique

c/o Ontario Public Health Association
Lawrence Square
700 Lawrence Ave. West, Suite 310
Toronto, Ontario M6A 3B4